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# Index for Vol. XXXVI of Gleanings in Bee Culture.

In using this index the reader should not fail to note that it is divided into five departments, namely, General Correspondence, Editorials, A. I. Root's writings, Contributors, and Illustrations. The whole index has been prepared with great care. Sometimes two and even three catch-headings will be found, referring to the same general subject. The purpose of tnis cross-indexing is to facilitate reference. If the reader does not find the subject he desires under one head, let him think of some other catch-heading and try that, and so on. If not found in the General Correspondence try Editorials or Illustrations. Subjects are never indexed under the words *A*, *An*, *The*, *How*, etc. Always look for some important catch-word that comprehends the thought or discussion.

Editorials are indexed separately, as they relate to prices, current items, announcements, and the general scope of current discussion.

The index of Illustrations will be found especially valuable from the fact that most of the important articles have cuts. By looking for the cut under this index one will be able to locate the subject he seeks.

Owing to the fact that our index for this year is very complete we have been compelled to run the headings in. While this is not quite as handy as the line-for-line scheme, we are compelled to adopt it on account of a lack of room.

## GENERAL CORRESPONDENCE

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6 | Christian's Secret of a Happy Life. Cloth..... 25

For several years we have been unable to get a nice substantial copy of this book at a reasonable price. We are glad to tell our friends now, however, that we have a very pretty edition, bound in cloth, at the very reasonable price of 25 cents. If wanted by mail, add 6 cents for postage. This book has had a very large sale for more than 20 years, and when I tell you that quite a number of people have been converted to the Lord Jesus Christ simply by reading it you will no longer wonder why it sells. At one time it was carried and sold by the newsboys on our railways. It not only contains a wonderful "secret" for unbelievers, but for many who have been church-members all their lives, but not the "happy" church-members that God intended we should be.

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| Bienenzucht und Honiggewinnung..... 25

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5 | The Honey-bee, by Thos. William Cowan..... 95

10 | How to Keep Bees..... 90

3 | Merrybanks and His Neighbor, by A. I. Root... 12

10 | Forty Years Among the Bees. By Dr. C. C. Miller, Marengo, Ill..... 90

15 | Modern Bee-farm. By S. Simmins. New edition; cloth bound.....1 85

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5 | A B C of Strawberry Culture,** by T. B. Terry.. New edition, revised and enlarged; paper, 45c; cloth, 68c; by mail, 75c.

5 | A B C of Potato Culture, Terry** New edition, revised & enlarged; paper, 45c; cloth, 68c, mail 75c. This is T. B. Terry's first and most masterly work.

6 | Asparagus Culture ..... 40

6 | Alfalfa Culture..... 40

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2 | Celery for Profit, by T. Greiner** ..... 25

The first really full and complete book on celery culture, at a moderate price, that we have had. It is full of pictures, and the whole thing is made so plain that a schoolboy ought to be able to grow paying crops at once without any assistance except from the book.

10 | Draining for Profit and Health, Warring..... 90

8 | Domestic Economy, by I. H. Mayer, M. D.** ... 30

This book ought to save at least the money it costs, each year, in every household. It was written by a doctor, and one who has made the matter of domestic economy a life study. The regular price of the book is $1.00, but by taking a large lot of them we are enabled to make the price only 30 cents.

10 | Fruit Harvesting, Storing, Marketing, etc..... 75

It has been well said that it is an easier matter to grow stuff than to sell it at a proper price after it is grown; and many men fail, not because they are inexpert in getting a crop, but because they do not know how to sell their crops to the best advantage. This is the first book of the kind we have had as an aid in selling. It not only tells all about picking, sorting, and packing, but gives all the best methods for storing for one or two days or a longer time. It also tells about evaporating and canning when there is a glut in the market. It discusses fruit packages and commission dealers, and even takes in cold storage. It is a new book of 250 pages, full of illustrations. Publisher's price, $1.00.

| Farming with Green Manures, postpaid**..... 90

This book was written several years ago; but since competent labor has got to be so expensive, and hard to get, many farmers are beginning to find they can turn under various green crops cheaper than to buy stable manure, and haul and spread it—cheaper, in fact, than they can buy fertilizers. This book mentions almost all plants used for plowing under, and gives the value compared with stable manure. Some of the claims seem extravagant, but we are at present getting good crops, and keeping up the fertility, by a similar treatment, on our ten-acre farm.

7 | Farm, Gardening, and Seed-growing** ..... 90

10 | Fuller's Grape Culturist**.....1 15

5 | Garden and Farm Topics, Henderson**..... 0

12 | Gardening for Pleasure, Henderson*.....1 10

While "Gardening for Profit" is written with a view of making gardening PAY, it touches a good deal on the pleasure part, and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations. (Retail price $2.00.)

12 | Gardening for Profit**.....1 10

This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book let it be the above. It has 376 pages and 138 cuts (Retail price $2.00.)

8 | Gardening for Young and Old, Harris**..... 90

This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

3 | Grasses and Clovers, with Notes on Forage Plants ..... 20

This is by Henry A. Dreer, author of the book "Vegetables Under Glass" that has had such a large sale of late. This little book tells how six tons of grass has been grown to the acre, and gives much other valuable matter.

Postage.] [Price without postage.

10 | Greenhouse Construction, by Prof. Taft** . 1 15

This book is of recent publication, and is as full and complete in regard to the building of all glass structures as is the next book in regard to their management. Any one who builds even a small structure for plant-growing under glass will save the value of the book by reading it carefully.

12 | Greenhouse Management, by Prof. Taft**.....1 15

This book is a companion to Greenhouse Construction. It is clear up to the times, contains 400 pages and a great lot of beautiful half-tone engravings. A large part of it is devoted to growing vegetables under glass, especially Grand Rapids lettuce, as well as fruits and flowers. The publisher's price is $1.50; but as we bought quite a lot of them we can make a special price as above.

5 | Gregory on Cabbages, paper* ..... 20

5 | Gregory on Squashes, paper*..... 20

5 | Gregory on Onions, paper*..... 20

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

| Handbook for Lumbermen..... 05

5 | Home Pork-making; 125 pages, illustrated..... 40

I think it will pay well for everybody who keeps a pig to have this book. It tells all about the care of the pig, with lots of pictures describing cheap pens, appliances, all about butchering, the latest and most approved short cuts; all about making the pickle, barreling the meat, fixing a smoke-house (from the cheapest barrel up to the most approved arrangement); all about pig-troughs; how to keep them clean with little labor; recipes for cooking pork in every imaginable way, etc. Publisher's price is 50 cents, ours as above.

15 | How to Make the Garden Pay**.....1 35

By T. Greiner. Those who are interested in hot-beds, cold-frames, cold green-houses, hothouses, or glass structures of any kind for the growth of plants, can not afford to be without the book. Publisher's price $2.00.

| How we Made the Old Farm Pay—A Fruit-book, Green ..... 10

10 | Irrigation for the Farm, Garden, and Orchard* 85

By Stewart. This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills to take the place of rain, during our great drouths, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

3 | Maple Sugar and the Sugar-bush**..... 25

5 | Manures; How to Make and How to Use Them; in paper covers..... 30

6 | The same in cloth covers..... 65

| Nut Culturist, postpaid.....1 25

3 | Onions for Profit**..... 40

Fully up to the times, and includes both the old onion culture and the new method. The book is fully illustrated, and written with all the enthusiasm and Even if one is not particularly interested in the business, almost any person who picks up Greiner's books will like to read them through.

10 | Our Farming, by T. B. Terry**..... 75

| Same, paper cover, postpaid..... 50

In which he tells "how we have made a run-down farm bring both profit and pleasure."

If ordered by express or freight with other goods, 10c less.

8 | Practical Floriculture, Henderson.*..... 1 10

10 | Profits in Poultry.* .....1 00

10 | Small-Fruit Culturist, Fuller ..... 75

2 | Experiments in Farming. By Waldo F. Brown. 08

This little book ought to be worth its cost for what is said on each of the four different subjects; and the chapter on cement floors may be worth many dollars to anybody who has to use cement for floors, walks, or any thing else. In fact, if you follow the exceedingly plain directions you may save several dollars on one single job; and not only that, get a better cement floor than the average mason will make.

2 | Sweet Potatoes; Forty Years' Experience with. By Waldo F. Brown **..... 08

This little book, by a veteran teacher at our farmers' institutes, ought to be worth many times the price to everybody who grows even a few sweet potatoes in the garden. It also gives full particulars in regard to handling and keeping this potato, which is difficult to keep unless you know just how.

10 | Talks on Manures* .....1 35

By Joseph Harris. Written conversational style, which makes it very interesting reading. It covers the subject very completely; contains numerous analyses of manures and comparative tables. The use of technical language is avoided, which makes the book of greatest value to the practical farmer. A book of 366 pages, nicely bound in cloth.

5 | The New Rhubarb Culture**..... 40

Whenever apples are worth a dollar a bushel or more, winter-grown rhubarb should pay big. It does not require an expensive house nor costly appliances. Any sort of cellar where it will not freeze is all right for it; and the small amount of heat necessary to force the rhubarb costs very little. The book is nicely bound in cloth, full of illustrations, mostly photos from real work, 130 pages. Every market-gardener should have this book, for the lessons taught indirectly, in regard to forcing other crops besides rhubarb. Publisher's price 50c.

5 | Tile Drainage, by W. I. Chamberlain..... 35

Fully illustrated, containing every thing of importance clear up to the present date.

The single chapter on digging ditches, with the illustrations given by Prof. Chamberlain, should alone make the book worth what it costs, to every one who has occasion to lay ten rods or more of tile. There is as much science in digging as in doing almost any thing else; and by following the plan directed in the book, one man will often do as much as two men without this knowledge.

5 | Tomato Culture ..... 35

In three parts. Part first.—By J. W. Day, of Crystal Springs, Miss., treats of tomato culture in the South, with some remarks by A. I. Root, adapting it to the North. Part second.—By D. Cummins, of Conneaut, O., treats of tomato culture especially for canning-factories. Part third.—By A. I. Root, treats of plant-growing for market, and high-pressure gardening in general.

3 | Vegetables under Glass, by H. A. Dreer**..... 20

3 | Vegetables in the Open Air*..... 20

This is a sort of companion book to the one above. Both books are most fully illustrated, and are exceedingly valuable, especially at the very low price at which they are sold. The author, H. A. Dreer, has a greenhouse of his own that covers one solid acre, and he is pretty well conversant with all the arrangements and plans for protecting stuff from the weather, and afterward handling to the best advantage when the weather will permit out of doors.

3 | Winter Care of Horses and Cattle..... 25

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in a book. It has 44 pages and 4 cuts.

3 | Wood's Common Objects for the Microscope**.. 47

8 | What to Do, and How to be Happy while Doing It..... 65

The above book, by A. I. Root, is a compilation of papers published in *Gleanings in Bee Culture*, in 1886, '7, and '8. It is intended to solve the problem of finding occupation for those scattered over our land out of employment. The suggestions are principally about finding employment about your own homes. The book is mainly upon market-gardening, fruit-culture, poultry-raising, etc. Illustrated, 188 pages, cloth

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# Gleanings in Bee Culture

A Bee Experiment Station in Switzerland.

The A. I. Root Co., Medina, O., U. S. A.

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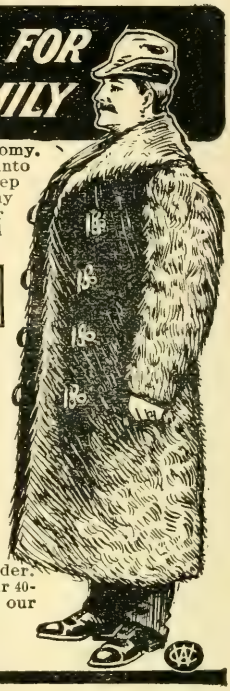
Vol. XXXVI January 1, 1908 No. 1

# HAVE YOUR HIDES MADE INTO FURS FOR THE WHOLE FAMILY



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I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

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**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

ZANESVILLE.—As is usual at the holiday season, the demand for honey is very slack. There is plenty of fancy white alfalfa comb on this market, which brings 18 to 19, wholesale; practically nothing else offered, save a little dark-looking fall honey brought in by farmers. There is almost no demand for extracted except in glass retail packages. The local financial condition is not far from normal, and this would indicate an increased demand for honey early in the new year. Beeswax quiet, and supply slightly in excess of demand. For good yellow wax would pay 30 f. o. b. here in exchange for bee supplies.

EDMUND W. PEIRCE,
Dec. 19. 136 West Main St., Zanesville, O.

KANSAS CITY.—The demand for both comb and extracted continues slow; receipts fair, but don't look for much improvement until after the holidays. We quote No. 1 white comb, 24-section, $3.25; No. 2, white and amber, $2.75 to $3.00; extracted white, 8 to 8½; extracted amber, 7 to 7½. Beeswax, 25 to 27.

C. C. CLEMONS & Co.,
Dec. 21. Kansas City, Mo.

SCHENECTADY.—As usual during the holiday season, honey market dull and but very little demand. Present prices would have to be shaded to induce sale. Prices later on will depend on the financial situation to a great extent, and the number of unemployed honey-consumers.

C. MACCULLOCH,
Dec. 18. Schenectady, N. Y.

INDIANAPOLIS.—Demand for comb honey seems to be limited, and very little is now being offered by producers. Evidently those who disposed of their crop early were most fortunate. Jobbers are offering 15 and 16, delivered. Extracted honey is in better demand, especially best grades, and jobbers are paying 9 cents, delivered. Beeswax is in fair demand, and brings 28 cents cash, or 30 in exchange for merchandise.

WALTER S. POUDER,
Dec. 17. Indianapolis, Ind.

ST. LOUIS.—Since our last, of Dec. 9th, there is no change in our honey market. The receipts, however, have been very small, and this market is almost bare of extracted honey. There is enough comb honey here to meet the small demand. We quote fancy comb honey, white, 16 to 17; No. 1, 15 to 16; amber color, 14 to 16, according to quality and condition. Broken and defective honey cells at considerably less. Extracted white, in cans, nominal at 8½ to 9; amber, in cans, 8 to 8½; in barrels and half-barrels, ½ to 1 per lb., less. Beeswax, 26 for choice pure. All impure and inferior, lower.

R. HARTMANN PRODUCE CO.,
Dec. 19. St. Louis, Mo.

CHICAGO.—The market is quiet, very little being sold; prices are same as last quoted. Choice grades only are wanted; with the holidays over we may look for more activity in the honey line. Beeswax, 28 to 30.

R. A. BURNETT & CO.,
Dec. 18. 199 S. Water St., Chicago, Ill.

SAN FRANCISCO.—Honey moves very slowly at present, as high prices have curtailed the demand. With light offerings and few arrivals of new stock, prices are firmly maintained. Light amber, extracted, 7 to 7½; water-white comb, 16 to 17; white comb, 15; water white, extracted, 8 to 8½.—*Pacific Rural Press.*
Dec. 21.

DENVER.—The local demand for comb honey is light at present, and we do not expect much improvement until after the holidays. We quote No. 1 white, per case of 24 sections, $3 25 to $3 50; light amber and No. 2, $2.75 to $3.00. We now have a good stock of very fine extracted honey which we offer at 9 to 10 cts. for strictly white alfalfa; light amber, 8 to 9; strained amber honey, 6¾ to 7½. We are paying 22 to 24 for clean yellow beeswax.

THE COLORADO HONEY PRODUCERS' ASSO'N,
Dec. 10. F. RAUCHFUSS, Mgr.

BUFFALO.—The demand for honey is very slow. The quantity in our market is small; and if the demand were fair for a short time it would soon clean up what is here. We quote fancy white comb, 16 to 17; No. 1 ditto, 15 to 17; No. 2 ditto, 13 to 14; No. 1 buckwheat, 11 to 12½; No. 2, 9 to 11; No. 1 white extracted, 8 to 9; ditto dark, 7 to 7½. Beeswax, 30 to 35.
Dec. 11. W. C. TOWNSEND.

ST. PAUL.—Fancy white clover, new, per lb., 18; strained, in 60-lb. cans, per lb., 10.

W. H. PATTON,
Dec. 10. Sec. Bd. of Trade, St. Paul, Minn.

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We are always in the market.

If you have any to sell, mail small average sample to

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WE WILL BUY AND SELL

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If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

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I WILL BUY YOUR

# HONEY

for cash. Send sample, and mention quality, style of package, and price.

ONE CAR OF ALFALFA HONEY WANTED.

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THE A. I. ROOT CO., Medina, Ohio

J. T. CALVERT, Business Manager

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, and Mexico. Canadian postage is 30c per year. For all other countries in the Postal Union add 60 cents per year postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. The notice should be sent two weeks before the change is to take effect.

DISCONTINUANCES.—The journal is sent until orders are received for its discontinuance. We give notice just before the subscription expires, and further notice if the first is not heeded. Any subscriber whose subscription has expired, wishing his journal discontinued, will please drop us a card at once; otherwise we shall assume that he wishes his journal continued, and will pay for it soon. Any one who does not like this plan may have it stopped after the time paid for it by making his request when ordering.

HOW TO REMIT. Remittances should be sent by Draft on New York, Express-order or Money-order, payable to order of The A. I. Root Company, Medina, Ohio. Currency should be sent by Registered Letter.

AGENTS. Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

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Foreign subscribers can save time and annoyance by placing their orders for GLEANINGS with any of the following authorized agents, at the prices shown:

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**908 Jefferson Av., Toledo, O.**

# Why the Price is High.

The *Bee-keepers' Review* enjoys the distinction of being sold at the highest proportionate price of any bee-journal published in this country, and

**There is a "Reason."**

It has no connection whatever with any supply trade, or any other business, and must depend, for its existence, solely upon the profits that accrue from its publication. Of course its editor might take up the supply trade, but his tastes are not in that direction, and he prefers to keep his mind wholly unbiased by the influence of trade.

Then, again, the *Review* has become what might be called

**The Specialist's Journal;**

that is, it appeals most strongly to the man who is keeping bees to make money; hence it can never hope for more than a moderate subscription list.

For this reason it

**Can't be Published at Less**

than its present price; but the man who really needs it, the one who is keeping bees as a business, as a specialty, or even as a money-making side-issue, is only too glad to get the paper even at $1.00; as the knowledge thereby gained brings to him many dollars in the course of a year.

Once a bee-keeper of this class reads the *Review* a year or two, he is almost certain to keep on reading it; and it is to induce a man to give it this trial that I sometimes make

**Special Offers.**

Just now I have about 200 complete sets left of the back numbers for 1907 that I will send free, as long as they last, to new subscribers for 1908. The information in these issues is just as valuable now as when first published. Send $1.00 and you will get the *Review* for 1907 and 1908. This will be only 50 cents a year, and, when your time is out, if you don't care to renew, we can part as friends, and no harm done. For $2.00 you can get the *Review* for 1907 and 1908 and the book Advanced Bee Culture. Book alone, $1.20.

**W. Z. HUTCHINSON, :: :: :: FLINT, MICH.**

---

# At Just Half Price!

The **American Bee Journal**, which is now a 32-page monthly, in its 48th year, is the oldest bee-paper in America. It is only 50 cents, but you can have it at just half price (**for 25 cents**) when taken with any one of the following list of standard bee-books:

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| "A B C and X Y Z of Bee Culture" | 1.50 |
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| "Honey-Money Stories" (68-page pamphlet) | .25 |

Just add 25 cents to any of the above prices, and we will mail you both the book and the Bee Journal for one year. Sample copy of Journal **free**.

**George W. York & Co.**

**118 W. Jackson, Chicago, Ill.**

# SQUABS FOR PROFIT

**By William E. Rice and William E. Cox**

This is the most complete and exhaustive work of the kind ever published on squab raising. It is not a book of second-hand references, but contains the hard-earned experiences of the authors. Every detail of their methods of selecting, breeding, feeding, killing, and marketing squabs is given in plain, simple language, with numerous illustrations, all taken from the home plant of Mr. Rice in New Jersey. The chapter on buildings, their location, and how to construct them is concise, specific, and complete.

The squab industry is increasing rapidly. This book is a guide for those who want to know, and a standard reference work for the old-time breeder. It is not based on mere theory, but contains the true story of the most successful squab plant in this country. The story of how $50, the original investment, has grown to $3,000, is fully given by Mr. Rice. He took the money made by the squabs, enlarged and developed his plant, until it is now complete.

The illustrations are simply superb. They were taken especially for this work. The plants and specifications for buildings, etc., are as complete as an expert architect could make them. The book contains about 150 pages, each 5x7 inches, printed on fine paper. Bound in cloth and sent postpaid for 50 cents.

**THE A. I. ROOT COMPANY**
**MEDINA, OHIO**

# Gleanings in Bee Culture

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It is time for us to remind our friends who have large apiaries who depend on outside help not to put off securing this help until the season is immediately before us. Mr. H T. Chrisman, who carried a six-line want ad. in December 1st GLEANINGS, writing under date of December 10th says: "I have been flooded with applications." This shows the value of GLEANINGS; but we caution you not to wait until April or May and then expect to get help so readily. This is the time to send in your want ads.

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### HOW A NEW YORK SUBSCRIBER REGARDS GLEANINGS.

*The A. I. Root Co.*—A merry Christmas to all, with 999 thanks for the present style of wrapper GLEANINGS is mailed in. When I kicked about sending it out without a wrapper I did not suppose you would go and do it better than ever; but that is just the A. I. R. of it. I enjoy reading GLEANINGS the best of any paper I ever came across—but always feel sad when I stop and think that our friend J. H. Martin will never pen another page for it, for that was my first page to read. C. R. MORTS.

Mohawk, N. Y.

---

### "SURE HATCH" INCUBATORS.

Nothing has done so much to revolutionize the poultry industry as the invention and use of well-made incubators sold at a comparatively low price, placing them within the reach of nearly all poultry-raisers.

One of the concerns which has taken a prominent part in this revolution is the Sure Hatch Incubator Co., of Fremont, Nebraska, and Indianapolis, Indiana. It has made quite a specialty of supplying incubators to the farmer class, who demand something simple, effective, and cheap. This company has had a long and successful career in developing this business. They are peculiarly well situated for shipping their goods; for example, their factory is connected with the tracks of the Union Pacific, Chicago & Northwestern, and Burlington & Great Northern Railroads. At their place in Indianapolis they are even better situated. This insures for them great promptitude and low rates in filling orders to all parts of the country.

They issue quite a catalog, which is well worth sending for, and which, too, is gladly sent to all applicants. You may send to the address which is most convenient to you. Their advertisement may be found on page 51 of this issue. Kindly mention GLEANINGS when you write.

---

### IWAN POST-HOLE AUGER.

The best spade is a poor hole-digger, and the old-fashioned double-spade diggers and augers are not much better. But post-hole digging, instead of being tiresome and slow, is now easily and rapidly done by the use of a most remarkable labor-saving post-hole and well auger, made by Iwan Bros.—a name that guarantees quality. The bowl of this practical auger consists of two interlocking crucible-steel blades, scientifically shaped so that they sink themselves in any kind of soil almost without any pressure. Three full turns do it. Then, in pulling them out, there is not the slightest resistance from suction. These strong blades are attached to a malleable arch with a strong handle of convenient length. These augers are made in all sizes from 3 to 14 inches. A more simple and practical hole-auger could not be made. Iwan Bros., Streator Ill., will be glad to give you complete information. Write them to-day, and mention this paper.

# ABC AND XYZ of Bee Culture

By A. I. and E. R. ROOT

## New 1907 Edition

NOW ON SALE.

## LARGER and BETTER

115,000 Copies have been Printed

## A BEE-KEEPERS' ENCYCLOPEDIA

## All the New Ideas

Hundreds of Illustrations to make every thing plain and practical

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Full Leather ..... 2 50
Postpaid to any Country in the World

## THE A.I.ROOT CO.

MEDINA :: :: OHIO

Only two years have elapsed since we brought out an edition of 15,000 copies of the well-known A B C of Bee Culture. This brought up the number to 100,000 copies, thereby surpassing in popularity all other bee-books ever printed.

The demand for these has been so great that we were compelled to undertake a new edition at once, and in doing so we took the opportunity to revise and greatly enlarge it again, though it had been generally considered quite a large book.

In doing so we brought in new blood to assist us, give new ideas, and otherwise enable us to produce as good a book as it is possible to make at a popular price. If you will carefully examine a copy you will be prepared to admit the new volume is quite an improvement on its predecessors. To keep pace with improvements it contains nearly 100 double-column pages more than the previous edition.

The new methods of queen-rearing have been carefully reviewed, and the main points incorporated in the new edition, so that the practical bee-keeper who possesses a copy will have the best ideas of the subject constantly by his side for reference.

The new methods of wax-production are treated in an exhaustive fashion; and as this subject is now of more importance than formerly, more space has been devoted to it.

The new power-driven automatic extractors are amply illustrated and described. The subject of diseases has received entirely new treatment to keep pace with the new discoveries of the last few years. The laws relating to bees have for the first time received full treatment. No other bee-book treats of this very important subject. Honey, sugar, nectar, and glucose are carefully defined in accordance with the demands of our new pure-food laws.

In accordance with the ideas of its first author, A. I. Root, the new A B C and X Y Z is *eminently practical.*

German edition (new), paper covers, $2.00; cloth-bound, $2.50. Postpaid anywhere. This is the famous A B C in the language of the Fatherland, to suit our many German friends.

French edition (new), cloth-bound, $2.00, postpaid. This is another edition, translated into the beautiful language of France.

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M'CLURE'S MAGAZINE.

In making up your list of periodicals for the coming year we wish to say a word in season for the above magazine. We believe it to be, in a very true sense, the friend and benefactor of the plain people of this nation. Its exposure of monstrous frauds, both financial and political, is deserving of the highest praise. It could probably have made immense sums of money by concealing the truth, but it chose the straight course of honest duty. Such a journal deserves success.

THE GERMAN NURSERIES.

If you want trees and plants that are extra hardy we think the stock grown at the German Nurseries, Beatrice, Nebraska, will suit the most exacting. It is right in the blizzard region where, unless plants are very vigorous and hardy, they can not survive. The proprietor of these nurseries is Mr. Carl Sonderegger, a very experienced German nurseryman who started in business in 1886, since which time he has built up a large trade in nursery and plant stock. He knows just what will grow in our cold northwestern States, where the peculiar winter conditions render the selection of trees a subject for expert knowledge, such as only a few possess. Many thrifty persons have lost money by ordering trees from irresponsible agents and others who sold them stock by no means adapted to the rigorous conditions of the West. We believe any buyer of trees would be safe in ordering from Mr. Sonderegger.

BIG-EARED CORN.

If you are interested in corn, the advertisement of Ratekin's Seed House, of Shenandoah, Iowa, will appeal to you. This house is in the center of a great corn region where the farmers take the greatest interest in the improvement and amelioration of the corn-plant. It is not far away, either, from the home of Professor Holden, the great corn expert who has so enthused the farmers of Iowa that each one is laboring to increase the value of the corn crop of the State. Any of our readers who are interested in corn culture ought to get in touch with Ratekins if they are anxious to improve the crop in their own immediate locality. In addition to securing fine seed we believe they will also get excellent advice on corn culture (if they desire it). Their catalog, which may be had free for the asking is quite a treatise on corn and other useful farm seeds on which great industries rest. It is not a pretty book for the children, but a valuable monitor on farm seeds and farm crops for money-makers.

WEAVING RUGS AT HOME.

Recently there has been a revival of home handicrafts in various parts of the country. This is due to various causes, one of which is a great desire on the part of many to have something original, and at the same time durable and substantial. It is a remarkable fact that the fine rugs and carpets on the floors of rich men's mansions are home-made articles. These are not made in factories, as is supposed by many; on the contrary, they are the product of humble homes in Turkey, Syria, Persia, and India, where factories are unknown.

This being so, we feel certain many of our readers will be much interested in the advertisement of the Deen Loom Co., Harlan, Iowa, on the back cover page of this journal. We think their announcement will have a special interest to GLEANINGS readers, because many of them are handy men and women who would soon learn how to use a weaver's loom if they had one.

It is well known that the finest and most expensive fabrics are woven on what seems ridiculously simple apparatus. We believe that success in this line lies largely in the taste and skill of the individual worker rather than on intricate and expensive machinery. The Deen Loom Co. are so thoroughly convinced of the intrinsic value of the loom they manufacture that they are now accepting orders on the installment plan of payment. If the field where you live is not occupied already by some weaver, there is a chance for you to do some business with your neighbors in making rugs for them. The company takes especial pains to give its customers all necessary advice in learning to operate a loom, and is happy to hear their customer has been successful. They send a nice catalog on request.

# A SUBSCRIBER'S ORDER for FENCING.

It is quite amusing to us when talking to a prospective advertiser to hear him say that GLEANINGS will probably do well enough for bee-supply advertisers, but he doubts whether it would do for his particular product. Time was when we had to use a good many arguments to show that GLEANINGS readers were good purchasers in hundreds of other lines, but now we seldom hear the above comment. Occasionally some one wholly unacquainted with GLEANINGS requires some convincing evidence. To such we submit the case of Mr. Shackelford, and a valued advertiser, Messrs. Kitselman Bros., Muncie, Ind.

The above is the advertisement which cost the advertiser during the entire season $35.90. In the next column is the report of our subscriber whose single order was nearly ten times the amount that this advertisement cost in GLEANINGS for the entire season. Bear in mind that this is only a single order, and, according to our understanding, Messrs. Kitselman Bros. had a good many more which they trace to GLEANINGS IN BEE CULTURE.

**Mr. Shackelford's $330. Order.**

Okolona, Ark., February 18, 1907.

THE A. I. ROOT CO.,
Medina, O.

*Gentlemen:*—Some days ago I gave Kitselman Bros. an order for wire fencing to the amount of $330.84, but the fencing I have not yet received. I received a notice from them that it would have prompt attention, but this is the last I have heard from them. I mentioned that I did not hesitate to give them the order for I saw their ad. in GLEANINGS, and, of course, I think it will come up O. K. I wrote them a few days ago but have not had time to hear from them yet. I will wait ten or fifteen days, and if I do not hear from them I will write you again.

Yours truly,
GEO. SHACKELFORD.

We wrote Messrs. Kitselman Bros. in behalf of our subscriber, and they promptly advised us that, owing to the great amount of orders received about that time, there had been a little delay, but assured us that Mr. Shackelford's order would go out at once.

Note Mr. Shackelford's confidence in the advertising columns of GLEANINGS. This is representative of the feeling of our subscribers generally.

**RESULTS.** If you have goods to sell, isn't it worth while to try a paper which pays others so well? Here is a single order bringing the advertiser ten times the amount of his entire account with the paper for a year. Remember, too, the case of Mr. Snyder who received orders for a thousand queens at an expenditure of $11; also the case of Mr. Taylor, whose season's advertising cost about $50, and he received more than $1000 worth of business which he traced to GLEANINGS.

**OTHER ADVERTISERS BESIDES KITSELMAN BROS.** We have for several years carried representative advertisers such as American Steel & Wire Co.; Page Woven Wire Fence Co.; Coiled Spring Fence Co.; Brown Fence and Wire Co.; Mason Fence Co., and others.

A paper that gets results in a line like the above can not help being valuable for those advertisers who have merchandise used by agricultural, rural, and suburban classes generally. Write us if you have any doubt as to the advisability of using our columns, and learn what our experience, if any, has been with advertising similar to your own. We are not at all anxious to get an account which does not appear adapted to our paper, for we want to hold those we have from year to year and do not want to disappoint any one, and we never urge an advertiser to use our paper without feeling reasonably sure that it will pay him.

For particulars along the above lines, or regarding our rates, address

**ADVERTISING DEPT. GLEANINGS IN BEE CULTURE, MEDINA, O.**

# Security

For 15 years this bank has been transacting a conservative banking business, meeting all its obligations on demand.

Four per cent on savings.

Our booklet describes our methods and management, and explains the advantage of our simple banking-by-mail system.

**WRITE FOR THE BOOKLET TO-DAY**

**Established 1892** **A State Bank**

**Assets over $700,000**

**THE SAVINGS DEPOSIT BANK COMPANY**

MEDINA, OHIO

Santa Fe

# Southwest Homeseekers' Excursions

First and third Tuesdays of each month.

Tickets sold to all parts of the Great Southwest at rates of about one fare plus $2.00.

Ask for our new book, "Santa Fe Southwest."

Address
C. L. Seagraves,
Gen'l Colonization Agt.,
1115 Railway Exchange,
Chicago.

An Invaluable and Necessary Work

# LIPPINCOTT'S NEW GAZETTEER

## A Geographical Dictionary of the World

Containing references to over 100,000 places—their population, location, and industries, compiled from the latest census returns from all countries, and other official data.

Edited by ANGELO HEILPRIN, and LOUIS HEILPRIN

Over 2000 pages. Quarto
SHEEP . . . . . $10.00 net
HALF RUSSIA . . . $12.50 net
Patent Index, 50 cents extra

**J. B. LIPPINCOTT CO., Philadelphia**

# Paint Without Oil

## Remarkable Discovery that Cuts Down the Cost of Paint Seventy-five Per Cent.

**A Free Trial Package is Mailed to Every One Who Writes.**

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder, and all that is required is cold water to make a paint weather-proof, fire-proof, and as durable as oil paint. It adheres to any surface, wood, stone, or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 202 North St., Adams, N. Y., and he will send you a free trial package, also color-card and full information showing you how you can save a good many dollars. Write to-day

# PATENTS.

Twenty-five Years' Practice.

## CHARLES J. WILLIAMSON,

Second Nat'l Bank Bldg., Washington, D. C.

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I Root Co

# FREE!

Poultry-raising with bee-keeping makes a profitable combination as many already know. *Our 116-page book, "How to Make Poultry Pay,"* the most beautiful work published, is now given FREE with each yearly subscription to our paper. Ask for sample copy of Xmas number, the best in the world.

Address INLAND POULTRY JOURNAL COMPANY,
15 Cord Bldg., Indianapolis, Ind.

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLDG. CLEVELAND, OHIO.**

# Sections, Hives, and Foundation

always in stock for immediate shipment.

Orders sent in during the month of January, 3½ per cent discount may be deducted. This 3½ per cent is an inducement to order early, but the big profit comes next season by having supplies on hand for use when needed. :: :: :: :: :: ::

**THE A. I. ROOT COMPANY**

**SYRACUSE, NEW YORK**

# This is the Book that will Increase Your Fruit Profits

**A DOLLAR BOOK FOR 1 CENT**

## High Grade Fruit Trees, Vines and Plants

Special low prices on **Plum, Apple, Peach** and **Dwarf Pear Trees, Roses,** also **Asparagus Roots, Currant Bushes** and other small fruits. Order trees direct from our nursery and save agent's profits and **half your money.**

Everything you want for Orchard, Garden, Lawn or Park. Send to-day for Green's Dollar Book on Fruit Growing, also for our Fruit Catalog, and a copy of Green's Fruit Magazine, **all a gift to you.**

**GREEN'S SAMPLE OFFER** One Alberta Peach Tree, one Red Cross Currant Bush, one C. A. Green New White Grape Vine, one Live-Forever Rose Bush, all delivered at your house by mail for 25 cents.

Plum Trees $6.00 per hundred.

**GREEN'S NURSERY CO.**

**Rochester, New York**

**Box**

# What's the Matter With Hilton?

WHY, HE HAS A LOT OF SUPPLIES HE WANTS TO LET YOU HAVE WITHIN THE NEXT SIXTY DAYS AT A DISCOUNT, TO MAKE ROOM FOR THE NEXT SEASON'S GOODS. JUST SEND A LIST OF WHAT YOU WANT AND GET ESTIMATE. IF YOU HAVEN'T HIS FORTY-PAGE ILLUSTRATED CATALOG, SEND FOR IT AT ONCE.

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**GEORGE E. HILTON**
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Yours truly, LAURENCE C. CLARKE.
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*Mr. Walter S. Pouder,* Atwater, Ill., Dec. 2, 1907.
Indianapolis, Ind.
*Dear Sir:*—I received my bee-supplies to-day, every thing in fine shape, and I never saw as fine a lot of supplies. I had naturally supposed that, in getting so large an order, some of the goods would be rough; but I find every article to be perfection. I am now ready for the honey harvest. The bees were ahead of me this last season, and I am satisfied that I lost 300 pounds of honey by not being prepared. That new A B C of Bee Culture is something grand.
Wishing you continued success, M. A. JONES.

Please observe, too, that I am still making a specialty of prompt deliveries and perfect shipments.

New edition of the A B C of Bee Culture now ready. By mail, $1.50; by express or freight with other goods, $1.25. Catalog of Bee-supplies free for the asking, and it gives prices for 1908 goods.

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# Walter S. Pouder,
**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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## STRAY STRAWS

by Dr. C. C. MILLER

SEVERAL CASES are reported at Neukirch observation-station, Switzerland, in which "the after-swarm with the young queen issued before the prime swarm with the old queen."

ALLAN LATHAM, p. 1564, advocates ample space under frames with small entrance for wintering. Right you are, my friend, and I think the general tendency is now in that direction. I don't want less than two inches under bottom-bars all the year around.

HEARTSEASE HONEY, according to most of the bee-keepers at the Chicago convention, is rather dark, but several said that with them it was light. My assistant says, "That very white honey we had was heartsease; I don't *think* any thing about it; I *know* it was."

WINTER CONSUMPTION (outdoors, as I understand it) for the five months, November to March, reported from all the Swiss stations, averaged, for ten years, 12 5 pounds. For the four months, December to March, 11 pounds. Varied from 5 to 28 pounds, for five months.

BY THE COURTESY of Editor U. Kramer, the beloved leader of Swiss bee-keepers, I am in receipt of reports of Swiss apicultural observation-stations. These were started to the number of four more than 20 years ago, and now number more than 30. Oh for a Herr Kramer in this country to bring us abreast with little Switzerland!

I TRIED a few cases of feeding in cellar. I put a section of honey in the 2-inch space under bottom-bars, letting it touch the cluster of bees. In about 24 hours the section was cleaned out dry, although the colony had heavy winter stores; but it excites the bees, and that is probably not good for them. [That is just the trouble. Such feeding excites the bees.—ED.]

THE PLURAL-QUEEN SYSTEM is pronounced a success, page 1555, with perforated zinc. What advantage has it over the Wells system? That allowed two queens separated by perforated wood, and was boomed in England a few years ago, but now nothing is said about it. I can see big advantages in several unseparated queens in one hive, but with excluder I don't believe there's any thing in it. [Why? In the Wells system there was no intermingling of the bees, and each lot of bees with their queen had a separate entrance. In fact, the Wells idea was little more than a tenement hive, having two colonies, each sharing the warmth of the other. In the perforated-zinc plan the queens only are separated; but the bees mingle all together. In this respect the colony principle is more perfectly developed. As one strong colony is better than several small ones, so the perforated zinc plan ought to be better than the Wells system.—ED.]

I DON'T BELIEVE in feeding in winter, but another Straw will show that I have tried it on a small scale by way of experiment, and after reading "What to Feed Bees in Cold Weather," p. 1556, I am moved to urge you very strongly, Mr. Editor, to try putting the feed *under* instead of on top. Of course, with a weak colony clustered high up it is not practicable; but where the bees can be induced to come down, as a fair colony will on any mild day in winter, and on any day in the cellar, feeding below has real advantages. It doesn't disturb the bees by uncovering them. A brood-comb can be put under, or Good candy in any dish, wooden or earthen; and if the candy is too soft it can make no trouble below as it can on top. "There isn't room below?" With a 2-inch bottom-board there's plenty of room, and you ought to have nothing less than 2 inches under bottom-bars for other purposes. But in any case, can't you make room below as well as above. [Your idea of putting the food under is good, in so far as it would eliminate the possibility of the food daubing the bees.

For outdoor feeding the position would be bad, but all right for the cellar.—ED.]

WM. M. WHITNEY, p. 1594, says the case of the bee-keeper is not parallel with that of the stock-raiser. That's just it, Bro. Whitney, and I'd like to see the bee-keeper have the same show as the stock-raiser. As it is now, it's all a gamble whether he may occupy a certain territory undisturbed, or be crowded out by others. I'd be willing to pay good money to be as sure of my ground as the stock-raiser is of his.

So you think, Bro. Whitney, you might grant me control if I'd hopple or clip my bees. How about fish? They're neither hoppled nor clipped, no one even pretends to own them as bees are owned, and yet legislation clearly defines territory upon which one may not encroach in catching them. Very likely you are with the large majority, but "the world do move." Many years ago I rashly advocated legal control of bee territory, and called down wrath upon my head. So far as I know I was entirely alone; at least if any one agreed with me he never said so. Now I'm not alone. Not only do many good men agree with me, but in some places sole control of bee-territory is an accomplished fact, made so by legal enactment. If it doesn't come here it's only because we are not so progressive as the people on the opposite side of the globe.

READING what is said on p. 1557, the beginner is likely to think that he should use split sections. Does GLEANINGS really advise this? [Every man has his own ideas regarding fixtures, but from the standpoint of dollars and cents, we can not see that it would pay any bee-keeper to throw away good supers, section-holders, and other appliances to adopt the split-section plan. We are not even sure that it would pay a beginner to start out with the split sections.

After the split sections are purchased, and every thing is in readiness, foundation may be put into four at once, very rapidly. But this saving of time does not mean much of a saving of money, for such work is usually done when time is not very valuable. A better grade of comb-honey is produced if foundation is held on all four sides, but we do not believe that the split-section plan has any merit as far as the appearance is concerned over the melted-wax plan for instance, for fastening full sheets on all four sides of any style of section The latter plan has the further advantage that no special section is needed.

Split sections cost 50 cents a thousand extra. Or, if the bee-keeper has his own foot-power saw, he may reduce this extra cost a trifle by doing his own spliting, but not enough to be worth mentioning. Now a helper's time in the winter would not ordinarily be worth 10 cents an hour. But figuring the labor at 10 cents an hour, nevertheless, we have found that the cost of putting full sheets, fastened on all four sides, in the unsplit section, is not far from 50 cents per thousand, for it takes about five hours. It will be seen that this cost is practically the same as the extra first cost of the split sections. This means that the labor in putting foundation into split sections is an expense that may be eliminated by adopting the plan of putting full sheets in ordinary sections by means of hot wax from the wax-tube. The wax used would not cost any more than the extra wax in the larger amount of foundation needed for the split-section plan.

Finally, we have learned that there are many who object to the appearance of the split sections. Just how serious this objection would be, we can not say.—H. H. R.]

### A BIG FIELD FOR BOTTLING HONEY.

A RECENT canvass made in one of our large cities showed that little or nothing was being done with the bottling trade for extracted honey. While comb honey was fairly well represented in the retail groceries they had no liquid honey to speak of. We are in a position to know that the same condition exists in many of our other large cities. It only goes to show that much more of extracted might be disposed of, and what a field there is for individual bee-keepers to bottle their own honey, especially if they are near a large city or town! This would have the effect of increasing enormously the consumption of extracted, and at the same time have a tendency to advance prices.

It is not because *good* bottled honey would not sell, but because none is offered. Before the new National pure-food law went into effect the market was injured and practically killed by adulterated goods masquerading under the name of "Pure Honey," or "Farm Honey."

Mr. Selser, of Philadelphia, Mr. Weber, of Cincinnati, Mr. Pouder, of Indianapolis, and some others, have demonstrated that pure goods will sell, and bring fairly remunerative prices. What these men have done for their respective cities others can do. There was never a better time to develop the bottling trade than now.

Always put up a fine table honey, well ripened, and then be careful not to spoil a good trade, once worked up, by putting out inferior honey. We know of one case where a bottler having a fine trade practically ruined it by putting out an off grade of pure honey. It was off in body and color, and now he can not sell honey that is first-class.

### CLIPPING QUEENS VS. QUEEN-TRAPS.

IT takes considerable courage to run directly counter to orthodoxy. For example,

especially in bee culture, it is generally considered the correct practice to clip queens' wings in either a comb or extracted honey-producing apiary. The argument in its favor has been mainly that it saves climbing tall trees, chasing after swarms that may run away with their queens, and last, but not least, a large amount of labor in the hiving of the swarm, because it hives itself.

Mr. R. L. Taylor, who dissents somewhat from this, recently made the statement that "clipped queens are an unmitigated nuisance in swarming time." In the *Bee-keepers' Review* for December he defends the statement on the ground that queens are liable to be superseded at any time for any cause without the knowledge of the apiarist. Where a supersedure has taken place in a hive with such queen, a swarm will issue with the new queen, and the apiarist, supposing that it will return, finds out too late that his swarm has left for parts unknown. Then he adds:

Swarms issuing with a clipped queen conduct themselves in quite a different manner from that of those having a perfect one—the latter clustering quickly and completely, as a rule, and if another swarm is out and clustered, are not liable to discover and cluster with it; consequently, they may be secured and promptly hived, while the former, in their search for their queen, hunt the premises over, and if there be a swarm out are sure to find and unite with it, and by their dilatoriness give abundance of time for other swarms to issue and unite with them. Often they will not cluster at all; and if there has already been any swarming that day, they generally make persistent efforts to adopt the hive of the former swarm; and if there have been several previous swarms the same day, only the most skillful and rapid management can prevent a general mix-up. The bees are not only persistent in their attempts to enter strange hives, but, in spite of all, are more or less sucessful; so that often when one, by the use of sheets and smoke, imagines he has done a good job in his efforts to defeat their attempts, he finds later that one-half or two-thirds of the swarm has circumvented him.

Concluding, he believes that the queen-trap has advantages over the clipping method because it will catch any or all queens in the hive, virgin or laying, whether supersedure took place or not. While it will not prevent the mixing of the swarms, he says it will greatly mitigate it. The trap also has the advantage that the apiarist can see from which hive a swarm may have issued by looking into the trap.

Mr. Taylor might have added that the trap saves some long hunts for queens and the delicate process of clipping. A trap can be clapped on a hive in a few seconds, while it sometimes takes many minutes, if the colony be strong, to find the queen.

The only objection to the trap is the expense and the fact that it may hinder to some extent the passage of bees laden with honey going into the hive; but this latter difficulty has been overcome almost entirely in the modern trap.

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### THE DANGER OF GLUCOSE SUGARS.

THE *Louisiana Planter*, of November 30, very properly calls attention to the dangers of starch sugar, or what is known to the American trade as "grape sugar," but which might with greater propriety be called glucose sugar. For evidence, our contemporary calls attention to an article in the *Journal of the American Medical Association* which gives a very able summary of all the data available on the question of the suitability of this sugar for human beings The article goes to show that starch sugar is undeniably dangerous, and that it is practically impossible to have it free from injurious sulphites when manufactured on a large scale. On a small scale it would not pay, for a substance must be cheap when it is to be used for the purposes of adulteration. The author of the article in question, a Mr. Lippman, does not hesitate to condemn this so-called grape sugar in no uncertain words.—W. K. M.

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### SOME NEW BEE TERRITORY IN PROSPECT IN WYOMING.

WE have received from the State Board of Immigration, Cheyenne, Wyoming, a very hondsomely gotten-up book on the resources of Wyoming. It comprises over 140 pages of reading-matter, tastefully embellished with a number of excellent illustrations in "half-tone." As the book is compiled by the regular government officials of the State, there is no doubt the statements are reliable and accurate. Particulars of all government and semi-government projects are given, with the address of those in control. Naturally Wyoming is one of the most favored and most picturesque regions on the earth, with resources that are practically boundless, and a climate which is almost perfect from the white man's standpoint. As a honey State it will probably rival Colorado, Texas, Utah, or California, at no distant date. Any of our readers who are actually seeking a new location in the West, where they can grow up with the country, can send to the above address and get this book.—W. K. M.

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### GLUCOSE, AGAIN; IS IT POISONOUS TO THE HUMAN STOMACH?

IT might be supposed, from the tenor of its articles, that GLEANINGS is rather against the glucose industry, and that no one else is so prejudiced as we are. As a matter of fact, this antipathy is quite common—so much so that the company making this stuff changed its name from the American Glucose Co. to the American Corn Products Co. in deference to widespread popular opinion. The *Louisiana Planter*, the leading journal of the cane-sugar industry, in a recent issue sets forth the situation in this wise:

It is now announced in Chicago that the Corn Products Manufacturing Company contemplate the immediate erection in that city of another great glucose manufacturing and refining plant, the estimated cost of which will be five millions of dollars. The land for this great establishment has already been secured on the line of the Chicago drainage canal, and it is said the expected capacity of the works will be a loaded car movement of 125 cars per day in and out, which will mean the employment of 750 people.

Incidentally it is stated that from 5 to 6 million gallons of water will be needed for the daily use of the establishment, and borings have been made satisfying the management that they can secure an adequate water supply of excellent quality at a depth of some 1600 feet, which will be done with artesian wells. A storage and transfer elevator of a million and a quarter bushels capacity will be erected, and the interior is to be of tile laid in concrete.

A rather novel point is brought out in this connection; and that is, that the woodwork is to be done away with in this new factory, for the reason that the life of a glucose-factory is admitted by its builders not to exceed ten years, because of the deterioration of wood as affected by the processes in use. If the manufacture of glucose from corn starch and sulphuric acid destroys destroys the buildings in which the materials are manipulated, what can we expect that this same combination will do to the human anatomy that is now called upon to take in this country some 1500 tons of it per day—an amount far in excess of the Louisiana cane-sugar crop, and about equal in weight to the present beet-sugar crop?

Again, the following on the same subject appears in *Louisiana Planter* for Dec. 14:

The appeal of the producers of glucose to be permitted to call it "corn syrup" is causing considerable interest in food circles. The extraordinary way in which modern glucose is made by boiling starch in an attenuated solution of sulphuric acid, is a chemcial process that seems to have a bad name because of its objectionable origin in the process of its conversion from corn starch to the liquid or solid glucose. The Corn Products Co. have changed their own title from the American Glucose Co., of years back, and are now desirous of labeling their goods "corn syrup," which is essentially a misnomer, as the production of this kind of corn syrup is not possible by the ordinary presence of evaporation, which produces sugar-cane syrup, sugar-beet syrup, sorghum syrup, and maple syrup.

The use of injurious (and, in fact, of dangerous) chemicals in the manufacture of food stuffs was practiced more than half a century ago. It is well known that the sugar of lead is probably the best clarifying agent for refining sugar. Dr. Evans refers to it in his "Sugar Planters' Manual," published about 1845, and says that it became necessary to prohibit by law the use of lead in sugar-refining, owing to the dangers to human health and life incident to that process. In the earlier history of the glucose industry it was a notable fact that one of the chief difficulties connected with it was that of entirely eliminating the free sulphuric acid in the concentrated syrups. In order to do this it was necessary to use considerable lime; and this, combining with the free sulphuric acid, produced gypsum, or land plaster, which floated like clouds throughout the liquid mass, and was very difficult of removal, even by filter-press filtration. Liquid glucose manufactured from corn starch by the sulphuric-acid process is now turned out apparently as clear as crystal; but the central fact remains; that is, its manufacture with that very dangerous agent, sulphuric acid, and that free sulphuric acid has very frequently been present in samples of glucose offered for sale. The word "corn," if utilized in labeling glucose, will be so utilized in order to conceal some of the features of its objectionable origin. The label should properly read, "corn and sulphuric acid for table use."

W. K. M.

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## BEE-TALKS BEFORE SCHOOL-CHILDREN.

SOME time ago Mr. E. W. Pease, of Chicago, wrote us concerning a talk on bees which he had given before one of the primary schools of that city. To give some idea of the interest shown, he obtained and sent to us the essays written on the subject by the children the day following. All of these showed that the most careful attention had been given, and that, in most cases, every part had been clearly understood. This is all the more remarkable since the children were in only the third grade, and were, therefore, not over nine or ten years old.

From about twenty-five papers we have selected four to place before our readers—not because they are the best, particularly, but because they more nearly represent the average.

### BEES.

The queen bee is a little larger than the others. A man by the name of Mr. Pease has an apiary. The father bee is called the drone. There are three different kinds of bees in each hive. They are the queen, drone, and worker. If a bee ever gets into the wrong hive the other bees will kill him. There are about forty or sixty thousand bees in each hive. The queen lays her eggs in the cells. The bees put the honey in the cells. The honey-comb is made of pure wax. The bees go to some flowers and get nectar and put it in their honey bag. The bees take hold of the corner of the cell and pull the wax out. When you want to have an apiary you number the hives. There is only one queen in each hive. If there is two one will kill the other. A bee has two pair of wings. The queen bee looks nearly the same as the rest except that she is larger. If the honey-comb is not pure wax the bees will not touch it. A bee will not sting if you will not hurt it. When the bees swarm the queen is always with them. When they swarm you take a dishpan and hit the twig and they will fall into the pan and then you put them in the hive. When a bee stings you it will die.

ARTHUR FRIBERG.

### MR. PEASE AND HIS BEES.

Thursday Mr. Pease said he would tell us a story about his bees. Frst he talked to us a long time about bees, and then showed us some bees he had in a case It was very interesting. There was a swarm of bees, and with them there was a queen. Mr. Pease said that the bees would not hurt us unless we hurt them. Mr. Pease said the bees and the queen-bees are very nice when they are not angry. There are thousands of bees in one hive.

Did you ever know that bees are mailed to other countries?

They are put in a box, and sent away. One bee must lay at least two or three thousand eggs a day. He said he was going to give us some cheese and honey.

ADENA HALBERG.

### MR. PEASE AND HIS BEE-FARM.

Mr. Pease owns a bee-farm. He is a very nice man. He told us that there were forty to sixty thousand in a hive. Mr. Pease's office is on the corner of Winnemac Ave. and N. Robey Street. He has a nice office. A bee never stings when he comes back from the honey-field. He is full of honey, and is too stiff to sting then.

You have to put a vail over your face or else you will be stung. There is only one queen bee in each hive. I like bees because they give honey. But I would not like it if I should get stung by one. The queen should make two to three thousand eggs a day, or else they would not think much of them.

EVERETT LINDSTROM.

### BEES.

Across the street from our school is an apiary. A man named Mr. Pease owns the farm. Yesterday he was in our room and told us about bees. He said "Bees will not sting when going to the honey-field or coming back, because when going to the field they are too anxious to get the honey, and when coming back they can not curve the abdomen. Bees will sting under only two circumstances: that is, when they are hurt and when excited. The queen is supposed to lay two or three thousand eggs a day. Bees almost always swarm.

ALLEN TRIMBLE.

A study of the papers as a whole reveals the fact that certain parts were remembered rather better than others, showing that children appreciate the wonderful revelations in nature. For instance, nearly every pupil remembered that a good queen should lay from two to three thousand eggs in a day; that the queen is larger than the workers; that there are three differents kinds of bees in a colony, etc. Children have wonderful memories; and if they are told such things in an interesting way they almost never forget them. The bees in the observatory hive doubtless helped to impress the lesson on their minds.

It is an oft-repeated statement, but one which is, nevertheless, true, that it pays a bee-keeper to educate the public. Giving a simple and interesting lecture before school-children is one way of doing this, and there are many others.

## INJURIOUS EFFECTS OF SULPHITES IN SYRUP AND MOLASSES.

FROM time to time GLEANINGS has furnished its readers with considerable data concerning the injurious effects of sulphites and sulphurous acid when combined with human foods and used as such. Some may have thought we were stretching the truth so as to get a case against syrup, molasses, and glucose. Our ideas on the subject were obtained from reading the reports of physiological experiments made in Germany, and from talks with men well versed in the technics of sugar manufacture. Now comes a bulletin just issued by the United States Department of Agriculture which more than confirms all we have said. Sulphites and sulphurous acid have been found guilty on all counts. Every bee-keeper who sells honey locally ought to send for this bulletin, which we think is free to all. It was issued Nov. 22. As the report is founded on practical experiments made in Washington we will give the summary of results verbatim so that there need be no misunderstanding anywhere.—W. K. M.

These data clearly show that the administration of sulphites and of sulphurous acid in a free state in the quantities employed produces harmful effects. A tendency is manifested in practically every case to produce headache and digestive disturbances. In some cases these symptoms are not clearly marked, while in others they are extremely well defined. In many cases uneasy sensations and even pain were developed in the stomach and intestines, and there were complaints of "heartburn." The occurrence of this class of symptoms during the administration of the preservative and their gradual disappearance during the after-period seem to be conclusive evidence that they could have been due only to the effect of the preservative itself. There were also in some cases attacks of dizziness, and palpitation of the heart. In a few cases nausea was developed to the extent of vomiting.

It was recognized, as in previous experiments, that the mental attitude of the subject might play some part in producing these symptoms, or at least might affect the description of them by the man himself. That this, however, does not exercise a dominant influence was more than established by the remarkable effects of the administration of salicylic acid, where, with the same opportunities for mental effects of a depressing character, there was manifested, on the contrary, a persistent demand for more food, the salicylic acid apparently serving as a stimulant. There is no doubt, therefore, of the fact that the symptoms which are described in the medical history are those actually experienced by the young men, any tendency to exaggeration in the reporting of these symptoms having been carefully considered at the time.

In the case of the men who received sodium sulphite the conclusion is inevitable that the administration of this preservative in the great majority of cases causes headache, sensations of dizziness and occasional nausea, indigestion, pains in the stomach, and other unfavorable symptoms. With the men who received sulphurous acid in an uncombined state, headache was very common, there was a slight tendency to dizziness, accompanied in some cases by nausea, and a feeling of exhaustion and weakness.

In general, it may be said that the most prominent symptom was that of headache, which could hardly have been caused by the imagination. This symptom was very commonly and very persistently experienced at some time during the preservative period.

### BODY WEIGHT.

The administration of the sodium sulphite was accompanied by a slight average loss of weight during the preservative period, but the full effect of the preservative in diminishing the weight of the body was shown only toward the end of the preservative period, and there was a continued loss in weight during the after-period.

It appears, therefore, that the administration of sulphurous acid in the form of sulphite tends to reduce the weight of the body slowly, and that this tendency is continued for a considerable time after the withdrawal of the preservative. There was a very slight increase in the average weight of the body under the administration of the sulphurous acid in the uncombined form, which increase continued in the after-period. The final average effect upon weight for the eleven men shows no change in the preservative period and a slight decrease in the after-period.

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## THE NATIONAL CONVENTION AT HARRISBURG; A MARK OF APPRECIATION SHOWN TO GENERAL-MANAGER N. E. FRANCE.

OWING to one thing and another we have been unable to continue our report as given on page 1430, Nov. 15th issue. We now take it up where we left off.

We listened to a very interesting address by the Rev. N. E. Cleaver, on the subject "Is it practicable and profitable for the average bee-keeper to rear queens for market?" As we published an article from him on that subject on page 1445, in which he gives some of the main points of his paper, we will not go into a discussion of it here; but the address taking the negative side of the proposition was listened to with marked attention, drawing forth a great deal of interesting discussion.

We next listened to an interesting paper, although somewhat technical, on the insect enemies of the honey-bee, by Assistant State Zoologist Satterthwait, of Harrisburg. The main points were as follows:

The bee-moth (*Galleria melonella*); the wax-moth (*Achrœa grisella*), Fab.; bee-killer (*Promachus Fitchii*); bee-louse (*Braula cœca*); oil beetle (*Meloe angusticollis*); fly (*Phora incrassata*); meal-moth and the bee-beetle (*Trichoides apiarius*). Of less importance are predaceous wolf-flies, dragon-flies, wasps, hornets, ambush and assassin bugs, ants, and sphinx moths. Aristotle, Virgil, Columella, and other ancient writers mention the bee-moth as a formidable enemy of bees. It was first mentioned in this country by the *Boston Patriot* as having made its appearance near that city in the spring of 1806. It was noted at Mercer, Pa., in 1826, and by 1826 had overrun Ohio. At the present time probably every apiarian knows the work of the moth, and that it can not be successfully controlled in the old-fashioned box hives. Its life history is as follows:

The moth, from head to the end of the folded wing, is $\frac{5}{8}$ to $\frac{3}{4}$ of an inch; the expanse is $1\frac{1}{10}$ to $1\frac{4}{10}$ inches. The females average much larger than the males. The palpi of the females form a prominent "beak." The palpi of the male are not so conspicuous. The adults fly normally after dusk, about May for the first brood, and August for the second brood. When the moth is at rest the legs are naturally concealed. The wings closely overlap on the back, when folded, and are drawn down at the sides. The outer margin, thus folded, suggests the outline of the tail of a fowl.

When the moth is disturbed it moves with a jump and a flit, making it hard to catch. The eggs are inserted by the telescoping ovipositor into any available crevice of the hive, the number sometimes exceeding 200.

The adult moths are very agile, their speed of flight exceeding the flight of bees.

The bee-killer, or wolf-fly (*Promachus bastardi*) was first reported from Nebraska in July, 1864, as a pronounced enemy of the honey-bee. Dr. Fitch describes these flies as inhuman murderers—the savages of the insect world. They take their prey to some extent, perhaps generally, on the wing, and even seize dragon-flies, bumble-bees, and tiger-beetles. The pain of a common horse-fly's bite is generally understood to be maddening in its sharpness; but the wolf-fly proboscis lacks all softness, and when inserted into the victim it is held there by stiff bristles, and the fly sucks out, not a little blood, but the whole mass of the internal organs! Dr. Riley watched a number of these bee-killers for a while, and observed that, although many other insects were present, it gave exclusive attention during this observation to the selection of honey-bees. The sting of the bee seems not to affect them except to make them tighten their grasp on their doomed victims. The bee-killer is in the adult stage during June and July.

The bee-louse is found living parasitically on the honey-bees in Europe. It is from ¼ to ⅜ of a line long. It is a body parasite, one or two occurring on the body of the bee, though sometimes they greatly multiply, and are very troublesome to the bees.

The blister-beetle (*Meloe Americanus*) seems to be the only member of its family in Pennsylvania. Its life history is varied from that of most insects, even from other coleoptera, in having, instead of egg, larval, pupa, and adult stage, larval (the breeding stage), the second larval, the third larval stage, pupa, and adult. This insect hatches from the eggs, which are laid in the ground, and gets a foothold on a bee at the first opportunity. These are body parasites. Lack of time prevented Mr. Sattlewait from dealing with other insect enemies of bees such as wasps, hornets, millipedes, and spiders.

The remedy was, to keep the colony strong, and the bees will usually be their own best protectors, thousands of bees being ready to die in the defense of their home.

MR. FRANCE REMEMBERED.

This was followed by the question-box, which, for lack of space we will not here reproduce. But there was one very pretty incident that occurred, during which Mr. W. Z. Hutchinson sprang a pleasant surprise. The session was about to adjourn when he begged a few moments of time in which he might bring up a matter that he thought would be interesting to all. He then proceeded to tell how he had sent out a circular letter to the members of the National Bee-keepers' Association in which he called attention to the splendid services performed by General Manager N. E. France to the National, and how he had worked long and faithfully, as every one knew, for a very small salary. He suggested that those who felt that the General Manager's services were worthy of a lasting recognition, and who would be willing to contribute a small amount toward the purchase of a gold watch and chain, to be presented at the Harrisburg convention, should send in their contributions. There were many responses to this, the majority of remittances being in ten-cent pieces; but there were quite a number of others, ranging all the way from two to five dollars each, the aggregate of which was $75.00 But the most pleasing feature, said Mr. Hutchinson, in these responses was that many said they had thought of doing the same thing before, and were now glad of sending this mark of their appreciation. One man in particular had thought for some time that Mr. France should be kept under a close "watch," and added that he should not wonder if he needed to be "chained" too, and inclosed his 25 cents. To make a long story short, Mr. Hutchinson, with the money, purchased a beautiful gold watch with a full-jeweled movement, bearing the following inscription: "A token of appreciation from members of the N. B. K. A. to their manager, N. E. France;" and as he presented this to Mr. France he said:

Bro. France, take this beautiful token of our appreciation; wear it next your heart; and may that heart long beat as faithfully and steadily as the little balance-wheel inside; may your face ever be as bright and shining as this beautiful case; and may your days be as full of "good works."

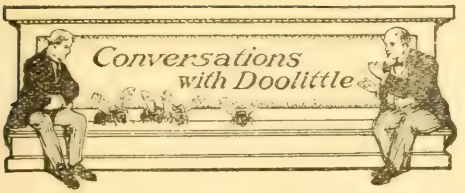
But there was money enough left to make another present, and a happy thought struck Mr. Hutchinson that the wife who had made it possible for Mr. France to leave home and attend to the exacting duties of the National ought to be remembered; and after tendering the watch Mr. Hutchinson turned again to the General Manager and said:

Bro. France, we have tried to fill your cup of happiness to the brim; now we wish to make it *overflow*. Away in that far western home of yours is a loved one who, with bright brain and nimble fingers, looks well to the ways of her household. And we have been led to believe that, were it not for these nimble fingers and the wise guidance of affairs in your absence, it would be impossible for you to fulfill properly the duties of the office that you now hold. In view of this we esteem it a rare pleasure to remember also that faithful helpmate of yours—your wife. We have, for her, a dozen solid-silver tea-spoons. On the top of the handle, in old English script, we have had engraved the letter F. On the under side of the handle, in smaller script, are the letters N. B. K. A. Take them to Mrs. France, and present them with the compliments of the National Association. Tell her not to "keep them just for company." Have her use them every day, just as you do your watch, and when your hand supports one of these so easily, so lightly, remember that, in a like manner, back of you stands the whole National Association, and that it can and *will* support *you* just as firmly as your hand can support one of these little spoons.

At the conclusion of this Mr. France was deeply touched, and for the time being was unable to respond. The day's session adjourned, after which he was made the recipient of many hearty handshakes and congratulatons.

GLEANINGS believes that the wonderful growth and success of the National bas been due very largely to Mr. France's personality; but, more than all else, to the immense amount of hard work which he has bestowed on the organization—a service, which Mr. Hutchinson very properly estimates, could not have been secured by any private corporation for five times the amount he has been paid.

(Continued.)




HONEY FROM BASSWOOD.

"I am sending you a few questions which I wish you to answer as they are numbered, if you will accommodate me thus; and I wish them answered through the columns of GLEANINGS. 1. I am thinking of moving my bees, the coming summer, several miles to where there is an abundance of basswood, hoping to secure a greater yield of honey than I at present receive, as I have no basswood near me. What would be your opinion regarding this matter? 2. Are there any seasons when basswood blossoms in profusion without giving a good yield of nectar from those blossoms? 3. Are not the blossom-buds formed on the basswood-trees a few weeks previous to the time of their opening, so that I can know by this whether there is a prospect of honey from that source in time to make preparations for moving? Thanking you in advance for whatever reply you may see fit to make, I am

"Yours truly,
"T. E. HOWE, New York."

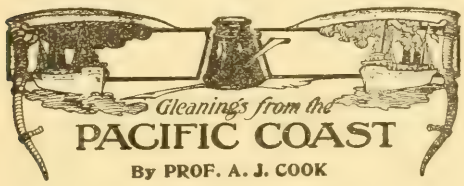
In answering the first question I would say that I believe basswood to be the greatest honey-producer in the world, and the least likely to fail to yield nectar of any plant or tree; therefore I call the idea of our correspondent a good one, and I see nothing against it except the expense. That basswood is an enormous yielder of nectar was proven years ago, when the late Dr. Gallup, then of Orchard, Iowa, obtained a yield of 20 pounds per day on an average from a single colony, during a period of 30 days; or 600 pounds from a single colony in thirty days. This record has never been beaten, if I am correct, by any single colony, from any one source of nectar supply during the same number of days. I once had a colony which gave a yield of 66 lbs. of basswood honey in three days, and 302 in ten days, and probably might have done nearly as well as Gallup's had the flow of nectar continued as long. From the above I believe if Mr. Howe can move his bees to the basswood and return them at an expense of about one dollar per colony, he would do well, even in a rather poor season, as a yield of ten pounds per colony would nearly if not quite pay for the moving. And should the cost come up to $1.50 per colony, 15 to 17 pounds would cover that with the present price of honey.

By going back over my account with my bees for the past 30 years I find that, from basswood alone, my yield of honey has been about 55 pounds on an average from each colony, each year. This is the average yield of the apiary, not the yield of an individual colony. Now, to be on the safe side, suppose we call 50 pounds as the average yield, or what we could expect one year with another, from basswood, and that it will cost 20 pounds of that yield for moving the bees to the basswood, we shall have 30 lbs. per colony left as the profit. This, at 10 cts. per pound, would give us $3 00 per colony; and if Mr. Howe has 100 colonies his profit above the cost would be $300 00, which would be an item worth considering.

To his second question, I will say that, up to five years ago, I never knew of an entire failure of nectar from the basswood. That season we had a freeze which formed ice half an inch thick after the basswood commenced to leave out, and for this reason there was not any basswood bloom at all that year, hence an entire failure; then three years ago a freeze killed all the buds on the low ground, but on the hills there was some bloom, but not enough to give any thing like a full yield. Aside from this the shortest flow I ever knew gave a three-days' yield, in which honey was so plentiful that the bees could not prepare room fast enough to store it, with a gradual tapering off of two days more, making five days in all. The longest gave a yield of 25 days, with three of them so cold that the bees could work only a little in the middle of the day. The state of the atmosphere has much to do with the secretion of nectar in the basswood flowers. The most unfavorable weather is a cold, rainy, cloudy spell, with the air or wind in a northerly direction. If basswood bloom came at a time of year when we were likely to have much such weather, there might be some doubt about moving to the basswood being profitable; but, as a rule, we have very little such weather while basswood is in bloom. We are more apt to have showery weather with the air charged with electricity, at which time the nectar will almost drop from the blossoms, providing no rain comes within two or three miles from the apiary. At such times as this I have seen honey sparkling in the bloom after it had fallen to the ground—so much so as to attract my attention in the morning sunshine. Then this nectar is almost or quite honey, not sweetened water, which makes basswood doubly valuable over most of other honey-secreting plants or trees. At times when basswood was yielding its best I have seen fully a bee-load of honey in a single flower, and from one stem of blossoms I have jarred two to three thick drops of nectar into the palm of my hand, enough so it would run from the hand. But, of course, such an extreme has occurred only three or four times in my forty years of apicultural life.

In answering the third question I will say that the fruit-buds and leaflets to all trees with which I am familiar are formed in June and July of the preceding year, so the results of next season's honey yield, so far as buds and flowers are concerned, are already formed in embryo, on the apparently bare and lifeless branches of the basswood-trees, as we behold them these zero days of winter. They

wait only for the warmth of spring, to bring this dormant life into growth. As soon as these buds unfold some time during the coming May, then we can see and know whether to make preparations for moving the bees or not. By examining closely we can find the bunch of buds at the base of each leaf, curled up, looking like the half of a small sweet-pea seed, or perhaps a little fuzzy caterpillar would describe it better. With each week the bunch of buds grows till at the end of about seven weeks from the time the trees begin to show their green in spring they open their flowers filled with nectar, to invite the bees to a sumptuous feast. Of course, a cool season will retard the time of bloom from a week to ten days, and a very hot season advance it nearly as much, but the above is the rule. June 28th is the earliest I ever knew basswood bloom to open in this locality, and July 16th the latest. Thus the practical eye can tell nearly two months in advance as to the promise of a yield of basswood honey.




SELECTING QUEENS.

I read with great interest the article in Nov. 1st issue GLEANINGS from E. W. Alexander, as I always do words from his pen. Two points interested me particularly, as my own experience is strictly in line with his. One of the greatest inventions ever made in this country, or, for that matter, in the world, was the Babcock milk-tester. This simple instrument makes it possible for the dairyman to know just what each cow brings him. He need not leave any thing to chance, but can tell easily, at once, and with no chance for mistake, the exact status of every one of his cows. This makes it possible to weed out the failures, and also the indifferent animals, and soon he has only the best; and as he breeds from those retained, he reaps a double benefit; he has cows that pay, and he gets a renewal in kind for future use. It is said that this simple invention of Prof. Babcock, of the Wisconsin University, which was *given* to the world, increased the dairy products and profits by one-half in Wisconsin; and if there, then of course it has done equal service in every other State where the dairy interest is prominent.

Mr. Alexander's article suggests that the dairyman is not the only one who practices this weeding-out process. The bee-keeper has no Babcock machine, but he is less in need of one than is the dairyman; for if he has sharp eyes (and these are quite requisite to the successful bee-keeper) he will know his queens from alpha to omega, and will know the one that fills his hives with industry, honey, and his pocketbook with dollars. But, even with this knowledge, how many practice the keeping of only the best, and breeding from only the *very* best? Here the apiarist has advantage over even the dairyman, for the dairyman will, with a great show of reason, hesitate to kill any of his calves from selected mothers, while the bee-keeper has no good reason for breeding from any one but the very best queen of the apiary. The dairyman can get but one offspring from each cow in a year, while the bee-man can get all his queens from his best queen—an unlimited number; and if he exercises the requisite care, he can get them nearly all mated with drones from his next-best queen. Should not all then follow the advice and example of Mr. Alexander, taking every pains to determine the very best queens, those that breed late in fall, those that are phenomenally prolific, those that give us sweet-tempered workers, and, indeed, workers that are models in every respect? Then let us be unsparing, and mercilessly destroy every one that does not come up to the best, and re-queen from young queens that are reared from the very best queen in the bee-yard. If others have better - they will not have if we practice the above—then we will, if wise, secure from them, that we may breed and possess the very best that are to be had.

Peter Collyer once said that it would be a God-send if lightning would strike half the cows in the State of New York if it would select discreetly. Mr. Wm. McEvoy says in the October number of the *Canadian Bee Journal*, that 90 per cent of the queens of Ontario should be destroyed, and young better queens put in their place. We have no reason to think that Ontario is one whit behind any section of the world in the skill and intelligence of her bee-keepers.

The second point made by Mr. Alexander is just as wise and timely as the other. Years ago, as readers of the bee-journals will remember, I tried the effects of stimulative feeding in the spring, and with surprising results. There is no question but judicious feeding, regularly carried on, will do wonders as the colonies are building up in the spring. Mr. Alexander makes another good point which has so much of his customary good sense coupled with it that it must commend itself to every thoughtful experienced bee-keeper. The solid combs of capped honey in the middle of the brood-nest are surely in the way of a prosperous increase. Some one has said that dirt is matter out of place, and, if so, a very short word characterizes the keeping of great frames solid with honey in the brood-chamber in the early season of the year.

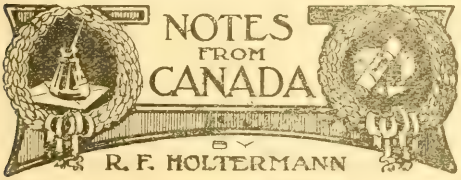
There are three decided gains in the recommendation of Mr Alexander, faithfully carried out: First and least, we often get honey to sell that would otherwise be worse than useless, for a time; second, we remove the great cold barriers in the midst of the brood-nest, that would better be in cellar or storeroom, or, better still, extracted, the hon-

ey sold, and the combs ready for use as needed in the spring; and third, and most important, we would practice that stimulation which would give us very strong colonies and much honey as the season advances. I am sure we all owe Mr. Alexander a most hearty vote of thanks for his meaty article, and you, Mr. Editor, for giving it to us in the pages of your excellent paper.

### ENEMIES OF BEES.

One of the interesting facts of nature is that of mimicry for protection. In one case our bees are victims to this law of mimicry. This comes through one of our little bugs, which, in my "Bee-keeper's Guide," I call the "stinging bug." This insect is known to science as *Phymata erosa*. This little bug is a good illustration of this law of mimicry. It is of a dull obscure yellow; and as it hides among the stamens of the goldenrod it is so concealed that it is difficult even for the human eye, sharpened by close scientific observation, to discover it. What wonder, then, that the industrious honey-bee, all unsuspecting, should come fearlessly into the very clutch of this cruel stinging bug? I gave the name "stinging bug" to this little stabber, as it often punctures man himself so as to cause a severe smart.

There is another curious feature about this little murderer that is not specially joyous to the bee-keeper. It has its front legs curiously fashioned so as to grasp with them; and as it lies snugly in its floral retreat it can, as bee or other coveted insect comes to it, grasp its luckless prey with one of these strong leg jaws, and, with the other, hold firmly to the flower, and then with its strong beak can pierce and suck its victim bloodless and lifeless. This phymata is widely distributed in our country, and destroys many thousands of bees annually. It is fortunate that our bees are so prolific, as we know of no way to get rid of these bugs, and we may not suffer very serious loss, for the increase in the hive with a good queen is so striking that the loss from the stinging bug is not greatly felt.




### PLACING BEES EARLIER IN THE CELLAR.

On Nov. 18, Mr. C. Edmanson, President of the Brant Bee-keepers' Association, a thoroughly up-to-date bee-keeper, helped me to put my bees in the cellar. On the 27th of the same month I helped him to cellar his bees. We both made up our minds that the bees had lost by remaining out the other nine days, and, circumstances permitting, the bees will go in even earlier next year.

On page 1510 you very wisely endorse what appears to be to you a new idea in comb-honey shipping-cases; viz., a sliding cover. No doubt the idea is original with Mr. Hart, but we have had them in general use in Ontario for fifteen years or more. I simply took the pattern from the old-fashioned wooden match-box.

### STIMULATIVE FEEDING IN SPRING.

At the Ontario Bee-keepers' Association convention lately held in Toronto, Messrs. Wm. McEvoy, S. D. House, E. Deckinson, Jr., and R. F. Holtermann were about the only pronounced advocates of stimulative feeding. They carefully qualified the statement by saying it had to be done skillfully and judiciously, and Mr. McEvoy said that, when begun at fruit-bloom time, feeding should be done whenever one day passed without either natural or artificial storing by the bees. For my part I am inclined to think that the four above-named gentlemen displayed remarkably sound judgment in their views and convictions upon the question.

### BRANT DISTRICT MEETING.

The Brant District bee-keepers' convention, which has been so great a success for several years, and which last year was honored by the presence of five (and no ordinary five) of our United States bee-keeping fraternity, is to be held this year at Brantford, Jan. 21, 22, 23, beginning at 7:30 P.M. of the first day, probably at the court-house. Mr. L. A. Aspinwall, President National Bee-keepers' Association, Jackson, Mich., has already signified his intention to be present with a non-swarming hive. As old and careful an investigator as is Mr. Aspinwall would be enough of a drawing card; but we expect many more. My bee-cellar will be open for inspection. I should be glad if those coming from the United States or Canada would write the secretary, Mr. W. J. Craig, Brantford, or myself at the same place. New York State is only some 80 miles away, and Michigan is within a reasonable distance.

### FOUL BROOD.

No doubt all will be pleased that, when the reports of the latter part of the season and that of the extreme eastern portion of the Province have been added to the early seasons, the percentage of apiaries found diseased of those inspected is 42. This, however, leaves no room for congratulation, particularly when, in some cases, every apiary in the vicinity was inspected. As the result of attending conventions in New York and Michigan I found much disease reported in the Michigan Convention, where, it was said, "We must wipe it out or it will wipe us out." In other diseases of a contagious nature a good wholesome anxiety aroused makes every intelligent person help in the needed work. It appears to me that the bee-journals could and should help in this work. Let every bee-keeper in the country work to see if the dis-

ease is in his and his neighbors' apiaries, and this, with the law in cases needed, will do much to stamp out the disease.

### HONEY FOR ROYALTY.

So King Edward, of Great Britain and Ireland, is to be presented with Canadian comb and extracted honey. It is the product of the Province of Ontario, and it was shown at the fruit, flower, and honey show, Toronto. Messrs. D. Anguish, Geo. Laing, H. G. Sibbald, E. Grainger, and J. H. Thomson, certainly had very fine honey there, and I feel sure that, with His Majesty's usual good judgment, the Ontario Bee-keepers' Association (for it presents the goods) will in future be "Purveyors to His Majesty." His peaceful tendencies are already well known; but we expect that, after partaking of this honey, his Majesty's tendencies in that direction will become so active, and his good will to the bee-keeping industry in Ontario will become so great, that he will be instrumental, or at least seek to be instrumental, in calling a truce, or even declare a peace between *Bacillus alvei* and the the larvæ of *Apis mellifica;* also between whatever factions or differences of opinion there may be in the bee-keeping world.

### CARBON DIOXIDE IN WINTERING.

In the *British Medical Journal* of Dec. 22, 1906, appears an interesting article on "Acapnia as a Factor in Shock." The article is by Dr. Henderson, and it *may* have a very interesting bearing upon the wintering problem. It is just such problems as these, and the impossibility of their accurate solution otherwise, that makes us long for the time when we shall have thoroughly practical yet scientific experiments in charge of apicultural experimental stations equipped for the most delicate of tests and closest observations and the recording of the results. Briefly Dr. Henderson states that it is found that, in the fœtus of animals, there is found in their blood a higher percentage of carbon dioxide than in the mature animal; that in breathing our lungs are not entirely emptied of gas, and that, when we draw in fresh air, owing to the admixture of this with the carbon-dioxide-laden air there is a dilution.

This admixture of carbon dioxide and air has a purpose, as has every act in nature. He found that, when we draw sharp quick breaths for several times in succession the carbon dioxide in the lungs is diluted, and, after such action, we naturally want to stop, or at least we much want to curtail breathing for a time. The object thus accomplished by nature is to increase again to normal the percentage of carbon dioxide in the lungs. Dr. Henderson, by careful tests, found that by increasing the amount of oxygen in the lungs, the palpitation of the heart increased, and the amount of blood driven through the veins was affected, and that this may become injurious; in fact, in extreme cases it caused death.

But some may say this is very interesting, and may even explain to those whose heart-action is weak why they should not exercise violently; but what has that to do with bee-keeping?

Why, I can see that it may be possible that, when bees are at rest, especially during the quiet of winter, it may be a positive advantage for the atmosphere to be diluted with carbon dioxide, that the lack of ventilation, except in a very moderate way, may be injurious, providing the moisture, by means of environments, or the construction of the hive, or can be taken away from the bees. What interesting problems in bee-keeping, problems that we have not yet dreamed of, may we not solve in the future?

## Gleanings from Our Foreign Exchanges

W. K. MORRISON, MEDINA, OHIO.

### HONEY GINGER-BREAD.

Simmer one pound of honey; mix in one pound of rye flour or wheat flour. Stir with a wooden spoon. Beat it well and then allow it to get *cold.* Add to the batter (dough) half an ounce of carbonate of ammonia, which may be obtained at any drugstore. Thoroughly incorporate the carbonate of ammonia, for on this the proper rising of the bread depends. It should be cooked slowly in the oven. This is said to produce excellent bread, and yet is very easy to make. —*Health and Honey* (*French*).

### BEE-KEEPING FOSTERED BY THE NEW ZEALAND DEPARTMENT OF AGRICULTURE.

The New Zealand Department of Agriculture has just sent us a copy of a recent bulletin on bee culture which it is now distributing to the bee-keepers of that far-away country. As usual, it is well gotten up, and its teachings are sound and good. Its author is an old-time friend of GLEANINGS, Mr. Isaac Hopkins, who is now government apiarist. The bulletin is mainly written in the interest of beginners and amateurs, and, so far as we know about New Zealand apiculture, the instruction given is excellent.

### A NEW WORK ON THE NATURAL HISTORY OF THE HONEY-BEE.

The publishers of the *Illustrierte Monatsblatter fuer Bienenzucht,* published at Klosterneuburg, near Vienna, have sent us a copy of part first of their new book "Contributions to a Natural History of the Honey-bee," by Dr. Fleischman, Professor of Zoology in the University of Erlangen. The editor is the well-known Theodor Weippl, himself quite an author, and also editor of

the Austrian bee-journal from the office of which this book is published. The book is somewhat on the style of Mr. Cowan's, but goes over more ground, and goes deeper into the subject. One of the features of this work are the illustrations drawn by Dr. Fleischman himself. There are nearly sixty in this part alone, which deals with the hair, legs, wings, mouth-parts, and various parts of the body. The cell theory as applied to honey-bees is graphically displayed so as to be readily understood. It will be some time before all the parts are out, as it is being issued from time to time. To those who understand the German language thoroughly, we can highly recommend this book. Each part costs 25 cents; but any one wishing to obtain copies must subscribe for the whole book, which, we understand, will consist of six parts.

### THE HONEY-BEARING TREES OF WEST AUSTRALIA; THE EUCALYPTUS.

Mr. John Craigie has kindly furnished me with a list of the principal honey-bearing trees of West Australia, which may be considered a model, and hence it is appended here. It will be noted that the common names of the eucalypti differ in some cases from those in other parts of Australia.

| MYRTACÆ. | SYSTEMATIC NAME. | VERNACULAR N'E. |
|---|---|---|
| Myrtacæ. | Eucalyptus Calophylla. | Red gum. |
| Myrtacæ. | Eucalyptus Marginata. | Jarrah.— |
| Myrtacæ. | Eucalyptus Toxophylla. | York gum. |
| Myrtacæ. | Eucalyptus Redunca. | Wandoo. |
| Myrtacæ. | Eucalyptus Gomphocephala. | Tuart. |
| Myrtacæ. | Eucalyptus Patens. | Blackbutt. |
| Myrtacæ. | Eucalyptus Rostrata. | Flooded gum. |
| Myrtacæ. | Eucalyptus Rudis. | Flooded gum. |
| Myrtacæ. | Eucalyptus Megacarpa. | Blue gum. |
| Myrtacæ. | Eucalyptus Agonis Flexuosa. | Peppermint-tree. |
| Myrtacæ. | E. Melaleuca Leucadendron. | Paper-bark. |
| Proteacea. | Banksia Verticillata. | River Banksia. |
| Proteacea. | Banksia Littoralis. | Seaside Banksia. |
| Proteacea. | Banksia Attenuata. | Narrow-leaf Ban'a. |
| Proteacea. | Banksia Menziesii. | Menzies Banksia. |
| Proteacea. | Banksia Ilicifolia. | Hollyleaf Banksia. |
| Proteacea. | Banksia Grandis. | Great flowering B. |
| Proteacea. | Banksia Dentata. | Toothed Banksia. |
| Leguminosa. | Acacia Saligna | Wattle bark. |
| Leguminosa. | Acacia Acuminata. | Raspberry jam. |
| Leguminosa. | Acacia Microbotyra. | Wattle gum. |
| Læcinthaceæ. | Nuytpsia Floribunda. | Christmas-tree. |

For good or ill, the eucalyptus-trees are being extensively planted on the Pacific slope, and the more we know about them the better. It is pretty certain that, in many cases, the wrong species has been planted, and an error of this kind is difficult to rectify. For example, the blue gum of Tasmania (*Eucalyptus globulus*) has been quite extensively planted, whereas it is much inferior to some others for the same purpose. Curiously enough, California has great virgin forests of fine redwood and pine trees, and yet it is planting eucalypti by the millions.

### THE HONEY FLORA OF SPAIN.

Señor Miguel Pons-Fabregues, of Barcelona, Spain, has sent me a copy of his "Apicultural Flora of Spain," a book of nearly 200 pages. As indicated by its name it deals with the honey-plants of Spain, or, rather, the Iberian peninsula. It enumerates 652 species of plants which the bees frequent. Of course, these are not all natives, some being exotics; but the fact that some parts of Spain are very cold, while other parts are quite tropical, growing oranges, lemons, dates, etc., accounts for the long list. Señor Pons-Fabreques has made quite a study of the bee flora of Spain, and has succeeded in compiling a very interesting list.

Some of the plants he mentions might with great propriety be introduced into the United States; for example, chick-peas, sulla, esparcette, lentils, St. John's bread, and fenugreek, all belonging to the order of legumes. In Spain these plants have been regularly cultivated for hundreds of years.

This Spanish writer regards the "sweet clover," or "Bokara clover," of this country, as a sub-species or variety of *Melotus alba*, which he terms *Melotus leucantha*. He mentions, also, *Melotus parviflora*, *M. neapolitana*, *M. macrorhiza*, and *M. arvensis*. He does not mention the dark-blue or purple sweet clover.

He mentions the hardy yellow alfalfa (*Medicago lupulina*). He says it sometimes bears violet flowers. He also states there are many other species of *Medicago* in Spain.

#### THE DANDELION IN SPAIN.

In regard to the much maligned dandelion he rightly remarks that it is an excellent salad plant, and that it is an excellent forage plant for cattle. It may interest many to know that heather grows well on the mountain tablelands of old Spain. He quietly remarks, however, that, while the quantity of the honey obtained from it is very great, the quality is inferior. If he ever goes to Germany or Scotland he stands a chance of being lynched.

He mentions the olive-tree as a honey-plant, in deference, probably, to the opinion of some other bee-keepers who have reported it as such. He seems inclined to doubt it. I have observed olives for years, and, so far, have yet to see a bee near its flowers. Possibly it yields honey-dew. He mentions the grape in his list, for the reason that, after other insects have bitten open the skin, the bees manage to get a quantity of sweet nectar therefrom. Altogether the book is a very creditable production, more particularly as it emanates from a country which some are inclined to regard as behind the age. It is very well printed on good paper, and sells for 50 cents.

### BEE-KEEPING IN SPAIN; A COMPARISON OF PRICES ON HONEY IN THE VARIOUS EUROPEAN COUNTRIES, FROM EL COLMENERO ESPANOL.

On various occasions we have shown how abundantly blessed is our native country with appropriate conditions for successful apiculture—a benign climate, and a rich and abundant flora rendering it possible to se-

cure yields which may seem impossible to those who do not follow the movable system of bee-keeping. Modern apiculturists who devote study and knowledge to effect a complete understanding of the problems surrounding the collection of honey are just as anxious to secure a price for their honey from merchants equal to its actual value, or the system in which it is held, and according to the class to which it belongs. In this part of Spain it is somewhat difficult to realize on our honey for want of a depot or honey-selling agency.

Our honey, especially that proceeding from orange-flowers, in the kingdom of Valencia, Murcia, and Andalusia, also that from the rosemary, is alway appreciated, as also that gathered from the flowers of the wild thyme, and other mint flowers having an exquisite aroma, and which are proper to the Mediterranean region and the coast of Spain. These have to come in competition with honey derived from clover, sainfoin, alfalfa, rape, and other kinds of various origins, which are more abundant in outside regions, but which we are certain are not superior to our Spanish honeys. We propose, then, to compare the prices obtained in other countries with those in our own, as a guide to our bee-keepers.

*Berlin.*—The price of extracted honey there is always firm enough; ½ kilo (a little more than 1 lb.) extracted honey, 30 cts.; ½ kilo (a pound section) comb honey, 37½ cts.; 1 kilo (2⅕ lbs.), 59 cts.

*Bremen.*—Honey (in sections) per lb., 30 cts.; honey (extracted) per lb., 27½ cts.; honey (strained), per lb., 20 cts.

At Reichenberg, Bohemia, Austria, the price of honey in the market is approximately as follows: ½ lb., 20 cts.; 1 lb., 36 cts.; 1½ lbs., 56 cts.; 2⅕ lbs., $1.00.

It should be understood this is for honey which is new, and put up in a jar.

*Germany.*—Already we have quoted the prices obtained for honey in the capital city of the nation, giving the figures obtained at the end of last October. These prices make a very suggestive comparison when put alongside the prices obtained for Spanish honey, and it is certain the quality is in nowise superior to ours. The sale of honey at these prices is very considerable, and may be indicated as never under 30 cents nor over 37½ per lb. (17 oz.). It is understood, of course, the honey is in glass. For basswood, locust, and similar kinds, which are considered very good, but which are certainly not superior to orange blossom or wild thyme, a price of 50 cts. per lb. is obtained.

In Denmark the best honey is sold by the producer directly to the consumer, and the average price obtained is in the vicinity of 28 cts. per lb. in the bottle.

In France the course of prices for honey in Paris is almost stationary, and for light-colored high-class honey the stores never seem to have enough.

In Switzerland the honey is generally very good, and as much as 60 cts. per lb. (in jars) is often paid for it.

Now we have some sort of data on which to base the future production and sale of honey in Spain, with respect to the chances of exporting our honey to foreign countries, more particularly as we have noted the large importations of honey from South America into Hamburg, Germany, which would indicate there is always a remunerative sale for good honey elsewhere.

But, on the other hand, here in Spain all kinds of good honey which can be guaranteed as the pure nectar of the flowers, and which the intelligent buyer knows to have been extracted by centrifugal force, and produced by the movable-frame system, can generally be sold with facility. In addition to this there is this about this system, and it is a very important feature, that, provided there is no other bee-keeper in your locality, it is quite possible to secure from an apiary 25.000 lbs. of honey—a superb result.

It is important that much study be devoted to apiculture, for our country is lamentably deficient in this respect, and clings to the old-fashioned plan. Our present limited production is simply due to superior natural advantages only. Our system of production is faulty, and so also is our system of selling to foreign countries, for the superior quality of our honey ought to insure for it a ready sale in foreign markets. In our November number it may have been noticed that, through the medium of the government and the department of agriculture, it had been officially determined that apiculture would receive more attention in future from the Grand Institute of Agriculture, and also in the schools of practical agriculture, so that the true system of apiculture, theoretical and practical, will be taught.

PEDRO VILLUENDAS HERRERO.

## A BELGIAN BEE-KEEPERS' SOCIETY AND ITS DOINGS.

One of the most active and energetic bee-keepers' society in all Europe is that of Bourg-Leopold, in Belgium. During the season just passed it held a number of meetings which, in some cases, were held at the apiaries of members. For the year 1908 the committee of management have decided on a program that, to say the least, is praiseworthy.

1. To change the race of bees in the country, and to substitute Americans, Italians, and their crosses.

2. As far as practical, to increase the bee pasturage.

3. To maintain hives on scales so the value of the various localities for bees may be determined with certainty.

4. Official participation in all bee-exhibitions, agricultural fairs, food expositions, etc., with the view of popularizing the honey of the Campine.

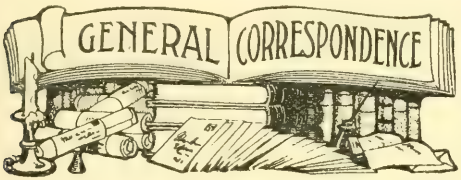
5. To maintain a committee whose business shall be to promote the sale of honey belonging to members.

6. To study the bee flora of the Campine and to propagate plants which yield honey.

7. To gather a collection of home and foreign honey.

8. To study every thing bearing on the improvement of the industry.

The first item ought to interest the Germans just over the border, for they have severely condemned our American bees. Was it prejudice?




## LATE FALL FEEDING.

**Its Advantages; How 200 Colonies were Fed a Sufficient Amount of Warm Syrup to Last them Through the Winter; Why Sugar Syrup Should be Substituted for Honey.**

BY E. W. ALEXANDER.

It is only a few years since the necessity of feeding bees in the fall was looked upon as the result of inexcusable negligence in the management. But time and experience are changing many methods, and we are fast learning that bee-keeping to-day is a very different business from that of years ago.

Last winter, while visiting one of the most extensive honey-producers of New York, he told me that he and his father had for several years fed every one of the 1500 or 2000 colonies they had, just before putting them away for winter. They gave each one about 20 lbs. of sugar syrup without regard to the amount of honey the hives contained. This syrup was made from granulated sugar in the proportion of 2 lbs. of sugar to 1 of water. This was boiled until well dissolved, when about ¼ lb. of tartaric acid was added to every 100 lbs. of sugar. From their extensive experience in feeding tons of sugar to thousands of colonies they told me it was a much safer and a better winter food than any honey their bees had ever gathered.

The principal fault with all honey that I am acquainted with, except basswood, is that it contains some pollen that is carried into the honey-cups of the flowers by the wind or by insects, and then it is taken out with the nectar and becomes mixed with the honey, where it has a very injurious effect on the bees during the winter. This pollen is very noticeable in our large honey-tanks when they are nearly full of extracted honey, as it rises to the top, forming a scum sometimes two inches thick. This, when mixed with the winter stores, is quite likely to cause dysentery before the bees are taken from their winter quarters in the spring.

Now, with sugar syrup, since there is no foreign substance it is practically all digested, and the bees come from their winter quarters dry and clean, leaving no marks on the snow or their hives after their long confinement. This one advantage derived from sugar syrup, of itself alone, would far more than pay for the trouble of late fall feeding.

But there is another advantage gained by substituting sugar syrup in the place of honey. If it requires about 20 lbs. of honey to winter a colony, this additional surplus would be worth at wholesale about $1.50. Now, in its place, if we use 14 lbs. of sugar to make about 21 lbs. of very thick syrup, costing about 75 cents, or half the amount the honey will bring, there is a saving of over $400 in an apiary of 600 colonies. Besides the bees are given a much safer and better winter food.

We have been so well pleased with our experience along this line, and the experience of these noted bee-keepers, that we are now wintering some 200 colonies almost wholly on sugar syrup.

As many readers of GLEANINGS would like to know how we feed such a large amount of syrup in cool weather I will briefly state how it was done.

The first important part is a convenient feeder, one that will hold at one time all the feed necessary for one colony. This we made by taking 50 of our outside telescope caps, having a rim 2 inches deep all around. The inside of these we gave a good coating of hot paraffine wax, which prevents the syrup from penetrating into the wood, and also stops leaking. These caps are ¼ inch larger each way inside than the hive is outside.

We put in a suitable float to prevent the bees from drowning in the warm syrup, and also put two cleats across inside the feeder for the hive to rest on; then about sundown we took these 50 cap feeders and set one properly leveled up near each hive we wanted to feed. With the syrup as hot as the bees could stand we poured into the feeder the amount we thought the colony required, then, carefully lifting the hive from its bottom-board, we set it inside the feeder directly over the warm syrup, and the job was done. The bees at once went down into the feeder and removed all the syrup long before morning; so the next day all we had to do was to set the hives back on their bottom-boards and place the 50 feeders ready to feed 50 more colonies the following night. After we had the syrup ready it required only about half an hour for my son and myself to feed 50 colonies. In four evenings, between sundown and dark, we had the 200 colonies all fed, and not a spoonful of syrup was wasted nor a handful of bees lost.

This feeding was done on quite cold frosty nights about Oct. 25.

Now, if we were feeding in early fall for the purpose of brood-rearing it would be necessary to feed much thinner syrup, and only two or three pounds a day, about the same as we would feed in the spring in order to stimulate brood-rearing.

DR. BIGELOW GIVING A DEMONSTRATION BEFORE A CLASS OF TEACHERS FROM THE SUMMER SCHOOL AT BUTLER UNIVERSITY, INDIANA.—SEE PAGE 34.

Dr. Bigelow, the nature-study man, in the middle foreground, is the one who, two years ago, brought to the home apiary of the publishers a large company of schoolteachers to study bees and their methods of management. Our older subscribers will recall half-tones on these pages showing how at this time he not only tamed the bees but the schoolma'ms as well. In the picture he has again demonstrated his ability to bring together in perfect harmony the honey-makers and the honey-eaters. He has done much to introduce bee culture as a department of nature-study in our public schools, and in a general way to popularize honey.—ED.

Every year's experience convinces me more and more of the importance of feeding our bees at certain times of the year. We as honey-producers have sadly neglected this important part of our business.

There are many of us who neglect to do certain things both useful and necessary for the welfare of ourselves and bees, simply because we have no convenient and quick way to do the work. In feeding these 200 colonies I have just mentioned, if we had been obliged to feed them in our small spring feeders holding only about 2 lbs. each, we should have had an elephant on our hands; and the feeding, if done at all, would have required two weeks or more, as the bees would hardly have entered a small feeder so late in the season.

The principal advantage in late fall feeding is to have the bees store the syrup in and around the cluster where they have removed the honey during the last of their breeding in the fall; then this is first consumed by the bees during the winter; and by the time they commence to use their honey they are out of the cellar, and can frequently fly; so if their honey contains pollen, or is otherwise of poor quality, it can do them no harm.

I think the time is near at hand when the successful honey-producer will substitute sugar syrup for honey as a winter food wherever bees require a cellar for winter protection. In order to compete successfully with many that are now well established in the production of honey, it is necessary for us to be ever ready to take advantage of any thing that will add to our income, even though it may require the investing of some money at first.

We must certainly sow before we can expect to reap. This applies as truly to bee-keeping as to any other line of business.

Delanson, N. Y., Dec. 6.

[It is the usual rule nowadays to feed sugar syrup early in the fall before cold weather sets in, making the proportions half sugar and half water, either by weight or by measure. While this does not make a syrup by any means as thin as nectar, yet a thin syrup the bees will invert better than a thick one; that is to say, they partially digest it, making it more suitable for a food. Such a syrup, when evaporated in the hive, will never granulate or revert back to sugar; nor is it ever necessary to use any acid to prevent such granulation. But in feeding late in the fall, after cool or cold weather has set in, it is necessary to feed as our correspondent advises, with a syrup two parts of sugar and one part of water, and perhaps it may be advisable to use an acid.

There is an advantage in feeding late, and all at one feed, thick syrup. The bees store it quickly, and in the mean time there is no tendency to induce brood-rearing, because there is not time for it, and because it is too cold. The thick syrup does not require evaporation like the thinner one, and consequently does not cause the bees to set in motion their little chemical laboratories to invert the syrup. Possibly there is an advantage in this. At all events, we have a number of times in late fall, when it was too cold for the bees to fly, fed a thick syrup, and in each case the bees came out in fine condition in the spring. Whether this was due to *other* favorable conditions, or whether it is an actual advantage to have an uninverted syrup, we can not say.

This is an interesting field for experiment and discussion, and we should be glad to hear from others of our subscribers who may have any thing to offer on this subject.—ED.]

## FRANK RAUCHFUSS' HOME IN COLORADO.

BY FRED W. MUTH.

Mr. Frank Rauchfuss lives in a pretty little home in the suburb of Aurora, on the outskirts of Denver. Standing before his house, in the middle of the road, one can see, at night, Pike's Peak, 95 miles distant, and from the front porch can be seen the beautiful, picturesque, snow-capped mountains some sixty miles away.

Mr. Rauchfuss needs no introduction to the bee-keeping world, as he is one of the best bee-men who ever lived, and is the manager of the Colorado Honey-producers' Association. He conducts a bee-supply and honey store at 1440 Market Street, Denver, where he disposes of many carloads of bee-

FRANK RAUCHFUSS AND FAMILY OF AURORA, COLORADO.

supplies during the honey season, and sells the product of the members of his association.

Mr. Rauchfuss and his good wife speak German at their home, which pleased me more than I can tell, for it reminded me of days of yore in my dear old home.

It would certainly make any farmer's wife envious to see Mrs. Rauchfuss' garden next to their house. Never before have I seen a

home garden under such high culture. It is, indeed, a real picture.

Cincinnati, Ohio.

## DEMONSTRATION-CAGES.

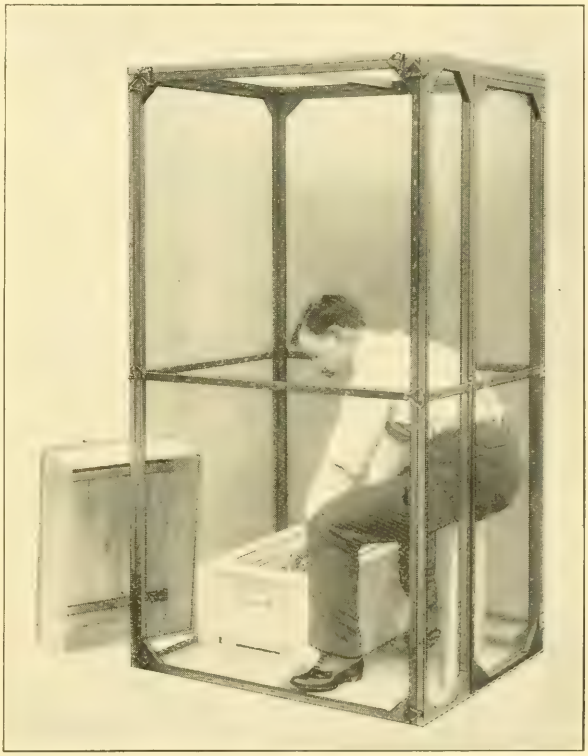
### A Simple Handy Collapsible Wire-cloth Cage for Public Demonstration of Bee-handling or for Work in a Bee-yard.

BY E. R. ROOT.

Perhaps some of our readers know that I have been giving talks on bees with practical demonstrations in the handling of them, before church and Y. M. C. A. organizations, at various points in this State, and it has occurred to me that there might be some who will be called upon to do the same thing, and would, therefore, like to know how I do it.

In order to handle bees before a public audience, especially at night, where the lights might draw flying bees, it is necessary to have a portable cage of suitable dimensions, and yet one which can quickly be put in a knock-down condition, to be shipped in a trunk or wooden case.

The subjoined illustration shows the cage which I have used in various public demonstrations. It consists of four wire-cloth panels, one of them containing a door, and a top covered with muslin. Each panel is made of a wooden frame stiffened by three corner-pieces secured at the intersections, and covered with wire cloth. Four of these panels are placed up against each other, and securely fastened by means of Van Deusen hive-clamps, as shown. Contrary to what one might expect, these Van Deusen fasteners make a very solid and strong cage, and yet one can, in the space of two minutes, put the whole thing in the knock-down by loosening the clamps and slipping the panels into a large flat oblong box.



A NEW COLLAPSIBLE CAGE FOR MAKING PUBLIC DEMONSTRATIONS OF BEE-HANDLING.

After having tried this cage, and carried it over the country to various points, it occurred to me that something of this kind would be very serviceable in an ordinary bee-yard, especially where queens are reared. While one can make up a solid non-collapsible cage, yet in the winter time its dimensions will not admit of its going into any door. For that reason it is desirable to have a structure that can be put in the knockdown and stored away during winter or during that time of year when it is not needed; for it is only during the robbing season that it would be actually required. For the purpose of grafting cells, or performing any extended manipulation over a colony, it is almost indispensable, for one can work securely free from robbers, with any degree of comfort.

If one were to do a large amount of transferring, he would find a cage of this kind very convenient. There are many bee-keepers who make a business of transferring in a given locality. With an outfit of this sort one can collapse it, put it into a wagon, and, on arriving at destination, set it up, and transfer hour after hour, without any danger from robbers.

We have been using the non-take-down cages in our yard, but, unfortunately, unless secured they will be blown all about the yard. On one or two occasions a gust of wind has caught them, smashing them completely. We have been compelled to fasten them to trees or some stable object; but in that case they are exposed to the weather, and in one season are of but little value, as they begin to pull apart. This collapsible cage, with its Van Deusen clamps, permits one to put it out of the weather and into a building just as soon as its use is not required.

The cage here shown is 30×38 inches, and 6 ft. tall. Any good mechanic can make it out of pine strips ⅞ inch square, and a few yards of screen wire cloth and 16 Van Deusen hive-clamps. It will pay for itself in one season in almost any yard.

## BEE DEMONSTRATIONS OF FAR-REACHING VALUE.

**Dr. Bigelow in Indianapolis.** See p. 30

BY WALTER S. POUDER.

There never was a time when the people were so disposed to rate the bee industry at its true value as now. The honey-bee as a subject for a nature-study is, perhaps, one of the most interesting things in all the world, and no one can study its wonderful nature without becoming greatly interested. This being true, the bee-keeper finds his business the easiest to advertise of almost any line, because of the eagerness of the public to learn.

The present year will long be remembered as one of the poorest honey seasons; but it will also be remembered as the beginning of the era of pure foods and the end of the old story about manufactured comb honey. All in all I have never seen the bee fraternity more encouraged as to the future than today, because of the better markets, better understanding of the industry, and the increased demand for the output of the apiary. Why, it has not been many years since there was very little demand for extracted honey because it was not at all understood. Today the demand for it exceeds that for comb honey, and the demand for granulated extracted honey is increasing each day.

The public is anxious to learn, and those who are so located that they can give demonstrations with a few colonies of bees occasionally will be surprised at the great interest taken. A queen-bee in a mailing-cage on my desk, waiting for the postman, often attracts attention and starts some one to investigating. A helper placing foundation starters in sections has attracted so much attention that at times it has seemed almost annoying.

Perhaps the most interesting demonstration ever given in Indianapolis or in this State was given here recently by Prof. Edward F. Bigelow, of Stamford, Conn. Professor Bigelow was on a lecture-tour, and brought a class of 45 teachers who were taking the summer course at Butler University. His ability in this line of work can not be excelled, and I doubt if it can be equaled; and surely a class never enjoyed a more interesting discourse. He began by mounting a pedestal and first explaining the old straw skep, then the modern hive, comb foundation. comb-building, extracting, rendering wax, etc., and explaining each detail in such a manner that even a child could have understood. Then all went to the lawn where the bees are kept, and here he showed his skill by manipulating the hives and combs of brood, handing each a comb of brood and adhering bees which were accepted with some timidity at first; but he soon had their confidence, and veils were all laid aside. The duties of the queen, brood in all stages, comb-building, etc., were never better explained, and a happier lot of people never left this honey-store. It would be interesting to know just how many times this meeting has been talked over by those who were fortunate enough to be one of the party.

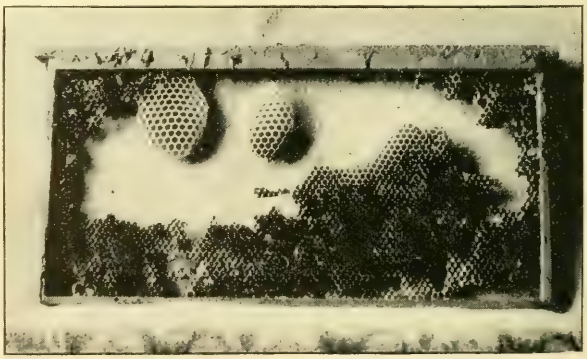
One of the very prettiest little hives for convenient demonstrations is the little Pearl Agnes hive, invented by Professor Bigelow. I have such a hive in my dooryard at home, and I find it to be quite an attraction for my near neighbors. Observatory hives made to contain a single Pearl Agnes frame are the neatest device in all the world for loaning to terchers at public schools, and I am planning to place several as soon as schools begin. The honey-bee is always admired if properly introduced.

Indianapolis, Aug. 22.

## SOME PECULIARITIES IN COMB-BUILDING.

BY DR. C. C. MILLER.

Bees generally attach their combs at the top, and build downward. But it is not a very difficult thing to get them to build in the opposite direction. I have known them to do so many times. Take a good colony at the beginning of the honey-flow, and place over its hive an empty hive-body, and it will pretty surely build from the top-bars upward. A peculiarity of combs thus built is that they are less inclined to be straight than other combs. If one were to allow reasoning to the little creatures, it would be as if they should say, "When we build from the top down, we can build straight flat sheets, merely corrugating them a little; but if we should make a flat sheet when building upward it would tumble over of its own weight;" so these upward-built combs, instead of following the direction of the top-bars, or being built across them, twist in all directions, some of them forming almost a circle with a



COMB BUILT WITH NO SUPPORT EXCEPT THE WIRES.

diameter of 4 inches or more. Pictures of such buildings have already appeared in GLEANINGS, but I think nothing like the present illustration has been shown. Indeed, it is the only case of the kind I ever saw; for you will see at the central part, under the top-bar, that the bees seem to be building in mid-air. In reality that isolated piece of comb is supported by wires, which do not show in the picture because too fine.

A very old comb in very bad condition had been given in an upper story, and incidentally the lesson is taught that, although bees will clean up a very bad job, there is a limit; and if the comb is too bad they will proceed to tear it down. In the present case you will see that nearly half the comb was gnawed down. But at the part under discussion there was left a piece of the septum about as large as a silver quarter-dollar, and upon this they built. This bit of old septum is in the lower part, so most of the building was done upward. You will notice on the under side of the top-bar, directly over the floating comb, that the bees have begun a deposit of white wax, and the sharp point at the upper end of the floating piece shows that the bees would soon have united the two together.

Notice at the right of our floating comb that the bees are building upward upon the old comb.

Marengo, Ill.

[This is an odd specimen of comb-building, and, taken in connection with Dr. Miller's comments, makes a very interesting study. We should be glad to get photos of these interesting or grotesque comb curios and pay for them. While some of them are of only scientific interest others may lead to some practical results.—ED.]

## THE PLURAL-QUEEN SYSTEM.

### Why it is More Practicable with a Divisible Brood-chamber than with an Ordinary Full-depth Hive.

BY J. E. HAND.

I notice that Mr. Titoff, in an article on p. 1328, asks for information about the two-queen system, and then says that he doubts whether the plan as a whole will ever prove to be a success. I will only endeavor to add what little information I have gained from a limited experience in the use of a plurality of queens in the same hive, although in separate brood-apartments. In the first place I would respectfully refer my doubting friend to an article on page 1330, from his own State, by Howard Davenes. I believe that the only advantages claimed for this system are in building up weak colonies for an early honey-flow and in the prevention of swarming when working for comb honey. It should be remembered that this system like the Stachelhausen plan of shook swarming loses its force when used in connection with the full-depth-frame hive. This fact should be evident to even a casual observer.

I wish to go on record as saying that there is but one system of contraction that is at all practical when we take into consideration the amount of labor involved and the results to be gained by such contraction, and that is horizontal contraction by means of shallow sectional hives. All other methods are but makeshifts that, by the amount of labor involved, are both expensive and inadequate.

This same statement will also apply to the two-queen system, as any one can see who will use a little sober judgment that it would be the height of folly to add to a colony of bees in early spring another full-depth hive with a queen, and only a small cluster of bees, and viewing the matter from the standpoint of the full-depth-frame hive. I can agree with pretty nearly all that Mr. Titoff has to say regarding the matter.

However, with the sectional hive it is far different, and a shallow brood-chamber containing a queen and a small cluster of bees, and some brood, if simply placed upon a strong colony of bees as soon in spring as the weather will permit, will soon build up to a rousing colony of bees. Another section of brood-chamber may be added if desired, after the first has become well stocked with brood and bees. Of course, a queen-excluder is used to keep the queens apart. These colonies, after becoming strong enough, may be separated, or kept together up to or even through the honey-flow according to the time of said flow.

For instance, if the honey-flow comes late in the season it may be desirable to separate the two-queen colonies as soon as they become strong enough, and I believe this is the method adopted by Mr. Alexander, who secures a great part of his surplus from buckwheat. In a location where the main honey-flow comes from clover and basswood it is far more desirable to keep the bees together up to the beginning of the honey-flow. Further than this, there should be no iron-clad rules governing the case, as the further disposition of the colony is a matter to be decided by the operator according to the probable duration of the honey-flow and the consequent liability of the bees to swarm.

If no swarming is desired, and the prospect is good for a fair flow of nectar, I know of no better method for the average bee-keeper, under ordinary circumstances, than the following, which is the Stachelhausen plan of shook swarming, only in our case there is no handling of combs except by hives.

#### A MODIFIED PLAN OF SHOOK SWARMING ADAPTABLE FOR BEGINNERS WITH THE DIVISIBLE HIVE.

First we will begin at the top of the two-queen hive by blowing a little smoke down between the brood-combs, and fanning it down with a Coggshall bee-brush. We drive most of the bees down and out when we remove this section of brood-chamber, giving it a quick jerk to dislodge the bees, and place it on a bottom-board. We proceed in like manner with the next, which is placed upon the other. The queen in the upper

part will be either on the honey-board or in one of the sections of brood-chamber treated, and should go with this hive, which is now placed upon a new stand.

We now have the bees of the two hives in one hive with the other queen; and if left in this condition when working for comb honey they will soon cast a swarm, so we will proceed with this hive exactly as with the other, except that in this case all the bees as well as the queen are driven into an empty hive consisting of two sections of brood-chambers with frames filled full of foundation. This hive, having been previously placed below and on the bottom-board previously occupied by the colony treated, it will remain there. The hives containing combs of brood and honey, but no bees, may be tiered up seven or eight high to be drawn on when desired.

In 48 hours after treating, a queen-excluding honey-board is placed upon the hive containing the driven swarm, and upon this a super of sections filled with foundation: after which the bottom section of brood-chamber is removed, and the bees shaken out in front of the hive.

Our object in hiving the bees in the first place in two sections of brood-chamber was to prevent them from swarming out the next day, as they are almost certain to do if hived directly into a contracted hive; and our object in removing the bottom section of brood-chamber after the bees have settled down to work, and given up the idea of swarming, is to contract the brood-chamber so as to force the bees to begin work in the sections at once; and as soon as the work has well begun in the sections, more room may be given by adding another section of brood-chamber containing either combs of honey or combs of brood from the piles that were tiered up, or frames of foundation, at the discretion of the operator; and, according to the probable duration of the honey-flow, such should in every case be placed at the bottom, and directly upon the bottom-board, and in no case should more than two sections of brood-chamber be given with one queen during the honey-flow.

If the honey-flow be of long duration it may become necessary, in order to prevent swarming, to remove one of the sections of the brood-chamber, giving in its stead one containing frames filled with foundation. In this case the empty brood-section should always be placed at the top of the brood-chamber. The queen-excluding honey-board should be removed as soon as the brood-nest is well established and work has well begun in the sections.

We have found that, with a honey-flow lasting four weeks, these extra strong colonies will often make preparations to swarm again unless room is given in the brood-chamber by exchanging frames of brood and honey for empty frames, as stated above. This is on account of the top section of the brood-chamber becoming somewhat clogged with honey. Colonies treated as above will, during a good honey-flow, roll up an amount of comb honey that will astonish some of the oldtimers who can see no advantages either in contraction or in the two-queen system. "Where ignorance is bliss, 'tis folly to be wise."

I would especially recommend the system, as outlined in this article, for beginners, and especially in locations having a fair to good honey-flow, in preference to the one outlined in my season's work with the sectional hive, which, being somewhat complicated, is better suited for the expert honey-producer, and in locations where it is not possible to secure a crop of comb honey by the usual methods.

The descriptions of these hive manipulations are, of necessity, somewhat tedious in order to make every thing plain, although the manipulations themselves are very rapid.

This article is already long, and yet the subject is not finished. With the editor's permission I will finish it in the next issue.

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## THE PLURAL-QUEEN SYSTEM.

**A Protest Against the Plan; Time and Money Should be Spent in Breeding Better Queens Rather than in Striving to Make a Lot of Poor Queens Live Together.**

BY WM. M. WHITNEY.

*Mr. Editor:*—The discovery of plurality of queens in the same hive seems to be attracting attention, and causing no small degree of surprise, even among old and experienced bee-keepers. It seems somewhat strange that this should be so, as it is a well-known fact that other than mother and daughter have been found in the same hive living peaceably together. If I'm not mistaken, I have read somewhere of an exhibition at some fair in Europe of a hive of bees with four queens living in harmony together. Also, in the third edition of Langstroth by Dadant, on page 222, there is a very interesting account of five colonies occupying one hive, and the same account is repeated in the last revision. It may be said that these colonies occupied different portions of the hive, and acted entirely independently of each other; but the fact remains that they must have had the same scent, and the bees must have mingled, or were likely to have mingled more or less together during the time of their occupancy of the hive, and must have had an opportunity to destroy either of these queens.

In 1898 I thought to experiment along this line, and for the purpose made what is known as a jumbo hive, two stories and double-walled, to contain 16 frames in the brood-chamber, with perforated zinc division-board in the center. With this arrangement I thought to secure, if two queens could be made to live in peace, a large amount of surplus comb honey. After two failures I succeeded in securing queens that the bees tolerated, but not a section of honey did I get from that hive, notwithstanding the sea-

son was a fairly good one, and other colonies produced a fair crop of section honey.

In the following spring I found one of my queens missing. It occurred to me that there were virtually two hives in one, with all the danger of losing a good queen at any time, as well as that of disturbing both colonies in handling one, and the other disadvantages that presented themselves to me caused me to abandon the experiment, with the thought that the game was not worth the powder.

The idea that it is a good thing to have two or more queens in one hive in early spring for the purpose of building up strong colonies does not appeal to me. If, with my management, it required two or more queens to give me good working force for honey-gathering at the proper time, those queens, young or old, would be condemned and executed. I'd give very much more for one good queen than for half a dozen poor ones at any time of year. I should hesitate to buy queens from any breeder who thought it necessary thus to build up strong colonies in the spring, for fear that I'd get the most common sort of layers in time if the practice were continued. Adopt the practice of using only large and well-developed queens; let the management be such that the colony shall be kept warm in early spring, and have the right kind of nourishing food, and plenty of it, then one queen will soon fill the brood-chamber to overflowing with ambitious workers when there is any thing to be done. Such will be found to be a colony in normal condition, and nothing better could be reasonably hoped for.

If I may be permitted, I'd like to illustrate what I mean by giving an example from my own yard. My apiary is pretty well known as having strong colonies in the spring. For example, let us examine No. 25, which is a fair sample of hives in the apiary, so far as numbers are concerned—a two-story double-walled hive with 9 Hoffman frames in the brood-chamber and 10 in the second story On June 5 this colony swarmed. I captured the queen and put the cage containing her in my pocket and awaited the return of the bees. In the mean time I prepared three hives for use in dividing the colony. When the swarm had returned, and become quiet, I removed the cover and found not only the hive proper but the two-inch air-space outside of the super literally filled with bees. Selecting a frame of brood containing one or more nearly ripe queen-cells for each of the three hives, I proceeded to remove the ten frames of brood and bees from the super to the center of these hives, making as nearly an equal division as possible; then I shook bees from some of the frames of the brood-chamber into each hive; filled them at the sides with empty combs, when they looked, for all the world, like fairly strong colonies. Then I filled the super of the parent colony with ten more frames of comb, and released the queen. These newly made colonies at the time of swarming may be placed immediately anywhere in the yard without danger of bees returning to the parent hive, which is not the case at any other time; but, to return to the parent colony.

On the 5th of July, the record shows, I examined it and found the super fairly well filled, and considerable of the comb capped. I put a section-case on top of the super, but this was done too late; for on the 13th another swarm emerged. I took off the super, cut out the queen-cells, and added two more section-cases, hoping to secure comb honey; but the season immediately changed, so that only about one case was secured. I extracted about 50 lbs. from this hive—40 from one of the new colonies; 30 from another, and took two-thirds of a case of comb honey from the other; besides, each put in stores enough for the winter.

Now, the point is this: What would any one want of two or more such queens in one hive? I do not know what I'd do with half a dozen of Root's $25.00 queens in one hive. Can you tell? But such queens are just such as I want, and I'll have no other if they can be obtained.

I forgot to say that, at the last cutting of queen-cells, three hatched at the operation, which I used for requeening. They are from the stock of that old queen I have thought so much of, and have tried to perpetuate in my apiary.

Lake Geneva, Wis.

[The Root $25.00 queens are very scarce with us; that is to say, we seldom find one good enough to bring that price. *If* we could get plenty of such queens there would be no need of discussing this plural-queen system, as there would be nothing in it. To go a little further, could we stock a whole apiary with even three or five dollar queens? It *can be* done at considerable labor and expense in weeding out stock below this grade; but how could we *know* the first season, and before the honey-flow, that *any* queen would be a good one? As that does not seem practicable, is it not advisable to run two queens to the hive, and then, if one of them should prove to be of little value, the other, according to the law of chance, would make up for the deficiency of the other? By having two or more queens to the hive we reduce the chance of failure of a whole hive, and at the same time make more sure of getting something for the labor expended.

Then, moreover, if at any time we run short of queens we can draw from a colony that has one to spare. At all events, after the honey-flow the chances are that the colony will cut down its queen force to one.

If we run the yard on the two-queen plan, by all means strive to make the two just as good as if we were rearing only one to the hive. This would give us two queens, one of which ought to be a good one, even if the other were not.

It is not wise just yet to predict the ultimate success and general adoption of the two-queen system. Candidly, we don't know what the future is to be.—Ed.]

## SOME SWISS COMMENTS UPON AMERICAN STATEMENTS.

### A Translation of a Letter from Dr. K. Bruennich.

BY DR. C. C. MILLER.

I have received from Dr. K. Bruennich, the Swiss authority, an interesting letter in which are some comments upon things Swiss and American that I am sure will be of general interest. I'm too poor a German scholar to give a literal translation, but will take the liberty of giving a very free translation, begging the good doctor's pardon if in any way I misinterpret him.

"Americans are apt to depreciate our hives (which are mostly handled from behind instead of above), but unjustly. They forget that the high price of land here forbids spreading out hives of the American pattern, and so we are driven to the use of the pavillion, which allows colonies to be tiered up. This plan is not without advantages. In the pavillion there is the mutual conservation of heat, and practical operations may be carried on under cover, without any fear of robbers—two very important advantages."

Yes, I've no doubt, doctor, that some of our leaders would view things quite differently if they should for a time take up their abode in Switzerland; and possibly a sojourn in this country would also change some Swiss views. There's a good deal in the way one is brought up; a good deal in fashion. For example, in this country we have an outlandishly absurd way of spelling; but when President Roosevelt, who has pretty much his own way in every thing, attempted to spell a few words in a decenter manner, it raised such a hubbub that for once he had to back down and give up to the fashion.

"Referring to GLEANINGS, p 822, I must say that, with all due respect to you, I am not yet convinced that a pure strain of blacks, as we cultivate them here, would not be the best for you, even under *your* conditions."

I wonder upon just exactly what you base that belief, doctor. Perhaps upon the fact that the great majority of Swiss bee-keepers have found that the native blacks in their purity give better results than any other race or mixture of races. But facts all run the other way here. In hundreds and hundreds of cases Italians side by side with the blacks have shown their superiority over the blacks so plainly that there can be no question left; and when I can get 10, 20, or 50 per cent more honey from Italians, or from a cross containing Italian blood, do you blame me for not wanting pure blacks?

I think you Swiss put considerable stress on the matter of *native* stock as being better adapted to the country. Please remember that blacks are no more native than Italians in this country, all bees being imported. Perhaps, too, we Americans are too new a nation to have very much reverence for things old and established. At any rate, the word "imported" has quite a charm for us. I sometimes pay double price for a pound of Swiss cheese, and I suspect that just a little of its superior flavor is due to that magic word "imported." Perhaps it would not be a bad thing to "import" from Switzerland some of the best black stock and see if it might not be an improvement. Almost certainly it would be an improvement over the black stock we have had, if not over the Italian.

Dr. Bruennich wonders that so excellent a journal as GLEANINGS should publish what he does not hesitate to call "blooming nonsense" on p. 831, under the heading "An Improved Strain of Bees." There is a "blend" of three different kinds: "Cyprians for their get-up and get; Carniolans for gentleness and white cappings of comb honey, and Italians for compact brood-nest, non-swarming disposition, and color."

Well, doctor, an ignorant German Swiss like you can not understand such things. It takes those Texans. They say some magic words, and from each variety comes its specially good virtue and none of its faults. Now if *you* should try the thing over in Switzerland, without the magic words, it might turn out something like this: "Cyprians for their vile temper, Carniolans for swarming, and Italians for any bad trait they happen to have."

Seriously, in this country we pay too little attention to theory, and among those of us who have been working the hardest to get crops of honey there is very little known about breeding bees in any thing like a scientific way.

"Page 895 needs a correction, where it is said that Switzerland is the homeland of the leather-colored Italians. These bees never appear across the Alps from Tessin, and so are quite isolated in that canton from Switzerland in general, where we cultivate black bees and will have nothing to do with the yellow bees, which have absolutely not stood the test with us, and are far outstripped by the blacks."

"Among the names of prominent scientific men connected with the bee industry in Switzerland, as given on page 895, Kramer should have taken first rank, who by his colossal labors has accomplished more than all others. He it is who established our apistical stations, sifted and collocated their results; he it is who established our 'beleg-stations,' drone-proof places where virgins are sent for fertilization; and he yearly assembles more than a hundred queen-breeders for a conference regarding matters connected with queen-rearing and improvement of stock. A great mass of valuable discussions and investigations come from his pen. Prof. Burri is no bee-keeper—only a bacteriologist, but a fine one.

"Page 1018 also has its errors. The movable frame was invented by Berlepsch (in some unaccountable manner no biography of Berlepsch occurs in the A B C), next to Huber the most important investigator in the realms of bee culture."

Whatever Berlepsch may or may not have

done—and I fully accord to him great credit —unless I am entirely misinformed, Langstroth invented the movable frame without any knowledge of what was done by Berlepsch, and I think that, in point of time, the invention of Langstroth was prior to that of Berlepsch. And from whatever source bee-keepers across the water may have first got the movable frame, it is a fact that I think you ought to be willing to recognize, *that American bee-keepers got the movable frame in its present usable form, not indirectly but directly from Langstroth.* From personal acquaintance with Langstroth, I am convinced that, if he had had the slightest hint of any thing done by Berlepsch looking toward the invention of the movable frame, he would have been the first man in the world to acknowledge it.

"On page 1018 the first grafting method of rearing queens is given at about 1874. More than 100 years ago Huber transferred larvæ from one cell to another. The works of Huber should be read by every bee-keeper, containing as they do a fullness of interesting experiments almost totally forgotten, which deserve again to be brought to light.

"The last remark of W. K. M., page 1018, again shows plainly the attitude of certain Americans, from whom you are excepted."

Certainly we ought to be a little slow about calling a people slow from whom we have received so much that is valuable, and least of all the Germans in Switzerland, who are in the front line in more than one regard. When it comes to the matter of scientific queen-rearing, Switzerland leads the world, and in their presence we are as babes before giants. But we have a young man in Washington, Dr. E. F. Phillips, of whom we are very proud, and we are looking to him to give us a start on the road to overtake the Swiss, so that queen-rearing may rest upon a more scientific basis.

The time has come when I am glad to say that the peoples on the two sides of the big pond are beginning to stop making faces at each other, and trying to get all the mutual help they can; and it is to be hoped, Dr. Bruennich, that you will keep whacking away whenever you see any of our faults to whack at, and at least some of us will take it in good part, with the cordial feeling "We be brethren." *Ja, wir sind Brueder.*

Marengo, Ill.

[I shall attempt to answer in as few words as possible. Southern Switzerland, particularly the region of Bellinzona, is certainly the place from which many leather-colored Italians came. The old files of the *American Bee Journal* (see advertising pages) bear abundant proof of this. For example see last page of the May issue, 1872, *A. B. J.*; also page 231 for 1873 of the same journal, an article by the late Charles Dadant. Moreover, I quoted figures quite recently to show the Swiss are by no means unanimous in favoring the native black bee. By their own figures (see GLEANINGS, page 1135, Sept. 1), they regard hybrids very highly, and a number prefer Italians (Swiss Italians).

As to the assertion that Berlepsch invented the movable frame, there is no ground for it. He brought out his hanging frame in 1855, four years *after* Langstroth. Huber invented movable-comb frames in 1789, before Berlepsch was born. At the present time the Germans are rapidly adopting the Langstroth system. They are now imitating our hives to the smallest detail, long after the British, French, Belgian, Italian, Spanish, Australian, Russian, and American bee-keepers. It is true, Huber did transpose bee larvæ, but he was no German; on the contrary, they were about the last to accept his teachings. If we owe any thing to Berlepsch we should like to know what it is. The A B C does not contain his biography, it is true; but it also does not contain any thing about Swammerdam or Reaumur—two giants whose names will live long after Berlepsch is forgotten. When the Germans come to this country, in a few years they soon adopt American ways; and I doubt not they greatly excel the Germans left in the fatherland. Look at Wagner, Grimm, Stachelhausen, Hoffman, and Greiner. They joined on German "theory" and American inventiveness.

I admit too many of our "scientists" have turned out to be "nature fakirs." Europe is not altogether free from the same trouble. Science is popular now, and all sorts of people masquerade as "scientists." America has no monopoly of this either. This is the reason why our bee-keepers are so skeptical about "theory." They do not know when they meet a real *savant.* We are not alone. France is not one whit behind Germany in scientific research, and yet it does not accept German ideas any more than we do. Neither does England.

Burri is undoubtedly a great investigator in his chosen field, and the University of Zurich is second to none. More than a year ago I sent to President Kramer for his photo for a write-up, but thus far we have not had the opportunity to place him before a GLEANINGS audience. I agree with you we owe all our progress to scientific men, and we Americans worship money-making "practical" men far too much. We are not alone in that either.—W. K. M.]

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## TRANSPARENT PAPER WRAPPERS FOR SECTIONS OF COMB HONEY.

**Transparent Paper Bags Suggested; These to be Made Just the Size of the Section; the Opinion of a Prominent Commission Man on the Subject.**

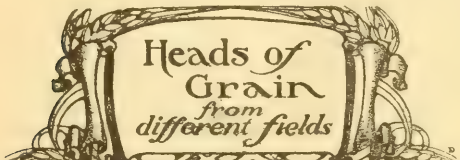
BY R. A. BURNETT.

*Mr. Root:*—We have just read Mr. Sackett's article in your issue of Dec. 1, also your comments thereon. We are inclined to agree with both your conclusions and his. The wood strips in the bottom of cases, when fastened in and made to fit exactly with the sections, help very much where there is only a little leakage from unsealed cells; but where

one or more combs are jarred from the wood they are of very little service. This idea would be practically the carton, with the advantage of being transparent (which is a most desirable thing). The extra cost of preparing the case, such as the no-drip case, would, in our opinion, offset the cost of papering the sections after the fashion described, as they would then be put in a perfectly plain case; and if even half of the sections should be broken from the frames the remainder would be uninjured where the paper itself was not broken. It occurs to us that the paper could be made as a bag is made, and the sections slipped into them and then secured with mucilage or some form of paste.

To-day we were going through some honey that came in carriers, containing eight cases. Some of the comb had broken out of the frames, and had leaked sufficiently to fill more than the space between the strips, thus necessitating new papers in the bottom where the strips could be removed. In this instance the nails used were cleated, and this made it difficult and in some instances impossible to put the case again in good order. It would seem as though before another season different experiments could be made with this idea, and a heavier weight of paper secured than has been tried. At any rate, it is one of the devices that appeal very strongly to us, and we hope by your January or February issues sufficient progress will have been made with the idea already demonstrated as practical, that will insure its coming into use next season with those who have to order supplies.

Chicago, Ill.




### WHITE ITALIAN CLOVER TRIED TWO YEARS AGO, AND ALMOST A FAILURE BOTH FOR HAY AND HONEY.

Two years ago I bought some seed of white-blooming and some of the old standard kind of crimson clover from the firm mentioned on page 1385, and sowed them side by side at the same time, and on land prepared the same way. The regular crimson clover made a good crop.

The white-blooming was so late in starting in the spring that the weeds got ahead of it, and it was almost a failure. I did not feel that I had any ground of complaint against the introducers, as at that time about all the difference they claimed for it was that it was later and had white blossoms. Since reading the article by W. K. Morrison I have looked up their latest catalog and am quite surprised at the claims they are making for it.

As to its honey-producing qualities, I can not remember that I took any notice of it. I have never known bees to fail to work the regular kind very freely as much as or more than any plant I know.

Barboursville, Va. A. R. LOCKHART.

### THE BEST TIME TO REQUEEN; J. E. HAND RECONSIDERS.

Upon further experimenting with a view to determine when is the best time to requeen an apiary I am led to change my views as expressed in my article on page 1586, Dec. 15; and with my present light upon the subject I now consider the latter part of the season, and after the close of the honey-flow from basswood, which, in my location, is about July 20, to be the best time to requeen an apiary. One reason for this is we have found that queens reared at this time will keep up brood-rearing late in the season, and will have stronger colonies the next spring; and the other reason is, that the time of our cell-building colonies is not worth any thing at this time, and therefore it costs less to rear queens, since we are out only a very little labor. J. E. HAND.

Birmingham, Ohio.

### ACID FOR DISINFECTING FOUL-BROODY COMBS.

One of your readers at this place writes to ask if it is not practical to dip foul-broody combs, where it is dried to a scale, or nearly so, into a bath of diluted acid or other liquid disinfectant. He adds that, if he is correctly informed, a weak kerosene emulsion will effectually kill the San José scale, and that gasoline is sure death to germs of almost any kind; and as wax is in no way injured by acid he does not know why some agent of this kind could not be employed to aid in the battle with foul brood. Will some accommodating expert grasp a foul-brood germ by the hind legs and jam his head into a bottle of muriatic acid, then examine him in his microscope, and give us the result?

Jamul, Cal. BEN BIDDLE.

[We hardly think the acid bath for diseased combs would be effective. Better by far melt them up.—ED.]

### THE RAT PROBLEM.

A year ago we moved on to this place, and it was the worst-infested place one can imagine, and has been for the last 24 years that we have been acquainted with it. We were fully determined to get rid of the rats. We got four different kinds of traps, and then tried every thing we could hear of; and when you said "rat biscuit" my husband laid in a supply at once; but they were like all the rest—just seemed to act like a tonic, and still the rats came. At last one of our hired boys told me he had seen a sure cure for rats, in a paper. I told him to tell me quick, as we were at the point of collapse. He said, pour syrup, or any thing the rats are fond of, on to a board and sprinkle with

dry concentrated lye. As I had found the rats preferred nice firm ripe tomatoes to any thing else I had on hand, I sliced up several about ½ inch thick, and placed in different parts of the house. In the morning they had eaten all I put out. The second night they ate half as much. The third night only a few pieces were gone. The fourth night they did not touch the tomatoes nor any thing else, and we have not seen or heard of a rat or mouse in the house since, about six weeks ago. A couple of weeks afterward Mr. Shank said there were as many as ever in his barn and granary, and he thought I had only driven them out to the corn; so I fixed the tomatoes the same as before, with the same effect. The third night was the last. We think it is truly wonderful to be without the horrible things, so we just concluded to let you tell others.

Just sprinkle the dry concentrated lye (I use the Banner, as it is so handy) on the top of the tomatoes. Other articles may do as well. MRS. L. B. SHANK.

Jenny Lind, Cal.

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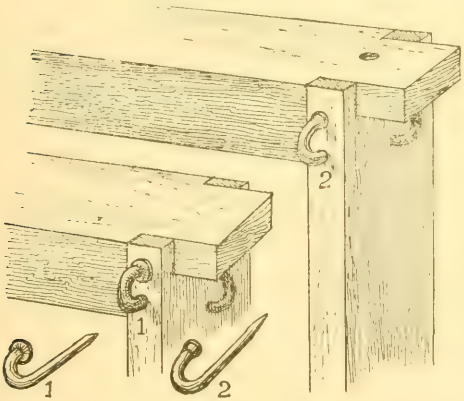
BENT NAILS FOR FRAME-SPACERS.

What do you think of this idea for spacing-nails? L. E. SCHERER.

Jersey Shore, Pa., May 29.




[The arrangement here shown, if properly applied, is excellent; but in the first place it is difficult to bend the nails, and, in the second place, it would be more difficult still to bend them all with *exactly the same curve*, for it would be important to have the bee-spaces alike. In the third place, one would have to bore a hole in order to drive them into the frame, for the reason that the hammer-head would strike one side of the line of penetration of the wood, bending the nail over. Taking it all in all, the ordinary staple is much easier to insert, and far cheaper.—ED.]

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MEETING OF THE MASSACHUSETTS SOCIETY OF BEE-KEEPERS.

The Massachusetts Society of Bee-keepers held its second meeting in the Ford Building, Ashburton Place, Saturday evening, December 7. President Farmer president There were thirty present on this occasion, and all seemed to enjoy hearing the different speakers. After the routine business, the meeting was given into the hands of the members.

Mr. Barret, of Hyde Park, spoke first on the duty of the bee to the flower in the transferring of the pollen, referring especially to such plants as have male and female flowers on different individuals. Mr. J. S. Chase, of Malden, the veteran fruit-grower, followed in the same line, speaking particularly of the work of the bees with reference to grapes, of which fruit he has been a grower for thirty-five years. He laid stress upon the fact that species do not come true from seed, and illustrated his point by his own experience with seeds of Delaware grapes from which he had obtained many varieties of grapes of all colors, but never a Delaware. His fruit has several times taken the first prize at the Massachusetts Horticultural Society.

Mr. Chase showed a model of a storm-door for his hives for winter, in which all felt great interest. Mr. Chase spoke of his new bee-feeder that consisted of a box 25 inches by 15, and 5 inches high, made to cover the frames. A piece of glass was fitted over this diagonally from the bottom of one edge to the top of the opposite side. Over this was the cushion. Thus he was enabled to lift the cushion and observe the condition of his feeder without cooling off the bees.

Mr. Adams, of Byfield, Mass., and Mr. Richardson, of W. Medford, two vice-presidents, were chosen at this meeting; then after an informal recess, during which we all enjoyed ice cream and cake furnished by our president, F. H. Farmer, Mr. Hawkins, of Everett, described the Atwater method of transferring by use of a tube from one hive to another as given in the *Bee-keepers' Review*.

Mr. Richardson also told of his experience of four years.

Our next regular meeting will be the first Saturday in January, 1908, in the afternoon. As there are only four more meetings we hope for a good attendance.

Belmont, Mass. X. A. REED.

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CAGE THE QUEENS WHEN SHAKING BEES ON TO NEW COMBS.

It has not been clearly stated in the journals that it is necessary to cage the queen when the bees are shaken on to new combs. One of our bee-men of Tulare, a Mr. Gambel, had 78 colonies shaken on to frames of foundation for foul brood, and none of the queens were caged; 75 out of the 78 swarmed, and went to the woods.

Tulare, Cal. T. J. BARRINGER

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COVERING CRACKS IN HIVE-COVERS.

I use muslin bats for putting over joints on covers for hives. Get heavy bleached muslin and cut the length needed, and 3 inches wide. Cut in lengths long enough to lap over the edges; lay this in paint, and, when put on, give a good coat of paint. I

have used this kind for over 15 years, and would have no other. Try this and be convinced. C. H. McFADDEN.
Clarksburg, Mo.

[One or two others of our correspondents have described this same thing and pronounced it good; so we must conclude that this method of protecting hive-covers is not only practicable but easy of application.—ED.]

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MORE THAN ONE QUEEN WINTERED IN THE SAME HIVE.

*Friend Root:*—In regard to plural queens wintering in the same hive, perhaps I can throw a little light upon the subject without waiting until next spring. While I am not a plural-queen bee-keeper, for the past three winters I have had two queens winter in one hive.

I always clip my queens in the spring, long before there are any queens hatched or drones to fertilize them if queens were hatched.

In the spring of 1905, when clipping, I found a clipped queen and an unclipped queen in the same hive (apparently mother and daughter), and both were busily depositing eggs on the same comb and on the same side of it. I left the young one without clipping, and opened the hive frequently, only to find both busily engaged as before; but along about the middle of the summer I could see the old one was failing, and continued to grow weaker, and finally disappeared. Then I clipped the young one. This was at an outyard.

The spring of 1906 I was clipping the home yard the latter part of April, and I found two unclipped queens in one hive (apparently sisters, as they looked exactly alike), both busily engaged in depositing eggs on one comb, though on opposite sides. I clipped both and removed one to supersede an old one. Both did good work all summer, and again the past summer, and I think they are both still alive.

Last spring, when clipping in the home yard I found one clipped and one unclipped in one hive—apparently mother and daughter—both depositing eggs; but the old one seemed somewhat feeble, and did not live to exceed a month. Some skeptic may say this was accidental, and the young queen came from some other hive after they were removed from the cellar; but, not so; and, even were it probable, how would they explain or account for the two *young* ones in the same hive? I had no deserting or swarming out, and cases were exactly as stated. I mention this merely to refute any such argument as might be advanced. ELIAS FOX.
Hillsboro, Wis.

[The cases that you cite, of mother and daughter both doing service at the same time in a hive, are so common as to excite hardly even a passing comment. It would not be at all strange if a pair of such would get along peaceably in the same hive over winter; but it is remarkable that two daughters after the old queen disappeared, while they were virgins, should not have had a battle royal, with the result that one of them was killed. Apparently in the case given there was no conflict, but, rather, they both went to work laying eggs, and would probably have continued to do so as long as the colony prospered. But during a dearth of honey, probably one of them would disappear if not removed by the apiarist.—ED.]

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BEES CHOOSE A LOCATION BEFORE SWARMING.

I am pleased with GLEANINGS, and do not know how I could do without it. In the Dec. 1st issue, page 1507, is a statement by Mr. G. C. Greiner which seems to me the most correct of any I have yet read concerning runaway swarms. I have known a prime swarm to issue, leave without clustering, and enter a tree. The owner, being a swift runner, followed the swarm to the tree, about half a mile distant, and cut the tree. In less than two hours after, bees entered. He found combs six or eight inches long. Did the bees not prepare a home and build some comb? They were new, and had just been built. The old queen as a rule gives warning by a piping the same as a young virgin does in after-swarms.
Carbon Black, Pa. WM. F. EBERT.

[Swarms will very often leave without first clustering. It may be in such cases that the scouts have located the tree, and lead the swarm to it direct.—ED.]

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CAUCASIANS NOT AS GOOD HONEY-GATHERERS AS THE ITALIANS.

I have two colonies of Caucasians from Washington that seem so energetic in plastering with propolis every opening about the fences, sections, and frames, that they do not gather as much honey as the Italians and hybrids. I now have enough Caucasians. I will Italianize my apiary a little later.
Pickel, Tenn. F. R. C. CAMPBELL.

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KING BIRDS.

Mr. Doolittle, in the Jan. 15th number, talks of the king birds. His experience tallies with mine, except that I never saw them bother the bees only when there was a drone flight on, and so far as I could see (and I have watched pretty closely) they caught only drones or queens. A shotgun is the only effectual remedy that I know of.
Sheridan, Can. W. I. DEVLIN.

[We have seen them actually catch *bees*.—ED.]

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DUCKS IN AN APIARY.

How would it do to keep ducks in the apiary for keeping the grass down? Would they eat the bees? B. F. MILLER.
Memphis, Tenn.

[We hardly think so, as we had ducks in our bee-yard all last season, and experienced no trouble.—ED.]

The wrath of man shall praise thee. — PSALM 76: 10.

On page 1216, Sept. 15, I quoted from the Pabst beer advertisements that the United States Department of Agriculture "Officially declares beer is the purest and best of all foods and drinks," and I lamented that the Department of Agriculture declared we had no laws to prevent the use of a statement that it did not make. As this same advertisement was accepted by a great number of papers I feared many good people might be misled by it. Well, their statement has done good after all in bringing out strong protests and denials from both the clergy and able physicians and surgeons. See the following:

Dr. S. H. Burgen, a distinguished surgeon of very long practice in Toledo, O., says: "Beer-drinkers are absolutely the most dangerous class of subjects a surgeon can operate on. Insignificant scratches are liable to develop a long train of dangerous troubles. Sometimes delirium tremens results from a small hurt. It is dangerous for a beer-drinker even to cut his finger. All surgeons hesitate to perform operations on a beer-drinker that they would undertake with the greatest confidence on any one else.

Now read this also, from the Cleveland *Plain Dealer:*

Temperate drinking, and the moderate use of beer, especially, were strongly condemned last night by Rev. Charles Bayard Mitchell, pastor of the First Methodist Church, in a sermon on "The Devil's Popular Bait."

"Nothing is more harmful to good health," he said, "than the so-called temperate use of beer. It is the most dangerous form of intemperance. A prominent physician affirms that forty-nine out of fifty cases of Bright's disease under his care were cases of beer-drinkers.

"The Northwestern Life Insurance Co., with its home office in Milwaukee, whose beer has made it famous, will not grant a policy to the lager-beer brewers, their clerks, book-keepers, or anybody else employed about the factory. They say, 'Our statistics show that our business has been injured by the shortened lives of those who drink beer.'

"It is known to all intelligent men that beer-drinking clogs up the liver, rots the kidneys, decays the heart and arteries, stupefies the brain, chokes the lungs, and loads the body down with dropsical fat.

"Intemperance is the strongest besetting sin of young men to-day. More young men are being ruined in body, mind, and soul by this insidious evil than by any other agency of hell. This is due to the fact that the business is so profitable.

"Intemperance stands in the way of your business prospects. It will ruin you socially. It will destroy your character. If you haven't touched liquor, don't. There is no such thing as moderate drinking."

After reading the above two statements, what do you think of the Pabst people, and their statements in regard to their various concoctions besides their "famous" beer?

WHAT HAVE YOU TO BE THANKFUL FOR?

In the issue of the *Sunday School Times* just before Thanksgiving day, the editor gave the replies of *thirty-one* men and women of national reputation to the question, "What have *you* to be thankful for?" I should like to give a lot of them, but can take space for only one, which see above:

From *Booker T. Washington*, LL.D., Principal of Tuskegee Normal and Industrial Institute.

First, for the opportunity to work. Work is the greatest blessing that a good Providence has conferred upon the human race. Any one who has learned to love work for its own sake can not fail to be supremely happy. The man who has something to do is to be envied; the man who has nothing to do is to be pitied. Again, for the opportunity of exerting some influence in the world for the uplift of humanity. Thirdly, I am thankful for a serious and great problem to engage my attention and my activities.

Perhaps the above does not strike everybody as it does my particular self, but I believe it to be true that, during all my life thus far, I am happy only when I am busy. It is always a punishment for me to be obliged to sit still and wait for something or for somebody. Of course, I like to rest when I am tired; but I can't get a real good *restful* rest unless I have something to read—that is, something elevating and profitable; and I also want sleep when my physical machinery gives notice it is not in shape to do its best; and I dearly love the sleep that puts me in "good repair" for work once more. When I feel unable to do hard work I enjoy getting hold of my light hoe or a hammer and saw —any thing to "keep busy," for Satan always *does* "find some mischief for idle hands to do."

TURNING ON THE LIGHT.

I sincerely hope some of you have been induced to subscribe for the *Sunday School Times* just because of the frequent extracts I make from it. Here is another:

There is no answering the straight answer that President Roosevelt makes to those who, writhing in the toils their own hands have wrought, savagely accuse him of causing their disaster, when he says, "I was responsible for turning on the light, but I was not responsible for what the light revealed." Let us remember this in all our choices. We, and we alone, are responsible for the wretched harvest that is sure to follow the seed-sowing of sin.

I believe it is true that quite a few, and some very good people, have felt that our President has sometimes been a little too abrupt; that he might, perhaps, have averted the panic, and "stringency," that have been so much discussed, if he had let on the light a little more gradually; and this reminds me of reading about a father who came into the parlor one evening and suddenly turned on the electric lights, and found his daughter and a young man both occupying the same chair. Was it the father's duty, do you suggest, to find out if any one was in the room before he went in thus suddenly? *Not at all.* Nothing should ever be going on, in *any* home, that would cause embarrassment by turning on the lights; and, furthermore, nothing should be going on in our *whole great nation* that would bring consternation to bankers, politicians, or anybody else, if our President should take a sudden notion to turn on even the *search-light.*

THE $10.00 SECRET AND THE $1.00 SECRET FOR SELECTING THE LAYING HENS.

I have succeeded in getting both the above secrets without signing any contract not to divulge, and without giving any promise

whatever. It is true I did have some correspondence with Walter Hogan, and I sent him $10.00, telling him I could not sign any contract. He returned the money, told me of his misfortunes in disposing of his invention, etc., and said he would like to have me test his discovery. I then gave him my promise not to divulge any thing he might submit to me. He has, however, at this date, Dec. 18, never submitted any thing; but one of our subscribers sent me some time ago Hogan's seven-page ($10.00) pamphlet which he purchased for *one* dollar, and that, too, without any promise to keep the secret. I have given you the above particulars lest any one may accuse me of getting the "secrets" by any dishonorable means. I procured the $1.00 "Potter secret of selecting the laying hens" by simply sending $1.00 for the little pamphlet of 32 pages. I did not sign any contract not to "divulge," but *they* wrote my name in the contract with a *typewriter*. Had they put my name in with pen and ink it would have been forgery.

Now, friends, what do you think of this whole business — taking $10.00 for a seven-page printed pamphlet, and $1.00 for a 32-page printed pamphlet, and extorting a "promise not to tell"? According to their printed claims they have taken *hundreds* if not *thousands* of dollars from poor hard-working poultry men (and *women*), for these celebrated secrets. Is it honorable, and is it in keeping with the spirit of the times, with the usual mode, let us say, of giving and receiving knowledge?

### THE GREAT SECRETS.

I say secrets, for both are one and the same thing, and I have no means of knowing who is the real inventor — Hogan or the Potter folks. More than 50 years ago, when a boy, I discovered I could tell by taking my "pet biddies" off the roost, the night before, which hens would lay an egg next day, by placing my fingers between the pelvic bones. The egg is often, if not always, so near perfect that it can be plainly felt, and these pelvic bones are at such times more or less widely separated. All Hogan or Potter claims to have discovered is that all great layers have space enough between these pelvic bones to allow three fingers to drop into the space.

All moderate layers will permit only two fingers; and where there is space for only one finger, the hen or pullet is not laying at all, and sometimes has never laid an egg, and probably never will. In a flock of 70 hens, three or four were found, we are told, that never *had* and *never would* lay an egg. The stupid farmer (and, very likely, poultryman, that *thought* he was up-to-date) bought grain for such hens, and kept them year after year, while he just *threw* away his money, or his corn and wheat, which amounts to the same thing. One large establishment in New York State, that I visited, tested their hens by putting four in a pen. If they got four eggs a day, of course all four were laying hens. Trap-nests sort out the consumers and producers, to be sure, and make a *sure thing* of it; but Hogan and Potter claim their secret does in a few hours what would require days and weeks of hard work. No doubt these inventions are valuable; but why in the world have we not, among all our poultry-journals, one with enough enterprise to get hold of this whole business, and discuss it openly, instead of letting these fellows parade and "peddle" their secrets as they have been doing year after year since 1904? There is a lot of other similar work *still* going on in the poultry business; for instance, asking enough money to buy a good-sized poultry *book*, for something printed on a slip of paper but little larger than a postal, or possibly a two or four page leaflet.

The beautiful catalogs now being sent out by the manufacturers of incubators and brooders contain a vast deal more information, free of charge, than you get from these chaps that take fifty cents or a dollar for a printed leaflet that costs them only a fraction of a cent. Of course, it is right and proper to get something for your inventions; but when you ask and take a dollar, give in return a decent-sized book that gives a lot of other valuable information.

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### CHICKENS WITHOUT A BROODER; NOT ONLY IN FLORIDA BUT AWAY UP IN NEW HAMPSHIRE.

*Mr. A. I. Root:*—I have read your Home paper in GLEANINGS for March 15, and I am going to offer you a suggestion from my long experience with poultry. I have raised hundreds of chickens with no other brooder than a common stone jug filled with hot water. I put the jug in an ordinary shoe-case, which I can buy for 10 cents here; put sand in the bottom of the box, and cover over the box a thickness of burlap, usually a bran-sack ripped open. Such a brooder will mother about 25 to 30 chicks. Sometimes I wrap burlap or old flannel around the jug and use the water a little hotter if the night is cold.

Our incubator holds 360 eggs, and this is the only brooder I ever use. I think it would beat a flatiron, even in Osprey, Fla. MRS. SUSIE A. HYDE.

Canaan, N. H.

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### MY STRAIN OF WHITE LEGHORNS ¼ GAME.

*Friend Root:*—You will notice (in the lot of poultry we are sending you) one old hen clucking. She *would* slip into the house and lay behind the front door; then she wanted to sit, and begged *so hard* that "Em" says, "Old lady, if you *will* sit, I want you to spread yourself," and gave her *20* eggs, and she hatched *20 chicks*, 19 white. They are about like half-grown quails, rather small to wean. I send you 21 young hens and one young rooster besides the six old ones.

Osprey, Tex., Nov. 20. I. T. SHUMARD.

The above report is from friend Shumard, as he sent my chickens up here to Braidentown. If they continue to hatch 20 chickens from 20 eggs I shall be very glad.

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### A REMEDY FOR "GRIP;" GOD'S MEDICINES, ETC.

*Mr. A. I. Root:*—I have often thought of writing you a personal letter when reading your Home talks, as I enjoy them so much.

I have all my life worked outdoors, and have slept in one of those log cabins where it was ventilated in spite of us. I have had very small doctor's bills. I believe ten dollars would pay every particle of doctor and drug bills for the past ten years. I generally trap in winter, and have often waded the stream when the ground was covered with snow. It's better for grip than hot tea or ginger stew and whisky.

Rocky Mount, Va. J. B. OVERFELT.

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## SPECIAL PRICES ON ROOT'S GOODS, Such as have Never been Offered Before.

**In place of a New Year's gift to our friends and patrons we are going to offer something special which we have hitherto never been able to offer.**

We have an immense stock—a warehouse 40x250 feet filled with The A. I. Root Co.'s make of bee-keepers' supplies of every description, and on many articles we are overstocked. A number of articles have advanced in price; but we bought this stock before the advance, and are going to offer some, on which we are overstocked, at remarkably low prices for cash with order. This offer will be good only until January 15, or so long as the stock lasts. The following is a list of the special prices. At the left you will find the designation as given in our catalog. Orders must be given in lots of 5, 10, or multiples thereof.

2P 8-frame supers with plain section-holders, fences, bevel cleats, and springs for 4¼-in. plain sections, 33c each.
2P 10-frame with plain section-holders, fences bevel cleats and springs for 4¼-in. plain sections, 37c each.
4P 8-frame plain section-holders, fences, bevel cleats, and springs with 4¼-in. plain sections and foundation starters, 49c each.
4P 10-frame shallow supers with plain section-holders, bevel cleats and springs with 4¼-in., 54c each.
2M 8 frame Danz. supers with hanger-cleats, Danz. section-holders, M fences, springs cleats, and wedges for 4x5-in. plain sections, at 46c each.
2M 10-frame Danz. supers with hanger-cleats, Danz. section-holders, M fences, springs, cleats, and wedges for 4x5-in plain sections, at 49c each
Shallow frames for supers holding 4¼x4¼-in., $1.60 per 100.
Shallow frames 5⅜-in., for Ideal supers holding 4x5 sections, at $1.60 per 100.
2I 8-frame deep or Ideal supers with slat and T fences, 33c each.
4L 8-frame deep or Ideal super, with sections and foundation starters, 49c.
4S 8-frame shallow supers with beeway sections, 4¼x4¼x1⅞, and foundation-starters, 49c each.
Danzenbaker brood-frames, $2 25 per 100
2S 8-frame supers with section-holders, separators, followers, and springs, for 4¼-in. beeway sections, 33c each.
2S 10-frame supers with section-holders, separators, followers, and spring, for 4¼-in. beeway sections, 37c each
2L 10 frame deep supers with slats and I fences, at 37c.
4S 10-frame shallow supers with beeway sections 4¼x4¼x1⅞, and foundation starters, 54c each.
Dadant uncapping-cans, $7.55 each.
No. 4 Novice extractors, $7.55 each.
German wax-press, $11.00 each.
2I 10-frame deep or Ideal supers, with slats and I fences, 37c each.
4M 10-frame supers with hanger-cleats, Danz. section-holders, M fences, springs, cleats, wedges, sections, and foundation starters, 66c each.
10-frame empty Danz. bodies, at 31c each.
Sections, No. 2 plain, 3⅝x5x1½ in., $3.35 per M.
Sections, No. 2 plain, 4x5x1½ in., $3 25 per M.
Sections, No. 1 plain, 4x5x1½ in., $4.00 per M.
J5 10-frame Jumbo bodies, with frames, 71c each.
Alley queen and drone trap, 40c each.
12-in., 4 row shipping-cases with 3-in. glass, $17 per 100.
9¼-in., 4-row shipping-cases with 3-in. glass, at $15 per 100.
10-in., 2-row shipping-cases with 3-in. glass, at $9.35 per 100.
6¼-in., 3-row shipping-cases with 3-in. glass, at $9.80 per 100.
7⅛-in., 3-row shipping-cases with 3 in. glass, at $10.70 per 100.
Hubbard section-presses, $2.00 each.
No. 17 Cowan reversible extractor, $11.75 each.
A B C of Bee Culture, 1905 edition, by express or freight, 85c each; same by mail, $1 10.
C 10-frame combination bottom-board with hive-stand, 23c each.
C 8-frame combination bottom-board with hive-stand, 21c each.
Besides the above we offer second-hand hives and supers taken as pay from a bee-keeper who overbought, most of the supers having been set on the hives only a short time. All are well painted, clean, and in good condition.
8 10-frame shallow supers with frames nailed and painted, 40c each.
AE5 10-frame one-story hives with body, bottom-boards, covers, and frames, nailed and painted, $1.10.

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We want to secure a live hustling representative in every county in Texas, where we are not now represented. We prefer a bee-keeper centrally located, and one able to pay cash down for the goods he will order and carry in stock. To those who mean business we offer good inducements.

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The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

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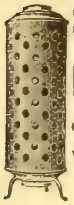

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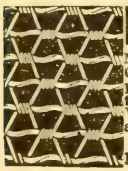

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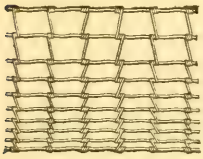

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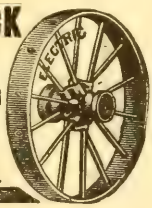


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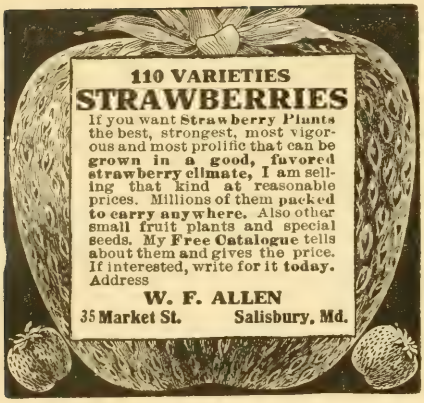


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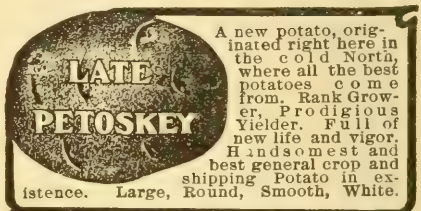


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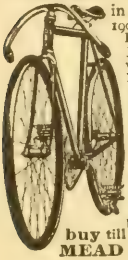

in each town to ride and exhibit sample 1908 model. *Write for Special Offer.*

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We ***Ship On Approval*** *without a cent deposit, pay the freight* and allow
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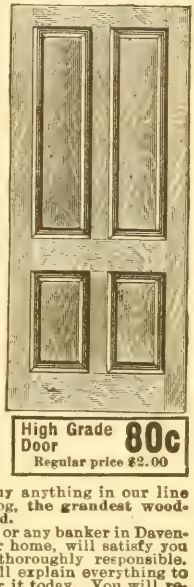

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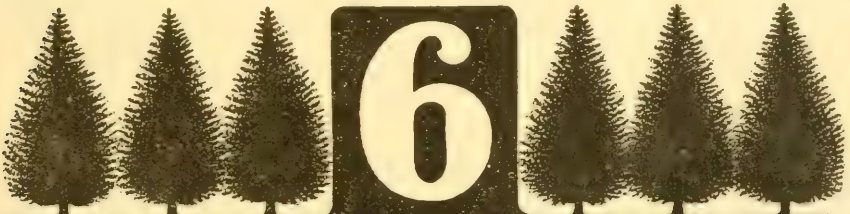


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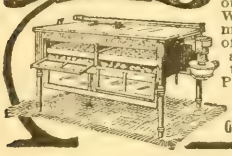

profits are greatest for the man who markets his chickens early. Do not be satisfied with old, easy going methods. Get the best equipment—produce the best and make the most money. Write for our new book "Incubator Whys" telling why our machines turn 90 per cent of the eggs into chickens and why we can do better for you on prices. Please say whether interested in beginners' outfit or large machines.

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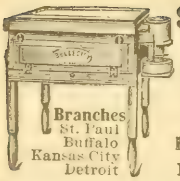


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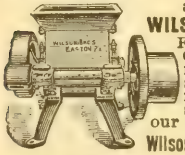

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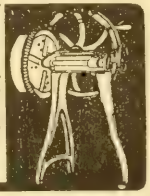

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**W. H. Laws says,** If there is a queen-breeder who can boast of better stock let him trot out the proof. Testimonials enough to fill this book. Will give you only one. Mr. J. C. King, Washington, D. C., writes, "For two years I have had one of your queens in my apiary. Each season she has given me over 200 lbs. comb honey; last season she actually stored while other colonies starved. I have over twenty strains in my three apiaries, but yours is the best."
Now is the time to get a fine breeding queen; stock up this fall and double your crop of honey the coming season. Single queen, $1.00; 6 for $5.00. Extra select breeders, $5.00. Safe arrival and satisfaction guaranteed
**W H LAWS, Beeville, Bee Co., Texas.**

# PORTER BEE-ESCAPES

**HIVE ESCAPE**

When taking off surplus this is the greatest saving device. It does away with the shaking of the heavy supers, the cruelty of excessive smoking which causes the bees to uncap their honey and start robbing. You can as well afford to be without a smoker as without the Porter Bee-escape.
PRICES—Each, 20c; dozen, $2 25; postpaid. With board, 35c; 10, $3.25; by express or freight.

**HOUSE ESCAPE**

To be used over the doors and windows in the extracting-house, or any place you wish to clear of bees. Some bee-keepers make a practice of taking off the filled supers and stacking seven or eight in a pile. The Porter Honey-house mounted on a board makes the best kind of escape.
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# How to Keep Bees

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228 pages. 32 pages of illustrations.

A charmingly written manual describing clearly and in detail the outfit, first steps, and methods. The author's well-known literary ability has combined with her enthusiasm for a subject to produce a very unusual volume. It is a handbook for those who keep bees for happiness and honey, and incidentally for money. It serves as well as an introduction to the more extended manuals already in the field. "Finally with all due deference to the authors of the excellent books on bee culture which we have already, my opinion is that this new book, 'How to Keep Bees,' is the best one for a beginner, or one who does not wish or expect to keep more than a dozen colonies, that has yet come before the world."—*A. I. Root, in Gleanings, July 1, 1906.*

Chap. 1, "Why Keep Bees," urges honey, perhaps money, recreation, love of nature study, and the need of bees in "a perfect garden," as good reasons for keeping bees. The second chapter tells "how to begin" in a small way, and we may get all the necessary detailed information for management from later chapters, arranged in order of demand for information.

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# "Root Quality"

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Gentlemen,

I have just finished unpacking the last box of supplies and must say they are very satisfactory. The frames especially are extra fine, and I am just wondering how I was so foolish as buy the thousands I already have from that other firm. After seeing yours I have made up my mind that I would much rather buy yours than take theirs for a gift.
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Oak Park
Ill.

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For full particulars regarding prices, stocks carried, or any other matter relating thereto, address the Root agents, branch offices, or the manufacturers.

**THE A. I. ROOT COMPANY, MEDINA, OHIO**

## Classified Advertisements.

Notices will be inserted in these classified columns at 20 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Sheet-metal Stamping, Dies, etc.

We are prepared to do large or small jobs of sheet-metal stamping at reasonable rates. Contracts for monthly deliveries solicited. Special dies made to order. Write for prices, stating quantities, time of delivery required, and send samples or drawings of the articles and any other particulars.
THE A. I. ROOT CO., Medina, O.

## Wanted, Situations.

WANTED.—Position as apiarist for the season of 1908. Over 30 years' experience.
M. W. SHEPHERD, Wakeman, O.

## Help Wanted.

WANTED.—At once; young man of some experience with bees. To one who gives satisfaction we offer steady work with chance for advancement.
THE ROCKY MOUNTAIN BEE CO., Berthoud, Col.

WANTED.—Young man of good habits to work in apiary in season and on ranch the rest of time; steady work to the right party; state age, experience, and wages expected. CHAS. ADAMS, R.F.D.4, Greeley, Col.

WANTED.—Three up-to-date middle-aged bee-men for Nevada; two practical middle-aged men for California, and four helpers, young men who know something about bees and apiary work and are willing to learn more. Write me at once for details.
C. I. GRAHAM, Caruthers, Fresno Co., Cal.

## For Sale.

FOR SALE.—Opaline honey-jars, all kinds; send for price list. HAROLD E. SHORE, Germantown, Pa.

FOR SALE.—Homestead farm crops in their season, consisting of honey, grapes, pears, apples, etc.
C. J. BALDRIDGE, Kendaia, Seneca County, N. Y.

FOR SALE.—Printing of all kinds—especially for bee-keepers and poultrymen. Samples free.
J. B. UNDERWOOD, Deer Lick, Ky.

FOR SALE.—Beautiful long-haired Angora and Persian kittens, some white and other colors. Prices low. Stamp for description.
MRS. J. F. SKEES, Marion, Ohio.

FOR SALE.—Special sale of half a million of best Wisconsin sections; thousands of shipping-cases; big discounts on all supplies till February 1. Seeds of honey-plants. Write at once. H.S.DUBY, St.Anne,Ill.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—One Humphrey bone-cutter, good as new, cost $12.50; price $9.00. One Chas. Cypher's 150-egg Model incubator, bought new last season; price $16.50. HARLEY CONDRA, Seymour, Iowa.

FOR SALE OR EXCHANGE.—One improved Reliable 200-egg incubator, one McCormick four-roll corn husker and shredder. Will exchange for bees, bee-supplies, saw-machine, corn-sheller, or engine.
TOM CHINN, R. F. D. 3, Vandalia, Mo.

## Bees and Queens.

FOR SALE or rent, 30 stands bees and supplies.
C. LOTHROP, Newcastle, California.

FOR SALE.—All who intend to buy bees, queens, and hives, should write postal for Charles W. Zweily's 1908 catalog. CHARLES W. ZWEILY, Fremont, Ohio.

FOR SALE.—Queens; improved red-clover Italians, bred for business; June 1 to Nov. 15; untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H.C.CLEMONS, Boyd, Ky.

FOR SALE.—120 colonies of bees at $3.50 per colony, and fixtures; all in fine shape; combs straight. Also 200 lbs. sweet-clover seed, at 10 cts. per lb. Inquire of
H. E. DAVIS, Redfield, Kan.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and queens, and honey a specialty. Write for catalog and particulars. Choice melilotus (white sweet clover) seed for sale at eight cents per pound.
W. P. SMITH, Penn, Miss.

EARLY ORDERS booked now for delivery after May 1st. Best Italian bees, $6.00 per colony. Two-frame nucleus, $2.00. Queens, tested, $1.00; doz., $11.00. Untested, 75 cts.; doz., $8.50. Virgins, 40 cts.; doz., $4.50. Cash orders filled first.
GEO. H. REA, Reynoldsville, Pa. Rt. 2.

FOR SALE.—150 colonies of bees, arranged for comb-honey production, together with 250 supers and 100 empty hives, with all the necessary fixtures, stands, etc., for $700.00. Present location can be leased on easy terms. SEBASTIAN ISELIN,
Box 11, R. D. No. 2, Stockton, Cal.

## Poultry Offers.

FOR SALE.—Indian Runner ducks. Choice stock. Write me your wants. KENT JENNINGS, Mt. Gilead, O.

## Real Estate for Bee-keepers.

FOR SALE.—100 colonies bees; fine climate for lung trouble; plenty government land; good inspection laws; sweet clover, alf lfa, and sage pasture. Easy terms. J. W. HALE, Laplata, New Mexico.

FOR SALE.—40-acre farm in northwest Missouri; house, two lots, and five acres choice improved land; 200 colonies bees and fixtures; fox hounds that hunt all kinds of game; heavily furred buffalo-robe, and old Stradivarius violin. ELIAS FOX, Hillsboro, Wis.

FOR SALE.—Farm of 235 acres, 75 cleared, splendid for saw-mill; four miles from L. & N. R. R. and town. Beautiful, healthy situation; good water; two frame houses and wells, lots of fruit. Old age and lack of help the reason for selling. Write for particulars.
E. B. ELLIS, Hanceville, Ala.

FOR SALE.—A good Ohio home is offered cheap; 22 acres of land all cleared and tiled; a good two-story house and barn, and all other buildings as good as new; 125 fruit-trees; all kinds of fruit, all in good bearing condition; 20 colonies of bees, and a lot of bee-supplies, and a good extractor—a good chance for a bee-man. Write for price and description.
C. R. HAGEMAN, Homerville, O.

FOR SALE.—A bee-ranch in one of the best sections of California, 25 miles from Los Angeles. This season my 200 stands of bees produced 24 500 pounds of extracted honey. Good honey-house, 6-frame extractor, a Root gas-engine to drive same; 50 acres of land; nice place for home, near school, and only eight miles from the ocean. Price $2500.
PHILIP LESUEUR, Forrest Ave., Hollywood, Cal.

WANTED.—To sell or rent 160 acres. Price $17 per acre. Bees, grapes, corn, grain, vegetables, fowls, and stock do well. Healthy climate; five saw-mills, and mines near. Gardening profitable. Telephone, daily mail. Old age excuse. F. F. GEORGE, Fraser, Ida.

## Wants and Exchange.

WANTED.—500 colonies of bees in Texas, Arizona, or California. N. E. MILLER, Box 373, Logan, Utah.

FOR EXCHANGE.— ypher's incubator.
W. H. KERR, Crawfordsville, Ind.

WANTED.—Bees to run on shares, or shares and small salary; give full particulars in first letter.
C. A. WURTH, Pitkin, Ark.

WANTED.—The address of some person who would let his bees on shares—California preferred. State number of colonies, and conditions.
PERRIN, 417 S. Flower, Los Angeles, Cal.

FOR EXCHANGE —One new Americanized Encyclopaedia Britannica of 15 vols., which cost $48.50, for bees or supplies of like value; books are like new. Address CHAS. HURST, 384 Walden Ave., Buffalo, N. Y.

WANTED.—To lease, with the option of purchase, an apiary in the West or Southwest. Cash rental. Please send all particulars to
W. K. MORRISON, 528 Friendship St., Medina, O.

WANTED.—Refuse from the wax-extractor, or slum-gum. State quantity and price.
OREL L. HERSHISER,
301 Huntington Ave., Buffalo, N. Y.

WANTED.—Names of parties having bees to sell in South. Give price. Would like to correspond with bee-keepers on or near the Ohio, Cumberland, and Tennessee rivers. W W. CRIM, Pekin, Ind.

## Honey and Wax Wanted.

WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 S. Water St., Chicago, Ill.

WANTED.—To buy basswood, clover, and amber extracted honey for cash. Best prices paid. Send sample, and quote price delivered in Preston
M. V. FACEY, Preston, Fillmore Co., Minn.

WANTED.—No. 1 and fancy comb honey; 4x5x1⅞ section preferred. Also light extracted. Must be guaranteed pure. Write, stating grade and how put up, and lowest cash price.
C. M. CHURCH, Arnold, Pa.

## Honey and Wax For Sale.

FOR SALE.—Choice clover and fall honey in 60-lb. cans. CHAS. D. HANDEL, Savanna, Ill.

FOR SALE.—30 60-lb. cans ripe, heavy, alf. clover, ⅔ cleome, *natural* blend. Strictly choice. Case, $10.80; can, $5.69. Samples. MOREY, Lagrange, Ill.

FOR SALE.—Choice table honey, heavy body, fine flavor, aster-buckwheat blend; 60-lb. cans, $5 00 each. Inquire H. M. WEST, N. Kingsville, Ashta. Co., O.

FOR SALE.—Choice buckwheat and clover honey, in 60-lb. jacketed cans, at 9 cts. for clover and 7 for buckwheat. G. H. ADAMS, Schenectady, N. Y.

FOR SALE.—36 cases of comb honey in 4¼ and 4x5 plain sections. Clover and raspberry.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—1200 lbs. white and light amber extracted honey, thoroughly rip ned, and put in new 60-lb. cans. Price 10c, F. O. B. St. Joseph, Mo. L. E. ALTWEIN.

FOR SALE.—Fancy orange-blossom honey, 60-lb. cans, 9¾c; water-white sage, 60-lb. cans, 9½c; light amber, 60-lb. cans, 8¾c; dark amber, 60-lb. cans, 8¼. Special prices in quantities.
E. R. PAHL & Co., Milwaukee, Wis.

FOR SALE.—One ton amber and buckwheat comb honey at $3.00 per case, 24 sections, in glass-front case; 18 light-weight cases at $2 50 per case; also dozen cases extracted. QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

## Bee-keepers' Directory.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan Cyprian queens. E L Pratt, Swarthmore, Pa.

QUEENS.—Clover stock. Experience and methods count. Write me. H. G. LARUE, LaRue, Ohio.

ITALIAN queens bred for honey, untested, 75c each.
GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Extra honey queens and choice mountain honey.
Francis J. Colahan, Bernardo, San Diego Co., Cal.

QUEENS.—Pure Gold, Red-clover, Caucasian, Banat.
ROSE LAWN APIARIES, College View, Lincoln, Neb.

ITALIAN QUEENS.—Golden and leather, 60c each; worth $1.00. G. W. BARNES, Box 340, Norwalk, O.

Bee-keepers' supplies, Italian queens. Send for a free catalog. ARTHUR RATTRAY, Almont, Mich.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L AMOS, Comstock, Neb.

ITALIAN BEES and queens—Red-clover strain imp'd mothers. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIAN BEES, queens, and Root's bee supplies.
E. SCOGGIN, Carlsbad, N. M.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES and queens—red-clover and golden strains. E. A. SIMMONS, Greenville, Ala.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list free. B. F. YANCEY & SON, Angleton, Tex.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

FINEST Golden and red-clover queens, Caucasian and Carniolan. DANIEL WURTH & GRANT, Pitkin, Ark.

ITALIAN AND CAUCASIAN bees and queens of best quality; price list free. A. E. TITOFF, Ioamosa, Cal.

FOR SALE.—Golden and red-clover Italian queens.
WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

ROOT'S BEE SUPPLIES Send for catalog.
D. COOLEY, Kendall, Mich.

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted.
W. E. TRIBBETT, Staunton, Va.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

IMPROVED ITALIAN bees and queens ready in May. Circular and testimonials free; second-hand surplus arrangements for 4¼ sections, also folding cartons, cheap if taken soon, or will exchange.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O

ANGEL'S GOLDEN BEAUTIES and his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for $1.00; an extra select breeder for $2.50. I have had 12 years' experience at queen-breeding. Address
SAMUEL M. ANGEL, Route 1, Evansville, Ind.

To those who may not care to make up a wire cloth cage, as shown on page 33 of this issue, we would state that we are prepared to furnish it in a neat shipping-case, with lid and hasps all complete, for $12 00.

A line received too late for insertion in their full-page advertisement (see page 45) from Udo and Max Toepperwein requests our Texas subscribers to watch their advertisement in Jan. 15 GLEANINGS for the announcement of an introducing comb foundation sale.

NEW HONEY-JAR.

We have found a new honey-jar which is not only neat in appearance, and seals tight, tut is lower in price than any of the jars listed in catalog. We shall have it in ½-lb. and 1-lb. size. The mold for the 1-lb. size is not yet ready, and we shall not have the jars in stock for some weeks. We have a few of the ½-lb. size. We can mail a sample for 15 cts. to pay packing and postage.

SECOND-HAND FOUNDATION-MILLS.

We have to offer the following second-hand foundation-mills in good condition. We shall be pleased to hear from any one interested. To such we can send a small sample of comb foundation representing the kind of work produced by the particular machine you enquire about.

No. 078.—6x2½-inch hex. cell thin-super mill, in very good condition. Price $12 00.

No. 079.—6x2½-inch hex. cell thin-super mill, in very good condition. Price $12.00.

No. 088.—6x2½-inch hex. cell thin-super mill, in good condition. Price $12.00.

No. 086.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $12.00.

No. 088.—12x2½-inch round-cell heavy-brood mill, in fair condition Price $12.00.

No 082.—10x2½-inch round-cell medium-brood mill, in very good condition. Price $15.00.

No. 090.—10x2-inch round-cell medium-brood mill, in fine condition. Price $15.00.

No. 091.—10x2-inch hex. cell, medium or light brood mill, in good condition. Price $15.00.

GERMAN EDITION OF THE A B C OF BEE CULTURE.

We find when we get all our figures together that the production of the A B C in German is a bigger expense than we anticipated, and that $2.00 each for the paper-bound edition does not cover first cost to us, even if we could sell every copy for cash at the full retail price. Compared with other works of like size and nature of contents the price ought to be $5.00 per volume; but we know very well that very few would buy at that price. To make the price reasonable, and at the same time bring us somewhere near first cost, we will ask $2.50 postpaid for the cloth-bound edition and $2.00 for the paper-bound. When shipped with other goods by freight or express, 20 cents may be deducted. If any of our readers know of German friends who do not read English readily, and would like to read the A B C in their native tongue secure their order for the book at the above prices, and for 50 cts. additional we will send GLEANINGS one year to your address or any other to which you may prefer to have it sent.

EARLY-ORDER CASH DISCOUNT.

We have been obliged to cut down the early-order cash discount below that offered in former years; but it is still sufficiently liberal to pay transportation charges quite a distance, or to pay liberal interest on the money invested in supplies early, and should attract those forehanded people who know pretty well what they want for the coming season.

The following is the schedule of discounts for early cash orders for bee-keepers' supplies, subject to the conditions below:

| | | | |
|---|---|---|---|
| For cash sent in January, | deduct | 3½ | per cent. |
| " " " February, | " | 3 | " |
| " " " March. | " | 2½ | " |
| " " " April, | " | 2 | " |

The discount is only for cash sent before the expiration of the months named, and is intended to apply to hives, sections, frames, foundation, extractors, smokers, shipping-cases, cartons, and other miscellaneous bee-keepers' supplies. It will not apply on the following articles exclusively; but where these form no more than about one-tenth of the whole order the early-order discount may be taken from the entire bill: Tinned wire, paint, Bingham smokers, Porter bee-escapes, glass and tin honey-packages, scales, bees and queens, bee-books and papers, labels, and other printed matter, bushel boxes, seeds, and other specialties not listed in our general catalog.

## Convention Notices.

The Wisconsin State Bee-keepers' convention will be held at the Capitol, Madison, Wis., Feb. 5 and 6. President N. E France promises several good papers and an abundance of questions. The special features of the Wisconsin convention have always been the friendly and social intercourse among its members, and the profitable and instructive questions and answers of special interest to bee-keepers. Everybody is cordially invited to be with us.
GUS. DITTMER, Secretary.

The New Jersey State Bee-keepers' Association will meet in annual session at t e State House, Trenton, N. J., on Saturday, January 11.

PROGRAM.

10:00 A. M.—Roll-call and business session.
10:15.—Address by the President.—Bees and blossoms.
10:40.—A Season with the Carniolans.—A. G. Hann, Esq., Pittstown, N. J.
11:20—Preparing Extracted Honey for Market.—Mr. Harold Horner, Mt Holly, N. J.
11:45.—Question-box.
1:45 P. M.—What the Government is doing for the Bee-keeper.—F. G. Fox, Ass't Apiarist, Washington, D. C.
2 30.—The future of the Honey Business.—J. H. M. Cook, Esq., Caldwell, N. J.
3:15.—Discussion by Members. The Wintering Problem.

Sec., G. N. WANSER, Cranford, N. J. Pres., W. W. CASE, Frenchtown, N. J.

The following persons have been duly elected officers of the N. B. K. K. A., viz.: Geo. Hilton, president; G. W. York, vice-president; W. Z. Hutchinson, secretary; N. E. France, general manager; Wm. McEvoy, E. W. Alexander, and R. C. Aikin, directors.
R. L. TAYLOR, Chairman Board of Directors.

FOR SALE—It will pay to get our special proposition.
A. G. WOODMAN CO., Grand Rapids, Mich.

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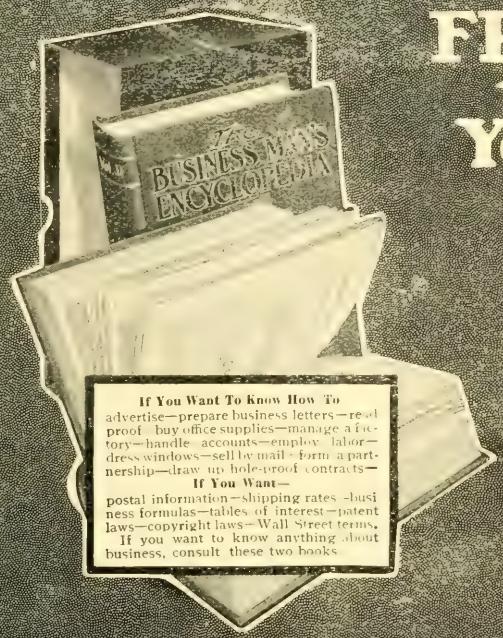


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The way to get these two valuable books absolutely FREE is through SYSTEM. SYSTEM stands pre-eminent the monthly Magazine of Business. 260 to 356 pages in every issue of SYSTEM, and you cannot afford to miss a single page of it. SYSTEM goes into the inner offices of the biggest, most successful men and brings forth for your benefit the fruit of their costly experience. SYSTEM will show you how to start a new business, how to win trade for it, establish prestige, create profits, minimize wastes, keep down expenses, stop losses. Better, SYSTEM will show you how to accomplish more, make more in your present daily work. SYSTEM has 300,000 readers. It has helped many of them to better salaries, bigger profits, that would have been impossible, undreamed of without SYSTEM. Both proprietor and clerk can learn more and *earn* more through SYSTEM.

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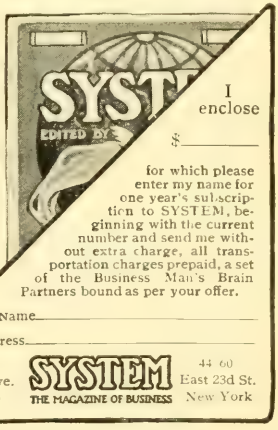
**Special Offer:** Merely send $2 with the coupon. We will enter your name for a year's subscription to SYSTEM and will send you free of all cost a handsome two-volume set of the Business Man's Encyclopedia bound in substantial red vellum cloth. Or better still include a dollar extra—$3 in all—and we will bind the volumes in the finest flexible English Morocco—and gold the edges. There is no leather so handsome, so strong, so dignified and so satisfactory as the genuine English Oxford Morocco. This leather will stand the wear and tear of years.

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# DEEN LOOM

# Flying Shuttle

WHY not put your spare moments to work bringing in extra cash? Some people in your town are waiting for some one to make up their rags into carpets, rugs and portieres.

It's genteel, honest work that any man or woman can do and make good profit at it. Just to prove it, here are the names and addresses of fifteen out of hundreds of people who have woven carpets and rugs at a good profit. They use a **Deen Loom.**

## Good Profits Made At Home

Mrs. C. R. Stover, Bradford, Ohio
Oma Cooper, Dale, Indiana
R. P. McGowan, Piedmont, W. Va.
Mrs. Rob. Record, Seymore, Illinois
Mrs. Henry Clark, St. Anthony, Iowa
Mrs. A. L. Clark, Central Square, N. Y.
Mrs. H. C. Blanahet, New Lathrop, Mich.
Mrs. T. E. Alley, Sylvan Grove, Kansas
Mrs. O. E. Albin, Kearney, Nebraska
Mrs. H. Goebel, West Point, Iowa
Mrs. J. S. Gilbert, Milton Junction, Wis.
Mrs. L. E. Foster, Bedford, Indiana
Mrs. Salanda Gunckel, Osgood, Ohio
Mrs. D. E. Williams, Pickering, Missouri
M. H. Vining, Waterloo, Iowa

Remember these are only fifteen of scores and hundreds who at this moment are hustling out work and getting good money for it.

## You Who Read This

Haven't you often wished for a useful employment by which to make money in your spare hours? No doubt you know of people who would gladly pay you for weaving their rags into carpets and rugs.

It's not only the poorer people that have hand-woven carpets and rugs on their floors, but well-to-do people of city, village and country-side appreciate the handsome and useful products of home-weavers.

By canvassing among your friends you can work up a good business. Profitable, too. Besides, it's done at home with the children, where you can have an eye on everything in house and yard.

## It's Not Hard Work

Weaving with a **Deen Loom** is soon learned. The Loom itself is a simple affair, easily handled, and soon understood. May Vittum, Barclay, Kansas, says:

"I can weave almost twice as much as I could with the old loom. I would not go back to the old one for anything. The new one is faster, easier, and does the best work."

Having a steel frame well-braced, and rigid, it resists the shock and stroke of the shuttle mechanism, remaining solid for years without repairs.

It will accomodate any size rug or carpet demanded.

## What May Be Woven

Any design can be made in any number of colors that taste and fancy may dictate. You can weave rugs, hammocks, all kinds of hand-weaves, carpets, portieres, etc. The materials to use are common carpet warp which can be purchased of any dry goods store; carpet rags, old clothes of any kind, old ingrain and brussels carpets, blankets, or nearly any kind of fabric. Your customers furnish you all material; you do the weaving and get good pay for it.

## A Few Prominent Reasons for Buying

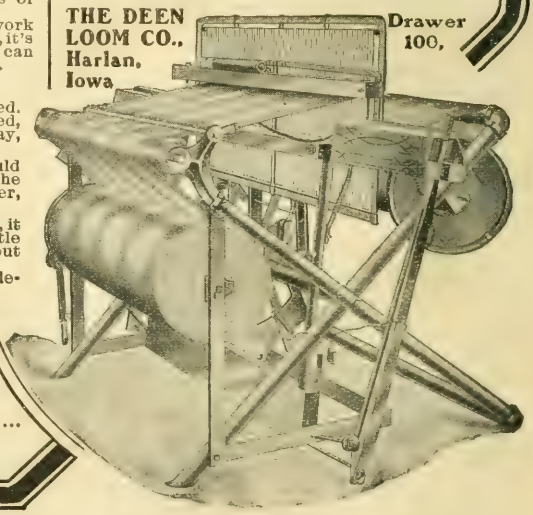
1.—You can make from $2 to $3 a day if you weave 8 hours daily.
2.—You can make from $4 to $10 a week using only part of your time—say evenings after work and an hour in the morning.
3.—We help you personally by letter if you wish. But this is seldom necessary, because we send you simple, detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
4.—The Fly-Shuttle is easily filled, quick to handle, doesn't bother.
5.—The Winding Mechanism and Feed-Governor are new improvements. The latter keeps the warp and weft mechanism within control. It saves much material and prevents hours of thrown-away time used by old-style looms.
6.—It takes up much less room than many other styles. It requires a room but 10 feet square for a complete weaving shop.
7.—We send you everything with the Loom. You can go right to weaving as soon as you get warp and rags.

## You Needn't Pay All At Once

Pay something down. As Loom brings in profits send balance by easy installments.

Fill in the coupon and mail. We'll send our free catalog and a letter about our easy-pay plan.

**THE DEEN LOOM CO., Drawer 100, Harlan, Iowa**



**COUPON**

Deen Loom Co.:— Date.....19....

Please send me your free catalog and detailed explanation of your "Easy Pay Plan" of selling your Deen Loom.

Name.....

Address.....

Town.....State.....

# Gleanings in Bee Culture

Headquarters, Museum, and Apiary of the Swiss Bee-keepers' Federation, at St. Gallen.

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Vol. XXXVI January 15, 1908 No. 2

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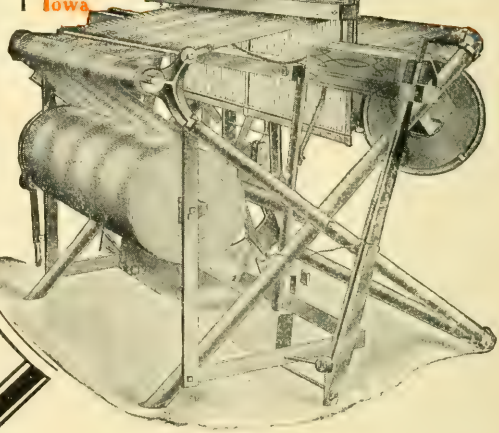
**THE DEEN LOOM CO., Harlan, Iowa** — **Drawer 100.**



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Please send me your free catalog and detailed explanation of your "Easy Pay Plan" of selling your Deen Loom.

Name.....

Address.....

Town.....State.....

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**Headquarters for**

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## Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

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**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

CHICAGO.—Within the last few days an unexpected amount of comb honey has come on this market in addition to small consignments from adjacent territory that became quite frequent in December. Three carloads of Western comb have come on consignment, part of it to firms that do not make a specialty of honey, so that, when a buyer appears, he is able to get concessions that are chiefly limited to what he will pay. On choice white grades, 16 cts. is asked, with little demand for any of the off lots, which are difficult to sell at from 1 to 5 cts. per lb. less. Extracted, white, 8 to 9; ambers and dark, 6 to 7. Beeswax, 28. R. A. BURNETT & Co.,
Jan. 8. Chicago, Ill.

INDIANAPOLIS.—Demand for best grades of extracted honey is good, while the demand for comb honey is not so brisk. Very little honey is being offered by producers at present. Jobbers are offering the following prices, delivered here. No. 1 and fancy comb, 16 to 17, net weight; extracted white clover, 9 to 10. Beeswax, 28 cash or 30 in exchange for merchandise.
Jan. 4. WALTER S. POUDER, Indianapolis, Ind.

CINCINNATI.—The market on comb honey is very slow and quiet. No. 1 is selling, in a retail way, white clover from 16 to 17, Colorado alfalfa from $3.75 to $4.00. Water-white extracted honey, sage and clover, good demand, ranging from 9 to 10; amber extracted in barrels, slow from 6 to 6½. Beeswax is selling slow at 32. C. H. W. WEBER,
Dec. 31. Cincinnati, O.

CINCINNATI.—Owing to the unsettled condition of finances throughout the country, causing much uneasiness and anxiety among the buyers, we look forward to seeing honey reach lower values in the very near future. We are at a loss to say what prices we will ask in 10 days hence, but at this writing we are quoting extracted amber honey in barrels at 6 to 7½ cts.; fancy white extracted in 60 lb. cans, at 10; and strictly fancy white comb honey (which is moving slowly), at 16½ to 18, according to the quantity purchased. For choice yellow beeswax, free from dirt, we are paying 30 cts. per lb., delivered here.
THE FRED W. MUTH CO.,
Jan. 4. 51 Walnut St., Cincinnati, O.

ZANESVILLE.—This market is still well stocked with honey, especially alfalfa. An occasional shipment of clover comb comes in from eastern and north-central States. The demand for honey, both comb and extracted, is still light, though it has toned up slightly since last report. No. 1 to fancy white comb would bring, first-hand, 15 to 16 cts., wholesaling at about 17½ to 18. Extracted, in 60-lb. cans, is quoted at 11 to 12½, wholesale. Beeswax quiet. Would pay 30 cts. in exchange for bee-supplies f. o. b. here. EDMUND W. PEIRCE,
Jan. 7. 136 W. Main St., Zanesville, O.

BUFFALO.—The demand is improving a little for white comb honey. Not very much in dealers' hands here. Extra good demand for white extracted, quick sale on arrival. No. 1 fancy white clover comb, 16 to 17; No. 2, 13 to 15; No 1 buckwheat, 11 to 12½; No. 2, 10 to 11. White clover extracted, 9 to 11; amber, 8 to 8½; dark, 7 to 8. Beeswax, 30 to 32.
W. C. TOWNSEND
Jan. 11. Buffalo, N. Y.

ST. LOUIS.—The honey market has been slow on extracted and comb honey, and is freely offered at the following reduced prices: Fancy white, 15 to 16; No. 1, 14 to 15; amber, 13 to 15, according to quality and condition. Broken and defective honey sells at considerably less. Extracted white, in cans, nominal, at 8 to 8½; amber, in cans, 7½ to 8; in barrels and half-barrels, ½ to 1c per lb. less. Granulated honey sells at about ½ cent per lb. less than liquid. Beeswax, 26c for choice pure. All impure and inferior, less.
R. HARTMANN PRODUCE CO.,
Jan. 10. St. Louis, Mo.

KANSAS CITY.—The receipts of comb honey are more liberal, and prices lower. The demand is light for both comb and extracted. We quote No 1 white comb, 24-section cases, $3.00 to $3 10; No. 2 white and amber, $2.75. Extracted, white, per lb., 8 to 8½ cts.; amber, 7 to 7½. Beeswax, 25 cts.
C. C. CLEMONS & CO.,
Jan. 10. Kansas City, Mo.

SAN FRANCISCO.—Honey moves very slowly at present, as high prices have curtailed the demand. With light offerings and few arrivals of new stock, prices are firmly maintained. Light amber, extracted, 7 to 7½; water-white comb, 16 to 17; white comb, 15; water white, extracted, 8 to 8½.—*Pacific Rural Press.*


WHAT HAS MUTH GOT NOW?

Genuine Orange-blossom Honey. Genuine Black-sage Honey. Genuine White-clover Honey.

(All in crates of two 60-lb. cans each.)

and Fancy Comb Honey in 24-section cases, averaging 22 lbs. to the case.

You better write for prices; this honey is too good to stay long on our hands.

THE FRED W. MUTH COMPANY,

51 WALNUT STREET. The Busy Bee Men. CINCINNATI, OHIO.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department,

205 La Salle St., Chicago, Illinois.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

HILDRETH & SEGELKEN,

265-267 Greenwich St. 82-86 Murray St.

NEW YORK.

**W. H. Laws says,** If there is a queen-breeder who can boast of better stock let him trot out the proof. Testimonials enough to fill this book. Will give you only one. Mr. J. C. King, Washington, D. C., writes, "For two years I have had one of your queens in my apiary. Each season she has given me over 200 lbs. comb honey; last season she actually stored while other colonies starved. I have over twenty strains in my three apiaries, but yours is the best."

Now is the time to get a fine breeding queen; stock up this fall and double your crop of honey the coming season. Single queen, $1.00; 6 for $5.00. Extra select breeders, $5.00. Safe arrival and satisfaction guaranteed

W H LAWS, Beeville, Bee Co., Texas.

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Why put up with inferior goods when you may as well have the best? They cost you no more. In many cases I can save you money. In all cases I give the most for the money, quality considered.

They are the ROOT GOODS, which I sell here at the ROOT FACTORY PRICES and DISCOUNTS.

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JOSEPH NYSEWANDER

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We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

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# Gleanings in Bee Culture

$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.

*Devoted to Bees, Honey, and Home Interests.*

Published by
THE A. I. ROOT CO., Medina, Ohio

J. T. CALVERT, Business Manager

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**OHIO**

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**Steam Cooker-Baker.**

We have many agents making $5 to $10 daily. Write us and we will give you names of agents near by who are making at least $5 daily. We can easily prove that the "O-HI-O" is the best money-maker you ever heard of, and will make you more money than any thing you ever sold or are now selling. *Write us at once and we will prove it.*

Guaranteed to save 50 per cent in fuel, labor, time, and provisions. A whole meal cooked over one burner on any style stove. It assures you deliciously cooked hot meals; *30 days' trial.* No intermingling of odors or tastes. Fine for use in summer cottages. A necessity every day of the year. The only healthful way to cook foods and breadstuffs.

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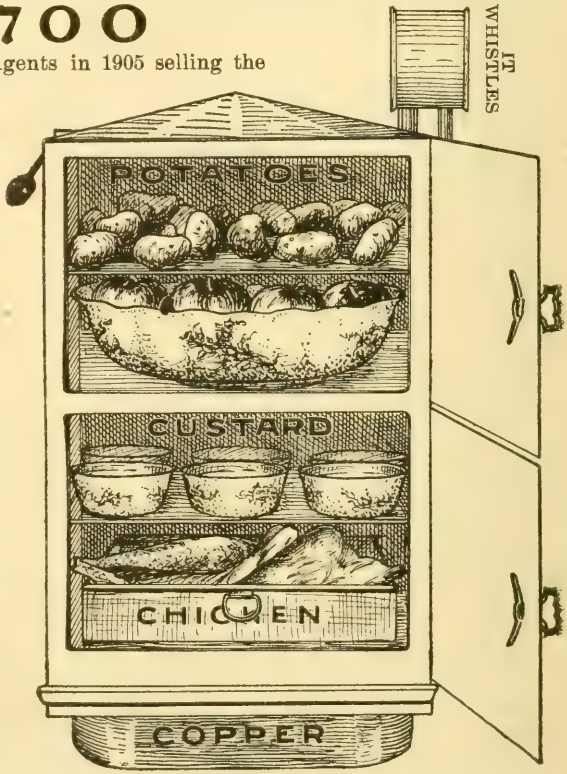

# THE JANUARY

*Bee-keepers' Review* comes as near being a "health number" as any issue yet printed, or that probably will be published Health is

**The Foundation of All Success,**

and two important points are covered in this issue. Many of our ills come from imperfect digestion, and C. W Dayton, who has studied medicine as well as bee-keeping, points one great cause of imperfect digestion and faulty assimilation, and tells how to make and use a drink, with honey as a basis, that will almost prove a cure-all for headaches, colds, neuralgia, and the many ills that result from indigestion.

Then there is an article from the pen of T. B. Terry, the potato-specialist, telling how he

**Cured Himself of Rheumatism,**

without medicine—simply by changing his ways of living. Then, to make sure there was no mistake, he went deliberately back to the old habits. The rheumatism returned, only to be cured again when he "reformed." Mr. Terry says that no one needs to have rheumatism if he lives right—and he tells how.

Then there are the usual practical, helpful, bee-keeping articles from such men as Atwater, Townsend, Bingham, and J. E. Hand. Yes, and Mr. Doolittle tells how to produce a crop of the most

**Fancy of Fancy Comb Honey**

with no danger whatever from swarming.

There are still a few sets left of the back numbers for 1907 that will be

**Sent Free**

if you send $1.00 for the *Review* for 1908. For $2 00 you can get these back numbers for 1907, the *Review* for 1908, and a copy of the book, Advanced Bee Culture. Book alone, $1.20.

**W. Z. HUTCHINSON, :: :: :: FLINT, MICH.**

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# At Just Half Price!

The **American Bee Journal**, which is now a 32-page monthly, in its 48th year, is the oldest bee-paper in America. It is only 50 cents, but you can have it at just half price (**for 25 cents**) when taken with any one of the following list of standard bee-books:

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| Dr. Miller's "Forty Years Among the Bees" | $1.00 |
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In poultry culture the main thing is health, and

**Conkey's Poultry Remedies**

Are the World's Standard

This is the season for Roup and the sneezing, wheezing, swollen headed fowls should be quickly restored to health, usefulness and profit. You cannot afford to experiment, so use

**CONKEY'S ROUP REMEDY**

Just a thimbleful in the drinking water and they cure themselves. Onr absolute guarantee goes with it, and it means your money back should it disappoint you.

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**THE G. E. CONKEY CO.**

**315 OTTAWA BLDG , CLEVELAND, O.**

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**SAVE FREIGHT!**
**SAVE TIME!**

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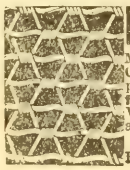

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Made of **High Carbon Double Strength** Coiled Wire. **Heavily Galvanized** to prevent rust. Have **no agents.** Sell at **factory prices on 30 days' free trial.** We pay **all freight.** 37 heights of farm and poultry fence. **Catalog Free.**

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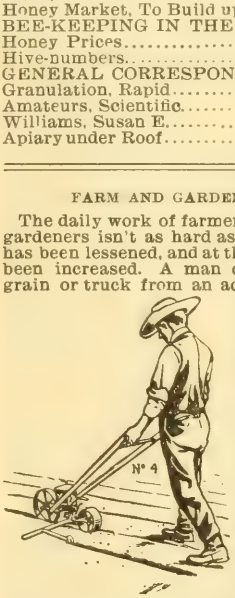
FARM AND GARDEN LABOR-SAVERS.

The daily work of farmers, truckers, and market-gardeners isn't as hard as it used to be. The labor has been lessened, and at the same time results have been increased. A man can get more bushels of grain or truck from an acre of ground to-day than he could a few years ago, and he doesn't have to work so hard to do it. The adoption of up-to-date methods in which the federal government with its experiment stations is aiding him, and the use of up-to-date tools, which the agricultural-implement makers have put on the market, combine to take away the greater part of the drudgery that was formerly a necessary part of agricultural effort. Along this line nothing has contributed so much as the tools known as the "Planet Jr." These implements not only lighten and lessen farm work, but they save seed, time, and money.

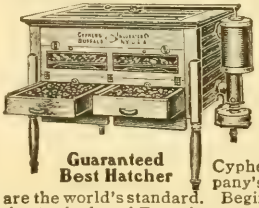



The Planet Jr. tools for farm and garden have an established reputation for quality as well as efficiency, and they are popular everywhere. They are used as successfully in Egypt and other foreign countries as they are in all sections of our own land. They represent the most advanced thought and ideas in farm-implement making, and hardly a year passes without the introduction of some new device or improvement to increase their usefulness to the man who tills the soil.

S. L. Allen & Co., of Philadelphia, make the Planet Jr. tools, and they issue a handsome catalog describing them. You ought to have one of these catalogs, whether you think you need more tools or not. The book is generously illustrated with photographic scenes showing modern methods of farming and gardening as it is actually being done with the Planet Jr. tools. If you will drop a postal to S. L. Allen & Co., box 1106S, Philadelphia they will be pleased to send you one of these catalogs.

**Poultry Experts Show How to Make Money with Poultry and Incubators.**

Every farmer and farmer's wife in this country should consider the great ready cash profits of raising poultry in the easiest and most economical, time-saving way, with incubators and brooders which have for 10 years demonstrated their superiority over the hen.




Poultry experts are absolutely agreed that the Cyphers Incubator Company's patented machines are the world's standard. Beginners—Experts and the Agricultural Experiment Stations are using Cyphers machines successfully and recommend them.

It will pay every reader of this paper to get the latest reliable facts on the poultry subject, by writing for the Cyphers Free 212-Page Catalog (8x11 in., larger than a magazine), which is most interesting in the decision of the subject of "How to Make Money with Poultry and Incubators."

The catalog contains hundreds of illustrations, and describes the full line of Cyphers Supplies—everything for the poultry raiser. This, the biggest and best book of its kind, is free to you if you name this paper and send name and address of two acquaintances interested in poultry. Address

Cyphers Incubator Company, Buffalo, New York, Boston, Chicago, Kansas City, Oakland, Cal., or London.

# $500.00 ACCIDENT INSURANCE POLICY FREE!

## FARMERS' INSURANCE THAT REALLY INSURES.

You may have had other chances to buy accident insurance that would protect you in elevators, on steamboats, and automobiles, but this is *the first chance you have ever had* to get real protection in your ordinary work. This NEW $500.00 POLICY was secured from the North American Accident Insurance Company, of Chicago, Ill., (Surplus $331,498.66) the largest company in America handling this class of policies, after long negotiations. It took three months to induce the company to write the special features that were required to make it valuable for rural people. By buying the policies outright in very large quantities, it is now possible to offer it FREE with this remarkable practical combination of magazines.

**GLEANINGS IN BEE CULTURE, $1.00**
the bee-keepers' favorite paper,

**FARM JOURNAL (five years), .75**
the standard farm parer of the world,

**GARDEN MAGAZINE—FARMING, 1.00**
a most beautiful, practical horticultural magazine.

**INSURANCE POLICY . . . 1.00**

**$3.75**

# All for $2.

These magazines, if paid for separately, would cost you $2.75, but we can sell ALL THREE MAGAZINES with the NEW INSURANCE POLICY for ONLY $2.00. This is because the three publishers have combined for a subscription campaign. If each one sent you a separate letter it would cost us just three times as much as where we offer all three together. THE SAVING GOES TO YOU.

If the policy is not wanted we can substitute any of the following: "Designer," "Housekeeper," "Ladies' World," "McCall's Magazine," "Mother's Magazine," or the Garden and Farm Almanac.

# WHY SHOULD YOU HAVE THESE PAPERS?

**BECAUSE** GLEANINGS IN BEE CULTURE is the great paper in America devoted to bees and honey. If you have bees, or are going to get them (and everybody who lives in or near the country should have bees), you need the most reliable and latest information, and you want at the same time the simplest directions possible. You want the bee business in a nutshell, and that is what GLEANINGS will give you. For the beginner or the most expert it is equally valuable.

**BECAUSE** FARM JOURNAL is far and away the foremost farm-paper in the world, a boiled-down, practical, helpful, entertaining monthly, built to make the rural homes of America more happy, prosperous, and contented, and already doing it for more than 500,000 homes. For farmers, villagers, or suburbanites.

**BECAUSE** the most beautiful garden and horticultural publication in the world is the GARDEN MAGAZINE, full of sound sense, beautiful engravings from photographs, and fine printing. It has ten issues at 15 cents each and two at 25 cents each, per year, and the subscriber gets his money's worth twice over. It is a delightful magazine, useful, stimulating, and ornamental.

# WHY SHOULD YOU HAVE THIS INSURANCE?

Because you are in danger, every moment, of an accident which may cripple you for weeks, months, or for life; because the loss of an eye, a hand, or a foot, may mean destitution for yourself and your family; because this protection, for a full year costs you nothing whatever.

**WHAT THE POLICY PAYS:**

| | |
|---|---|
| **For Loss of Life** | **$500.00** |
| **For Loss of Both Eyes,** meaning entire and permanent loss of the sight of both eyes.. | **500.00** |
| **For Loss of Both Hands,** by actual and complete severance at or above the wrist..... | **500.00** |
| **For Loss of Both Feet,** by actual and complete severance at or above the ankle..... | **500.00** |
| **For Loss of One Hand and One Foot,** by actual and complete severance at or above the wrist and ankle..... | **500.00** |
| **For Loss of One Hand,** by actual and complete severance at or above the wrist..... | **125.00** |
| **For Loss of One Foot,** by actual and complete severance at or above the ankle..... | **125.00** |
| **For Loss of One Eye,** meaning entire and permanent loss of the sight of one eye..... | **50.00** |

Provided such loss shall result within thirty days from date of accident, from accidental bodily injuries, solely and independently of all other causes, and covers accidents as follows:

Being thrown from a mower by horses.
Being knocked down in the road by a wagon or automobile.
Being hurt in a bicycle accident or collision.
Being hurt while operating corn-sheller, fodder-cutter, etc.
Being caught in a burning building, house, or barn.
Being hurt in an elevator or any public conveyance—train, trolley, boat, etc.
Being injured in a runaway.
Being frozen or frostbitten.
Being injured by robbers or burglars.

Should the Assured obtain injuries *in the manner specified above*, which shall not prove fatal, but which shall immediately, continuously, and wholly disable and prevent the assured from performing each and every duty pertaining to any business or occupation, the Company will pay the Assured FIVE DOLLARS PER WEEK during the time of such disablement, but not exceeding six consecutive weeks for any one accident.

# NO DELAY OR EXAMINATION.

The insurance goes into effect as soon as you receive the policy and mail back the coupon attached to it. There are no dues, taxes, premiums, or assessments of any kind whatever to be paid by you. We have paid everything in full.

The three papers will begin at once, and will come to you each month till the time expires. THEN THEY WILL STOP, unless you order them renewed.

Send us $2.00 by registered mail, or postoffice or express money-order to-day. Money refunded to any dissatisfied subscriber. Address **GLEANINGS IN BEE CULTURE, MEDINA, O.**

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*The A. I. Root Co.:*—Please take out my ad't. The machine is sold. Thanks for your kindness.
Crawfordsville, Ind., Jan. 10. W. H. KERR.

WANTED.—To exchange Cypher's incubator.
W. H KERR, Crawfordsville, Ind.

Hundreds of our subscribers have articles, implements, etc., for which they have use no longer, which could easily be disposed of by a little adv't in our classified columns. Rates, 25 cts. per line per issue.

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On page 74 appears the advertisement of a new firm located at Bangor, Maine. They handle Root bee-supplies and sell at factory prices, allowing all quantity and early-order discounts. They have fine shipping facilities and would be pleased to handle a trial order from you. Give special attention to their offer for the coming year concerning bee literature. Catalog and circulars will be mailed free upon request by Geo. S. Graffam & Bro., Bangor, Maine.

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### AN OLD RELIABLE SEED FIRM.

We have just received the annual catalog of that old reliable seed-house, D. M. Ferry & Co , Detroit, Mich. The cover pages are handsome color illustrations of scenes in Belle Isle Park, in Detroit. The firm of Ferry is so well known to all gardeners and farmers that it is almost a work of supererogation to make any remarks about them. Their trade extends from the Atlantic to the Pacific, and from Hudson's Bay to the Gulf of Mexico—and, in fact, further, for they send seeds to the islands of the sea. They do a large business in farmers' seeds for the vegetable-garden. In addition the farmers' wives also buy considerable quantities of flower-seeds for the proper adornment of the rural home. Some good housewives will have none but Ferry's seeds. When you send for their catalog, mention this journal.

---

### THE "OLD TRUSTY" INCUBATORS.

One of the most reliable poultry concerns we know of is the M. M. Johnson Co., of Clay Center, Neb , who manufacture the well known Old Trusty incubators. One of the important features of these incubators is the California redwood of which they are made. This is one of the best furniture woods known, having the striking advantage of not expanding with the wet atmosphere nor contracting with a dry one. It is, furthermore, a wood of great durability and beauty, being much used by piano-makers. Another valuable feature of this machine is the absence of the lever arm on top, which generally happens to be in the way, more especially when some person throws his overcoat or hat down on the incubator. It is also out of the sight of meddlesome children who are generally interested in incubators. These two features alone are surely sufficient to show that Mr. Johnson is no "chicken" at the chicken business, and that he is in earnest in trying to furnish his customers the very best machine that money can buy. He issues a nice catalog which is free for the asking. When you send for it, kindly mention GLEANINGS.

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### THE DETROIT DISC HARROW.

Disc machines are the order of the day in the farming world. Plows and harrows of this type are carrying all before them. Among the very best is the Detroit tongueless disc harrow advertised on back cover page. It certainly has features which appeal strongly to the practical man who is looking for something which will do his work with the least expenditure of force, time, and money. One of the prominent features of the Detroit is that it is tongueless. For this reason it is easier to handle and is less troublesome to the horses.

Another valuable feature is that the discs can be lifted up out of the way very readily and easily. This prevents dulling the discs when the machine is on the road going from one field to another, or to and from the barn and the land to be cultivated. Having no tongue it is easily handled among fruit-trees—something of a boon to fruit-growers. It is unnecessary for us to explain all the features of this harrow, because the manufacturers send free a book which fully explains all the main points of superiority. It is worth sending for.

The makers, The American Harrow Co., 468 Hastings St , Detroit, Mich., have branch-houses through which they ship to save freight. They also sell on the installment plan to suit the views of some patrons. Some of our foreign readers would probably find a perusual of their catalog very interesting. Send for a catalog and mention GLEANINGS.

# THE DIVERSITY OF OUR READERS' WANTS.

Ten years ago the large advertising agencies placing advertising for miscellaneous goods such as farm implements, vehicles, fencing, etc., gave us slight consideration under the mistaken idea that bee-keepers were not interested in the lines other than relating to their special trade. When it is remembered that the average bee-keeper is also a farmer, a gardener, fruit-grower, or belongs to any of a hundred other well-known occupations it will be seen at once that he is just as good a purchaser as any one, and the chances are that he may be better. The advertisements reproduced below are selected from some of the smaller ad's run within the past year, showing what a diversified class can find it profitable to use our columns:

**10 DAYS FREE TRIAL**

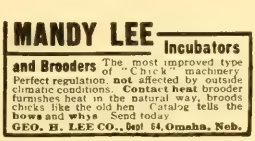
We ship on approval, without a cent deposit, freight prepaid. DON'T PAY A CENT if you are not satisfied after using the bicycle 10 days.

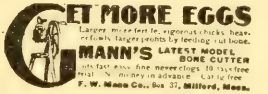
**DO NOT BUY** a bicycle or a pair of tires from anyone at any price until you receive our latest art catalogs illustrating every kind of bicycle, and have learned our unheard of prices and marvelous new offers.

**ONE CENT** is all it will cost you to write a postal and everything will be sent you free postpaid by return mail. You will get much valuable information. Do not wait, write it now.

TIRES, Coaster-Brakes, Built-up Wheels and all sundries at half usual prices.

MEAD CYCLE CO. Dept. W215 CHICAGO





Peach Trees
Grown on Peach Seedlings. Fine, stocky, hardy, grown on virgin soil. Large, fine, well rooted, free from insects and diseases. Also Apple, Pear, Plum, Cherry, Quince, Currant, Grape, Asparagus, Rhubarb, Shrubs, Vines, Bulbs, Seeds, Plants, Fertilizers, Spraying Material, Farm Implements, Bee Supplies, Poultry Supplies, Incubators, Brooders, Poultry Fence, Poultry Netting, Poultry Supplies, Poultry Foods, Poultry Medicines, Poultry Remedies, Poultry Tools, Poultry Appliances, Poultry Fixtures, Poultry Utensils, Poultry Implements, Poultry Machinery, Poultry Apparatus, Poultry Equipment

# WE OFFER

**THE FOLLOWING LIST OF GOODS AT THE EXCEEDINGLY LOW PRICES TO CLOSE OUT OUR STOCK:**

80 Danz. 10-frame nailless covers, flat, and metal-bound at ends to prevent warping, at 15 cts. each.

20 C hive-stands and bottom-boards combined, 10-frame, flat, at 21 cts. each.

30 C hive-stands and bottom-boards combined, 8-frame, flat, at 19 cts. each.

18 lbs. thin super foundation, 4½x12⅞, at 55 cts. per lb.

8 sheets Root zinc, 28x96, square holes, at $1.00 each.

35 chaff-trays for Root 8 frame chaff hives, at 16 cts. each.

1 Taylor comb-leveler at 60 cts.

75 chaff division-boards, flat, at 10 cts.

50 8-8 shallow extracting-supers, with shallow frames, at 33 cts.

25 8-10, as above, at 37 cts.

1 6-in. Root foundation-mill, good condition, $8.00.

All goods f. o. b. cars our station.

Our stock of the latest Root goods is complete. Send your name and address for 1908 catalog. Note the January discount is 3½%.

## M. H. HUNT & SON

**REDFORD, .. .. .. .. MICH.**

TO THE

## BEE-KEEPERS OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

**E. GRAINGER & COMPANY,**

**Deer Park,**

**Toronto, Ontario, Canada.**

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

## BIENENZÜCHTER!

**von Deutschland, Schweiz, Oesterreich, u. s. w., senden Sie fuer unsere 1907 Preisliste von**

Bienenwohnungen, Rauchapparaten, Honigschleudern, Handschuhen, Bienenschleiern, Walzwerken, Futterapparaten, Porter's Bienenflucht, Fluglochschiebern für Kasten, Königinnenabsperrgittern, Weiselkäfigen, Schwarmfangbeuteln, Entdecklungsmessern, Dampfwachsschmelzern, Wabenenentdecklungsapparaten, und allen anderen Bienengerätschaften der

**A. I. ROOT COMPANY**

**Grösste Fabrik Ihres gleichen in der Welt**

**EMILE BONDONNEAU**

General Vertreter für Europa und Kolonien

**142 Faubourg Saint Denis, Paris, 10me.**

LET US SEND YOU

# An Outfit for Making A Start in Bee-keeping

AN OUTFIT composed of five of our divisible-brood-chamber hives, with Danz. supers in the flat, including a Standard Smoker, Veil, A B C Book, with one year's subscription to GLEANINGS IN BEE CULTURE, can be furnished for an even $15.00.

This outfit will be shipped promptly by freight or express on receipt of $15.00.

**The A. I. Root Co.,**

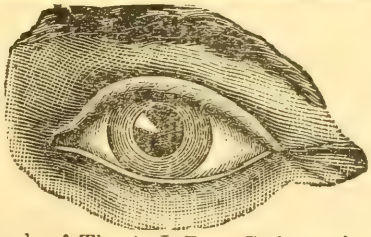
**Syracuse, .. .. .. .. New York.**

# WE DO NOT SELL ROOT'S SUPPLIES

So many advertisers in GLEANINGS IN BEE CULTURE sell supplies bought from the Root Co. that to explain away a false impression we are compelled to state that we are not jobbers, but *manufacturers.* We make all the Bee-supplies we sell. Minneapolis is the largest lumber-distributing point in America. We buy lumber to advantage; we manufacture by water-power; we have lowest freight rates, and we sell on manufacturer's profit basis. **Let us quote you prices.**

**MINNESOTA BEE-KEEPERS' SUPPLY COMPANY**

**DEPT. 22 .. .. .. .. .. MINNEAPOLIS, MINN.**

# Keep your  on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once. For prompt shipments and good service, we are at your command.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO,, MISSOURI.**

# What's the Matter With Hilton?

WHY, HE HAS A LOT OF SUPPLIES HE WANTS TO LET YOU HAVE WITHIN THE NEXT SIXTY DAYS AT A DISCOUNT, TO MAKE ROOM FOR THE NEXT SEASON'S GOODS. JUST SEND A LIST OF WHAT YOU WANT AND GET ESTIMATE. IF YOU HAVEN'T HIS FORTY-PAGE ILLUSTRATED CATALOG, SEND FOR IT AT ONCE.

CASH OR SUPPLIES FOR BEESWAX AT ALL TIMES

**GEORGE E. HILTON**
**FREMONT, :: :: MICHIGAN**

## MAKE UP YOUR ORDER

from *any catalog of Root's goods* published this year; deduct the *early-order discount*, and send us the order with remittance to cover amount. The goods will be forwarded to you by the shortest route at once.

*Our specialty is bee literature.* Make a list of the bee books and journals you intend buying this year at publishers' prices. Deduct 10 per cent; or if the total is more than $10.00, 15 per cent. Send us the net amount and we will send the books prepaid. Catalog and price list of bee-supplies, bee-books, and honey free.

**GEO. S. GRAFFAM & BRO., Bangor, Maine**

*WE KEEP IN STOCK IN*

## NEW YORK CITY

a large line of **BEE-SUPPLIES** and allow a liberal discount at this season. Catalog free.

**I. J. STRINGHAM,**
Apiaries, Glen Cove, L.I. 105 Park Pl., N. Y City.

## Northern New York Bee-keepers,

**3½ PER CENT DISCOUNT.**

We have a large stock of shipping-cases and feeders, and all orders for same will be filled promptly. Beeswax and old combs wanted; cash or trade; 3½% discount during the month of Jan. on every thing but cases and feeders. Comb honey wanted; write stating how put up, kind, and lowest cash price deliver'd in Watertown, N. Y.

**A. H. REEVES & CO., No 3 State St., WATERTOWN, N. Y.**

## THE DANZENBAKER SMOKER

PAT. OCT. 3,'05, JUNE 4,'07

**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

**IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR**

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case,** and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed**, giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot**: no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt,** expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

**1884** **1908**

Root's Goods always in stock

## FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M Jenkins**
**Wetumpka, : : Alabama**

## Dittmer's COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

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Yours truly, LAURENCE C. CLARKE.
Morden, Man., March 5, 1907.

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# Nothing "halfway" but the Place=

## or, what is in a name, anyhow?

*By the Bee Crank.*

Not "halfway" satisfactory, but entirely satisfactory, and from a prosperous little town in Missouri, the State where folks have to be shown. I find, though, that there are bee-men in other States who are in need of being shown as well as those in Missouri. Try placing a trial order here, regardless of distance, and let me show you what I can do by way of accuracy, promptness, and finest quality of goods. The following whole-souled letter from Mr. Taft speaks for itself:

Halfway, Mo.

*Mr. Walter S. Pouder:*—The goods are here, and every thing is all right—not a blemish on any thing. I never saw goods packed better. I am more than pleased, and the freight from Indianapolis to Bolivar was less than I expected. The honey and wax extractors are simply fine; and when I want more goods I know where to send. Truly yours, J. M. TAFT.

Incidentally, Mr. Taft's letter conveys a very strong suggestion to other bee-men regarding the place to order their supplies. Packing goods carefully and getting them to my customers in perfect condition is a matter of temperament with me. If there was any thing wrong it would worry me more than it did the consignee. I handle all sorts of bee-supplies, sell Root's goods at Root's prices, and it's only "halfway" as far from me to you as it is from any other point in the universe where you could buy your supplies.

I pay highest cash and trade prices for beeswax Send it along by freight or express according to size of package.

Finest white-clover extracted honey in any quantity. Write for quotations. My illustrated catalog is free.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

GLEANINGS IN BEE CULTURE

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A. I. ROOT, EDITOR OF HOME DEPARTMENT

Vol. XXXVI. JANUARY 15, 1908. No. 2

# STRAY STRAWS

by Dr. C. C. MILLER

A TABLESPOONFUL of honey, even measure, weighs ⅜ of an ounce — 24 spoonfuls to the pound.—*American Bee Journal*, 747.

POSSIBLY dividing a swarm into two or more parts at time of swarming, as given by Wm. M. Whitney, p. 37, has been given before; but I don't remember seeing it. Looks good.

J. E. HAND has the endorsement of the bees as to the best time to requeen an apiary, page 40; for, if I am not mistaken, nearly all their superseding is done about the close of the honey-flow.

A PROFIT of $300 is figured for Mr. Howe for moving 100 colonies to the basswoods, p. 23. That's right, if absolutely nothing is stored in the home apiary during the time of removal. Otherwise the home surplus must be deducted from the $300. [Here is a chance for a nice little conflab between Dr. Miller and G. M. Doolittle. If we knew how to egg on the fight we would do it. GLEANINGS will furnish the arena.—ED.]

SPLIT-TOP SECTIONS are mentioned, page 1557. When sections were first introduced they were all 4-piece, and did they not all have split-tops? Certainly I never saw any others for some time. The tops were not split in two entirely; a saw-kerf was cut in the under side, and then they were bent apart to receive the foundation. [You are correct that split tops were used with four-piece sections, but not exclusively. They were made both ways.—ED.]

"A SYRUP two parts of sugar and one part of water" for late feeding, p. 32. Wouldn't you rather have it just a bit heavier? All the syrup I ever fed late was 2½ parts sugar to one of water, and it never seemed too thick. It may be well to remember that many excellent authorities in Germany strongly insist that continued sugar-feeding is at the expense of the stamina of the bees. [Possibly you are right, doctor, that a thick syrup given all in one feed should be two and a half to one. We shall be glad to get results of experiments on this point from our subscribers. See discussion by J. L. Byer on this subject in this issue.—ED.]

A CORRESPONDENT whose bees are now in the cellar wants to change the location of his apiary in the spring about half its length, leaving the east half on its old stands, and moving the west half east of this. He wants to know whether there will be any trouble from bees returning to their old location when thus placed in the spring. I think not; and, what's more, he will have no trouble if he puts each colony just where he likes when taken from the cellar, with no reference to its former location, as I have tried it a number of times.

STATE'S ATTORNEY HEALY, of Chicago, whose office has 15,000 or 20,000 criminal cases a year, says, "When you put the lid down hard on the liquor-traffic, or wipe it out altogether, then you can close half of your courts." [And he was quite within the limit of facts. Whenever the lid is put on hard, there is not much doing in the criminal courts. Only recently the lid has been screwed down on Sunday in Cleveland, and the newspapers have been commenting on the fact that the usual bums and toughs that come up before the criminal courts on Monday are conspicuous by their absence.—ED.]

ENDORSING what Prof. Cook says, page 24, let me add that, if the bees of this country are ever brought to their highest development, it will not be so much because a few of the queen-breeders have done conscientious work, but because the rank and file all over the land have done what Prof. Cook commends. What John Smith, with ten colonies, ten miles distant, does with his bees may not seem of any interest to me, and yet in time it has its influence on the character

of my bees. A drop of water dropped in Lake Michigan at Chicago doesn't raise the level of the lake much ten miles distant, but it does raise it.

IN 1880 Frank R. Cheshire was engaged as lecturer of the National Temperance League, and up to the time of his death he had delivered 2100 lectures in metropolitan schools, which were valued by the young people to whom they were addressed.—*British Bee Journal*, Oct. 11, 1894.

A friend calls my attention to the foregoing; and in these days, when such a wave of prohibition is sweeping over our land and other lands, it is pleasant to recall that one so prominent in the rank of bee-keepers should have used such an influence among the young folks who are now voters in the old country. I wonder, now, whether a greater proportion of prohibitionists may not be found among bee-keepers than among any other class, not even excepting ministers.

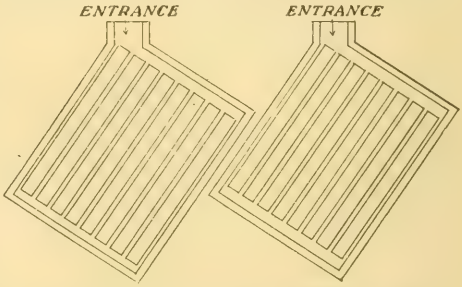
"WHEN THE MOTH is disturbed it moves with a jump and a flit, making it hard to catch," p. 21. Yes, hard to catch after it gets to jumping and flitting, but very easy before. Move the fingers slowly till within an inch or so of where the moth is sitting, then quickly make a dab, and you have it. Now something interesting to the youngsters. When you catch a moth, pull off its head; and if it is a female—nine times out of ten it will be one—it will almost immediately begin feeling around with its ovipositor. Shut together your thumb and finger, and let the ovipositor feel its way into the crack between them, and a very little round white egg will be laid there—perhaps several. [This is an interesting contribution to natural history. We do not remember to have seen it given before.—ED.]

"IN THE WELLS system there was no intermingling of the bees," p. 17. Did not the bees from both parts enter the same super, thus making an entire intermingling? [In most of the cases where the Wells system was illustrated and described in the *British Bee Journal*, the super was divided as well as the brood-nest, so there was no intermingling of bees as suggested by you. In one or two cases of the Wells system, however, the bees in the two divisions in the hive could mingle *after* they got into the super; but, apparently, the author of the system did not contemplate any intermingling of bees either in the super or brood-nest. We have lately been over the files of the *British Bee Journal*, and we are convinced there is a sharp distinction between the Wells system proper and the two-queen system with perforated zinc.—ED.]

W. S. PANGBURN writes: "E. R. Root objects in the A B C to your tent-escape for supers, for the reason that the very young bees are unable to get back to the hive," and perhaps for that reason I find no mention of it in the 1908 edition. Please tell us on what ground you base your objection. [Your tent escape, doctor, was dropped for one embodying the same principle by W. M. Whitney. As his modification we consider superior to yours, and as our space was cramped, we dropped yours and substituted his. Mr. Whitney's has the advantage that bees will come out of the supers because they do not have to travel from one super to another in order to find daylight. By consulting the Whitney bee-escape in our new A B C book, which escape was illustrated and described by the author on page 1150 for Sept. 1st last year, one will see more clearly why the change was made. With either escape it would be my opinion that some young bees will be lost.—ED.]

SR. PONS-FABREQUES, p 27, is threatened with lynching in Germany or Scotland for saying heather honey is of inferior quality. Certainly in Scotland; but wouldn't he be safe at least in parts of Germany? [At the risk of being lynched ourselves, we will state that a very fine section of heather honey was sent us from "Merrie England." Perhaps our tastes have been educated wrongly in this country; but of all the vile honey we have ever tasted, we should certainly put this at the head of the list. We have since submitted it to guests as well as to connoisseurs of honey; and the verdict of all of them alike was to the effect that it is an ill-flavored honey to say the least. Perhaps some of our British cousins may say this was not a good sample; but the correspondent who sent it said it was something extra fine in heather honey. If we were not familiar with the taste of buckwheat we probably would class it as bad as heather; but the very fact that some residents of the buckwheat country consider buckwheat honey the best honey sold, and that expert connoisseurs in England and Scotland consider heather honey the very finest that is produced, it shows that there is every thing in getting our tastes educated to a certain flavor.—ED.]

RUDOLF HORA, *Deutsche Imker*, 347, is enthusiastic over a half-cold-and-half-warm arrangement. He says the cold arrangement in use in this country (frames running at right angles to the entrance) makes the bees move to the back part to get away from the cold; while the warm arrangement, largely used in Europe, makes the bees cluster toward the entrance to get the air. He com-




promises by making the entrance at one corner, which favors clustering in the center of the brood-chamber. Not hard to do if there is any thing in it. [The arrangement illustrated above is very pretty in theory; but

Rudolf Hora is clearly wrong in his statement when he says that when the frames are at right angles to the entrance the bees will be found clustered in the back of the hive rather than in front. The rule is, in this locality at least, that they will be situated in front directly over the entrance, with occasional exceptions. We have talked with prominent bee-keepers who say they have observed the same thing. If we were to call for a show of hands on this point we would venture to state that 99 per cent—yes, we may say all who have observed the matter at all—will say the bees will be clustered in front. If this be true, then Rudolf Hora's catacornered entrance has nothing in it.—ED.]

THE scheme of wrapping up sections of honey in transparent paper is going to prove to be a success. If you did not read the article on page 1500, Dec. 1st, you had better do it now.

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SO far as we can ascertain, the winter thus far has been comparatively mild in most localities. This will augur well for outdoor-wintered bees, and at the same time give the young clovers a chance to grow.

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EVERY bee-keeper should read the editorial in this department on the subject of allowing glucose to be called corn syrup. It is very important that every one of our subscribers write at once to Secretary Wilson and to Dr. Harvey W. Wiley, of the Bureau of Chemistry, Washington, D. C.

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POSTMASTER-GENERAL MEYER recommends the issue of postal notes to the present session of Congress. A small fee will be charged, and the denominations will be as convenient as possible; namely, 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 cts., $1.00 and up to $2.50. Notes payable to the bearer will be issued from 1 to 9 cts., and no fee will be charged. The postoffice comes into closer relationship with the people than any other bureau of the government, and these suggested improvements will make it more so.

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LOMPOC, CAL., recently shipped 20 carloads of mustard seed to points in the East. The cars were not small-sized either, for each one held 500 sacks of 80 lbs. each. The trainload represented a value of $35,000; and in honor of the event it was decorated with flags and bunting. Lompoc Valley is said to produce about 60,000 sacks a year of both the red and yellow varieties. There are some bee-keepers in that valley who ought to be able to tell us something about the value and production of mustard honey.

W. K. M.

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### PURE-FOOD LAW IN CALIFORNIA.

THE pure-food law of California went into effect January 1. The enforcement of the law has been entrusted to the State Board of Health, with its headquarters and laboratory at the State University, Berkeley. The work is in charge of Professor M. E. Jaffa, a well-known pure-food expert. Under the law the sheriff of each county is the authorized agent of the board for the collection of samples. On complaint the sheriff will collect samples and forward them for examination. Heretofore it has been possible to "doctor" California honey intended for consumption in that State; but the new State and national law will prevent this entirely in the future.

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### SUBSCRIPTIONS ROLLING IN FOR GLEANINGS FOR 1908.

WE are gratified to know that, even during these panicky times, and after two very poor seasons, new subscriptions and renewals, with cash, are rolling in at a pretty good rate. Apparently our efforts to furnish a first-class bee-journal, making an aggregate for the year of 1600 pages for $1.00, are being appreciated. GLEANINGS for 1908 will be better than ever. It is going in for a campaign for higher prices on honey, and to fight unfair competition from so-called corn syrups.

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### MAKING LABELS STICK TO TIN.

AT the Harrisburg convention, during the question-box discussion Mr. N. E. France said there would be no trouole about making labels stick to tin providing the oil on the surface of the tin is washed off with soda or vinegar; then when dry apply the paste and the label.

Some one else, we can not remember who, said there was something in making the flour paste. Mix the flour and water *cold*, and then cook to a paste. Don't mix the flour with warm or hot water, or the labels won't stick, it was said. This seems worth trying.

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### THE CRISIS IN THE GLUCOSE BUSINESS; "CORN SYRUP" VERSUS "GLUCOSE;" DO IT NOW.

ON page 1557 of our Christmas number we requested our subscribers to register a protest against allowing glucose to be called "corn syrup" in trade advertising, as demanded by the glucose interests. It appears that Dr. Harvey W. Wiley, Chief Chemist of the Department of Agriculture, and Dr. Dunlap and Solicitor McCabe, of the Pure-food Board, have already ruled against the glucose crowd, declaring that it is not permissible to use the term "corn syrup" to cover up and conceal something that won't sell un-

der its old and real name. Aye, there is where the shoe pinches. They wish to get a ruling in favor of "corn syrup" because, apparently, that would carry the impression that corn syrup is a new high-class food product made from the juices of the cornstalk after the manner that sorghum syrup is made.

Glucose has earned for itself an unsavory reputation; it has a metallic, disagreeable taste—an article that will not sell if the public knows what it is getting. Apparently the glucose people understand this only too well, and, of course, looking to their own interests they do not propose to allow the decision of the pure-food commission to stand; therefore they have appealed to President Roosevelt and to Secretary Wilson, of the Department of Agriculture, asking for a stay of proceedings, during which they can present various arguments to the public and cause it to believe that corn syrup is the real name for a product made by treating *any kind* of starch* with sulphuric or hydrochloric acid.

Dr. Wiley and his associates have stood for pure food, and have all along been strenuous in insisting that all food stuffs be so labeled as to convey no deception. The general public does not know that corn syrup, so called, is glucose; and to allow this change of name would be the grossest kind of deception — a thing that would be entirely out of harmony with the provisions of the national pure-food law under which Dr. Wiley and his associates are working.

The glucose interests are alarmed, and they have good reason to be; for neither President Roosevelt nor Secretary Wilson has intimated that either one of them proposes to reverse the decision of their subordinates. They have simply signified their willingness to hear argument pro and con; and therefore it means that, unless bee-keepers and all producers of honest pure cane syrups and sugars register a mighty protest, *at once*, against making any change, there is danger that the decision of the pure-food commissioners may be reversed.

We are sure that the President, *provided* the full facts are put before him, will rule in the interests of the people and not in favor of private corporations and small retailers whose opinions would be biased by the profits arising from the sale of so-called corn syrups.

We urge every bee-keeper, as soon as he reads this, to write immediately a concise letter to Dr. Harvey W. Wiley, of the Department of Agriculture, Washington, D. C., commending the course he and his associates have taken in ruling against the use of the words "corn syrup" for a product known as glucose. A short but expressive letter should be addressed to Secretary Wilson, Secretary of Agriculture, and to President Roosevelt, Washington, D. C., requesting both to sustain the action of the Pure-food Board in placing a ban on corn syrup.

* Glucose can be made of *potato* starch, as it is in Germany. Corn is not, therefore, an essential source of glucose, and it should not be called corn syrup.

We have nothing to fear from glucose when it is called by *its right name*. Since the new pure-food law has been in effect it can no more masquerade under the name of "honey," "maple molasses," or New Orleans molasses, etc., but it must be sold for *what it is*. It looks very much as if the glucose interests, seeing that glucose will not sell under its regular name, must disguise and cover it up by calling it by some new name under the pretense that glucose is the product of corn. While that may be true in one sense (as it may also be of whisky), yet to call glucose "corn syrup" is to place legitimate syrups and honeys in unfair competition with glucose embellished with a real nice name.

We hope our readers will not lose a moment of time, but sit right down as soon as they read this, and *do it now*.

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THE HARRISBURG NATIONAL CONVENTION; THE SECOND DAY'S SESSION; THE GROWTH OF THE NATIONAL BEE-KEEPERS' ASSOCIATION.

GENERAL MANAGER FRANCE, after the appointment of some committees, presented his general report. In making a comparative statement of the growth of the membership during the last two or three years he said:

> In 1906 we had 410 members who paid one dollar each. In 1907 we had 416 members who paid one dollar each. In 1906 there were 825 in co-operation with our Association who paid fifty cents each; whereas in 1907 there were 1008 who came in at that rate. The additions for 1906 alone were $821; and up to the time I left home were $974 for 1907. Of those, New York State has contributed by single membership 56 at one dollar each; and one county association consolidated, coming in, gave us 21, giving us $10.50.

He then referred to the statistical crop reports which he had been gathering and sending to members. But this year he had sent out no such statement because he could count on his fingers all who had a crop.

He referred to the fact that the good offices of the National Bee-keepers' Association had been used to further the interests of the national pure-food bill, which has since been enacted into law. He believed this to be one of the grandest things the government has ever done for bee-keepers.

He had something to say about a special honey-label for members of the Association, which he was furnishing; and then he referred to the fact that some member would order only fifty labels notwithstanding it would cost just as much to print fifty as five hundred. He did not see how any one could object to the outlay of a dollar for that number. He thought, therefore, if any one used labels at all he could afford a dollar for 500 special Association labels.

After some discussion we listened to an exceptionally interesting paper by the government representative in charge of apiculture, Dr. E. F. Phillips, on

THE CARE OF EXTRACTED HONEY.

It will be remembered that some three or four years ago General Manager France collected a large number of samples of honey

from all portions of the United States, and exhibited the same at the National convention that was held during the St. Louis exposition. These were subsequently turned over to Dr. Phillips, who in turn gave them to the Bureau of Chemistry for analysis. These analyses, Dr. Phillips thought, constituted one of the most complete series that were ever made of American honey. Several things came up during this analytical work which needed some explanation, and he therefore prepared a paper on the care and production of extracted honey with a view of bringing these points out.

He first drew attention to the fact that nectar contains a large percentage of water, which, during the process of ripening, will be reduced down from 20 to 25 per cent in normal honey. Some very ripe samples would have as little as 12 per cent.

The ripening of honey consists not only in the evaporation of a surplus of water, but of the transformation of the sugars of the nectar into the levulose and dextrose of honey in about equal proportions. Unripe honey contains a large proportion of cane sugar; and the longer the honey remains in the hive, the less sucrose (cane sugar) will be found.

While pure honey will contain all the way from zero to 8 to 10 per cent of sucrose, the purest are those that contain the least. The United States standard of pure honey allows no more than 8 per cent. The thorough ripening of honey can not be too strongly recommended, and he favored bee-ripened honey rather than that ripened in tanks.

### THE CANDYING OF HONEY.

He spoke of the peculiar characteristics of different kinds of honey in reference to the matter of candying, and told of the methods of correcting this by bringing the honey up to a temperature of 160 degrees; but he cautioned not to heat to a higher point. A greater degree of heat, and especially as high as the boiling-point, will change the character of the honey, spoiling its flavor, and from a chemical point of view it could not be considered as true honey. He advised against drawing off the liquid portions of honey from that which has been candied, because what is left will not be honey.

Honey is made up of dextrose and levulose in about equal proportions. The candied or solid portions are largely dextrose, for the levulose probably does not granulate at all. If, then, the liquid portion, consisting largely of levulose, sucrose, and water, be drawn off, then what is left will not be honey. He also emphasizes the necessity of stirring up honey when drawing it off for bottling purposes; for it would be unfortunate to have a bottled honey that does not analyze according to the prescribed standard set by the Bureau of Chemistry. Such honey will have to be classed as adulterated or not honey.

The speaker drew attention to the fact that, in the popular mind, granulation is an indication of adulteration with sugar. This is, of course, untrue. Many bee-keepers, on the other hand, go to the other extreme by saying that granulation is an absolute test of purity. This statement is also untrue, since invert sugar, one of the adulterants sometimes used, will also crystallize.

He explained how age affects honey greatly. Repeated granulation and liquefaction year after year in some way affect the chemical composition of honey. Some one submitted to the Bureau of Chemistry some honey which was known to be absolutely pure, but which was 35 years old. It had too large a percentage of sucrose or cane sugar.

There is only one condition, Dr. Phillips explained, where it is desirable to heat honey hotter than 160 degrees, and that is to kill the germs of disease. He advised diluting infected honey by using an equal amount of water, and then boiling it thoroughly for at least 30 minutes, or, better, an hour.

### VARIATIONS IN HONEY.

The speaker called attention to the fact that well-known honeys from different plants vary considerably in taste, color, granulation, etc. While granulation may be considered a property of all honey, yet the fact that some granulate more than others is due to a larger or a lower ratio between dextrose and levulose. The following table will make this clear;

NORMAL HONEY (FROM NECTARIES OF FLOWERS).

1. High purity (high in sugars, relatively low in dextrine, gums, and other non-sugars).
   - *a* Levulose type; *e. g.*, mangrove, tupelo, sage.
   - *b* Average type.
     - *a* High in sucrose; *e. g.*, alfalfa.
     - *b* Low in sucrose; *e. g.*, buckwheat.
2. Low purity (relatively high in dextrine, gums, and other non-sugars; *e. g.*, basswood, sumac, poplar, oak, hickory, apple (most tree honey).

ABNORMAL HONEY (NOT FROM NECTARIES OF FLOWERS).

(Generally high in dextrine, gums, and other non-sugars.)

1. Honey-dew honey (from aphides and other insects).

Coniferous honey (plant exudations not from nectaries).

Honeys containing approximately the same amount of levulose and dextrose, and which are high in sugars (average type), granulate readily. Very few honeys have more dextrose than levulose. If, however, the levulose is considerably greater than the dextrose (levulose type), or if the non-sugars are relatively high (low purity and abnormal honeys), granulation is retarded. Some honey-dew granulates rapidly; but no abnormal honeys of that type were included in the samples examined, and consequently they are not included in the table.

This paper called forth a great deal of interesting discussion, winding up with a vote of thanks to the Bureau of Entomology, and to Dr. Phillips in particular, for his interesting and valuable paper. Indeed, some experts were present, including Mr. France and Mr. W. A. Selser, who pronounced it the best contribution on the subject that had ever been given before the National convention.

We have attempted to give only the main points of the paper; but those who desire to see the full text are referred to the verbatim report which General Manager France will soon send to the members of the National, if he has not already done so.

It should be observed that this report is well worth the dollar paid for membership,

to say nothing of all the other benefits which one secures.

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### SPLIT SECTIONS A LA HAND, VERSUS THE REGULAR STYLE OF SECTION WITH A FULL SHEET OF FOUNDATION CUT TO FIT.

DR. C. C. MILLER has commented quite at length on the subject of split sections as discussed by J. E Hand and H. H. R. on page 18. As there is hardly space to admit the whole discussion in his regular department of Stray Straws we are placing it here at this time in order that the reader may get the benefit of further discussion before the question is forgotten. Dr. Miller writes:

Split sections, as compared with putting in foundation with hot wax, are well discussed by H. H. R., p. 18. Pardon the egotism if I suggest something better than either—bottom starters.

First, let me say that the objection to the appearance of split sections, if I am rightly informed, is a very serious one in England, where they are more used. I feel sure that, if my sections had a split with the wax showing through on top and sides, it would reduce the price very much more than 50 cts. a thousand. That one objection gives the preference to the hot-wax plan.

But compare either plan with bottom starters. If a section is fastened securely at top and bottom it must ship safely, even if it does not touch either side. The bottom starter as well as the top starter is fastened just as securely as by the hot-wax plan, for it *is* the hot-wax plan. How about the sides? Well, I do not think you could tell by the looks of my sections whether the sides had been hot-waxed or not; so, as far as safety in shipment and looks are concerned. I believe hot-waxing a full sheet has *no* advantage over the bottom starters. The only question, then, is as to comparative cost of labor in putting in. You estimate the time for hot-waxing at about 200 an hour. Possibly an expert might do better than that. But an expert will put top and bottom starters in 480 sections in an hour. A single piece to fill the whole section must be cut with great exactness.

A one-piece section is not always exactly square until forced square in the super. If foundation is hot-waxed in a section that is a little out of true, and it is then crowded square in the super, there will be trouble. A variation of ⅛ inch or more in cutting top and bottom starters will make no trouble, and there will be no trouble with a section somewhat out of true.

When the section comes into the consumer's hands, if there is any preference it will be in favor of the bottom starters, for the hot wax poured all around ought to make it just a *little* harder to cut the section clean from the wood.

Against bottom starters it must be said that more skill is needed in using the hot plate, or an occasional top starter may drop before the bees can fasten it, while any slouch can make it secure by daubing on enough wax with the other plan. Your honor, we here rest the case.

The objection raised by Dr. Miller as to the unpopularity of these sections in England is a very serious one We raised this point with Mr. Hand in private correspondence some months ago, stating that, in our opinion, such sections, if sold largely in this country, would give rise to the old comb-honey canard, because the consumer, not understanding the nature of foundation and its uses, would be likely to jump to the conclusion that the contents of the section were "manufactured," because he could see undeniably the handiwork of man. The foundation projecting through the wood on three sides would be almost sure to arouse his suspicions.

In relation to this point Mr. Hand wrote that he had found no trouble whatever; but we feel firmly convinced that, if such sections ever become popular with bee-keepers, we shall have to be constantly "explaining" and always on the defensive.

But this is not the only point. Such a section, with foundation projecting through the top and sides, is unsightly compared with the neat clean face of the regular section. That fact will hardly admit of argument.

In this connection a valuable article on the subject has just come from E. F. Atwater, Meridian, Idaho; and while we have not the space to give the whole of it in this issue we wish to present herewith the part having an especial bearing on this question. We expect to publish in our next issue some engravings made from photographs which he sent. On the subject of starters, he says:

As I was the first in this part of the West to use sections containing a full sheet of foundation fastened on all four sides, and as that experience has covered several years, extending in part to the present, I feel qualified to say something about the results. In many cases the results are all that could be desired—beautiful slabs of honey without hole or blemish to mar their beauty. But here the (as yet) inevitable sagging propensities of all surplus foundation on the market, in hot weather, is a factor with which we must reckon. A full sheet of foundation as usually used, attached at top only, with 1/16 to ¼ inch space below it, will usually sag evenly, resulting in a comb even and smooth of surface. But if the foundation completely fills the section, being attached at all four sides, then when the sheet does sag, a bulge usually occurs somewhere near the bottom; and the bees, when the comb needs capping, are often unable to puzzle out a satisfactory solution of the problem; a depression or small uncapped area results, besides a tendency toward comb attachments to the separator.

But the downward sagging does not constitute the only difficulty. Under the manipulation (or "mandibleation") of the wax-workers, the sheet of foundation enlarges transversely, resulting all too often in another bulge in the foundation, and giving rise to another problem which is too difficult of solution for the untaught instinct of the bees, and this results in another blemish on the face of the finished comb.

In some localities the sagging of the foundation is undoubtedly more of a problem than in others. Wherever full sheets of foundation fastened on all four sides with hot wax are found to sag and buckle, we should expect that the same trouble would be found with foundation secured on the split-section plan. At any rate, it is quite important in these days that we make as few changes as possible in our bee-hive appliances. Where regular goods and regular outfits already in use can be made to do the work it would be folly to go to the expense of a change. In the case of the problem under consideration, we would say by all means stick to the regular section that one is using. We will shortly illustrate how any one, with home-made appliances costing only a few cents, can fasten full sheets, cut to a fit, into the section, and do a neat and perfect job.

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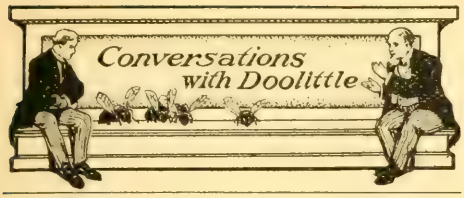
BE sure to read about what the glucose interests are trying to do in pulling the wool over the eyes of President Roosevelt and Secretary Wilson on the subject of calling glucose "corn syrup." It is to your interest to write at once to Secretary Wilson and to Dr. Wiley. Do it now. There is not a minute to lose.




STIMULATING IN THE SPRING WITH SHALLOW EXTRACTING-COMBS OF HONEY.

"I use the Danzenbaker hives, and winter the bees on their summer stands. In buckwheat bloom I expect to get a lot of shallow extracting-frames in Danzenbaker supers filled with buckwheat honey. Then I will store them away until the first warm day next February or March, when I can give each hive a super of these filled shallow frames. When any of the colonies are ready to store surplus honey I will raise this super put a super of sections filled with full sheets of foundation on the hive, then put on a bee-escape board and get the bees out of the shallow frames, which can then be stored until the following spring. Do you think I would be paid for the extra honey and work? Or would it be better for me to put the shallow frames of honey on the hives in the fall before I pack them for winter, instead of waiting until spring? Would the extra space to keep warm be a detriment?

"Would it be just as well, instead of giving a full super, to put four or five of the shallow frames of honey in the center of the super and leave the rest of the super empty? It seems as if even four or five frames would be more than any colony would ever use, and still it would stimulate them to brood-rearing in the spring.

"Girard, Pa. NORTON C. MILLER."

Regarding the first proposition and question I would say there would be advantages and disadvantages in carrying out that program; and in my judgment the disadvantages would more than overcome the advantages. For this reason I should say that it would not pay to work so—no, not even in a larger yield of honey, to say nothing of the time spent in the different manipulations.

The advantages would be two in number as I see it. The first would be the securing for the bees an abundance of stores, so that there would be no danger of the colonies ever becoming short to an extent bordering on starvation, or to their retrenching in brood-rearing; but this matter should be looked after in the fall by way of *knowing* that each colony has sufficient stores in the brood-chamber to supply all wants till the flowers give them an abundance the coming spring This is an easy matter if all colonies are carefully looked after in September, just as soon as the surplus of the season is over. Those not having 25 to 30 pounds of stores should be given full-sized Danzenbaker frames of honey to take the place of the light frames in the hive, or the colony should be fed the proper amount where such frames of honey are not on hand. In this locality it is of rare occurrence for any colony which is worked for comb honey to be short of stores for wintering and springing. Even during the unprecedented spring of 1907, not one out of twenty of my colonies ran short of stores.

The second advantage would be that of the bees acquiring the habit of entering the super freely while the super of extracting-frames was on the hive. Having been "frequenters" of this super they would more readily enter the super of sections when it was put on to take the place of the extracting-super, and in this respect quite a little would be gained, but nothing like enough to overcome the disadvantages, next spoken of.

Of all the time in the year when the brood-nest should be kept as warm as possible, early spring is that time; and the proposed plan of working not only breaks open a joint between the cover and top of the super, but one between the super and the top of the brood-chamber, at which joints the warmed air from the cluster can not only go out into the open air, but it will be fanned out by every passing breeze or high wind that blows. And not only this, but the ascending heat from the colony below will be up in this super at just the time when every particle should be economized for brood-rearing, so that the colony, instead of becoming strong in time to take advantage of the first opening flowers, would remain weak on account of the cracks all about the top part of the hive and the *much* too large brood-chamber which they would have through the added super. While I claim that the bees are enabled to confine the heat very largely inside the cluster, so that brood-rearing will go on quite extensively within the cluster, no matter what the conditions just outside said cluster are, yet the warmer the air outside of this cluster, the more the cluster will expand, or the less number of bees it will take to make the "walls" to the cluster or brood-nest proper, and so an advance is made by confining all the heat possible as nearly within the limits of the cluster as may be. And the adding of an extra super above the cluster in the spring is in direct opposition to nature's requirements, which, of course, is opposed to a paying crop of honey, or any pay for the labor performed in thus working.

Then, if Mr. Miller's bees are like mine, unless he puts a queen-excluder between this added super and the brood-chamber to the hive, he will have more or less brood in the extracting-frames at the time he wishes to raise them up for the section-super, which brood is just where he does not wish it, and will cost him the honey necessary for its rearing (besides injuring his extracting-combs), and the extra work it will make for him to get rid of this undesirable brood.

Again, this proposed plan militates little if any against swarming, which will be quite likely to occur soon after the bees have been run down out of the extracting-super into the sections. Such a plan could not be depended upon in the least when working an out-apiary unless it resulted in too weak colonies to swarm, or do little else to advantage.

Lastly, with the running of the bees out from these supers, and the storing of them away for the next spring's using, comes an invitation to a sumptuous feast for the wax-moths and larvæ, or else a continual fight to save these combs from being destroyed by the ravages of these pests. Of course they can be fumigated at the proper time, and then put in a moth-proof room; but all of this is extra work at a time when minutes and hours are of great value, and the results obtained would in no way compensate for this or any other of the disadvantages.

The answer to the second question about putting this extracting super of filled combs on in the fall would be the same as that given above, with the additional thought which Mr. Miller suggests with his question of "Would the extra space to keep warm be a detriment?" All unnecessary room during winter and early spring is *always* a detriment, and against the best interests of the bees and their keeper.

His third question and proposition only add to the disadvantages through its giving additional empty space, either in taking the heat from the cluster of bees, or in the time and material for packing the space not occupied with combs, or in the building of drone comb in this space should a little honey come in from fruit-bloom before it was time to put on the supers of sections, and in running the bees out from these supers of extracting-combs. As I said at the start, the disadvantages of these proposed plans much more than offset any advantage which may be gained, and I am sure if Mr. Miller tries these things he will find the results as outlined above.

But, friend Miller, if you will make a change in your plan according to the following suggestions you will see all swarming stopped, and the bees will go to work in the sections as you never saw them before. Instead of the extracting-super, provide a Danzenbaker hive-body containing worker combs that are from one-fourth to two-thirds full of honey. When your colony becomes strong enough to need more room in March or April (possibly May, in your locality) put a queen-excluder on the hive, and place this filled hive-body on top leaving it there till it is time to put on the sections, and then put this upper story down on the bottom-board where the brood-chamber has been up to this time, putting your super of sections on top. Shake and brush all of the bees from the combs of brood and out of the brood-chamber, allowing them to enter what has previously been the upper story, now on the bottom-board.

If you tier this hive of beeless frames of brood over a weak colony, using a queen-excluder between, you will not only overcome the wax-moth nuisance but have your hive and combs filled with honey in the right shape for using again the next spring, and so on year after year. In fact, you will have just what you are looking for in your proposed plans, with all of their advantages, and *much more* added, and that with none of their disadvantages.

After having been buried up for a whole year, like a mouse under a haystack, here we are again Such a flood of material for the use of the editor has come to his sanctum that Pickings has stood aloof simply from motives of modesty. In the stack alluded to there have been Stray Straws, Notes from the Southwest, Mr. Crane's department, that of J. A. Green (a rare visitor, however), that of R. F. Holtermann, the crispy articles from J. E. Hand, E. W. Alexander, E D. Townsend, Prof. Cook, Doolittle—more than I can name. These men, in the short space of a year, have completely transformed the old plan of getting out GLEANINGS, and, as a matter of course, the hand-car has been removed from the track to make way for the Cannonball express. Besides, Mr. Morrison has devoted all his time to an examination of exchanges during the past year, and he has squeezed the lemon perfectly dry. But for all that, the manager of this department has been busy on every page and line of GLEANINGS during the absence of Pickings, in the endeavor to have this journal maintain as high a degree of typographical accuracy as possible under the circumstances. With the help of a friend I have prepared the following, which may be of interest to some:

### SUBTLE DIFFERENCES IN COLONIES.

To help explain why some colonies do so much better work than others, even though the conditions of all seem to be equal, the editor of the *Bee-keeper's Review*, in the December issue, republishes a translation of an article by C. J. H. Gravenhorst, who worked out the problem to his own satisfaction about twenty years ago. Briefly, the reasons given by the celebrated German authority are as follows:

1. The ideal colony must have a faultless queen; hardy, sound of body, and, above all things, fertile, and her progeny distinguished by diligence.

2. Nevertheless, such a queen alone does not make an ideal colony. At the right time, that is, when honey is coming in freely, there must be plenty of empty comb that no time nor honey be lost in building comb.

3. Our ideal colony must swarm at the right time or not at all. It swarms at the right time when it swarms so early that the queens of the after-swarm, if such are allowed, become fertile, and the first or prime swarm has its combs completed before the opening of the main harvest.

4. The ideal colony must not be over-populous. A hive is over-populous when its working force is too great in comparison to the dimension of the hive and to the number of wax-building bees.

Such a condition is intolerable to the bees and they try to help themselves by loafing. Their instinct teaches them to begin this loafing even before the hive is over-populous. The bees seem to see the combs are filled and capped, that bees are daily hatching, and that they will soon be crowded. A colony in such a condition will never perform the wonders in gather-

ing honey that we may expect from one less populous. Such a colony feels instinctively that its abode will soon be too small, and the swarming fever sets in, and we know that when that is awakened the bees will continue to loaf. At the most, only as much honey will be gathered as is needed for making the swarming preparations. A colony with the swarming fever is of little value as a honey-gatherer.

5. The best honey-gathering colonies are not kept at home during the best honey-flow by the nursing of too much brood. If there is too much brood in proportion to the working force, most of the honey gathered will be consumed by the brood. The bee-keeper whose bees rear a large amount of brood during the main honey harvest, or near its close, will find, as he stands before his colonies at the close of the harvest, that, although they are strong in bees and the combs faultless, the latter will be *empty* and will *stay* so.

### SMALL NUCLEUS HIVES FOR QUEEN-REARING.

The queen-breeders over the country have adopted various means for providing nuclei, or small colonies, in which young queens may be temporarily placed until after they have been fertilized. Many have made use of two or three frame nuclei in standard-size hives; but a few years ago "baby nuclei" were advocated on account of the small number of bees needed to fill them and the general inexpensive equipment required. But because of the care necessary to maintain such abnormally small clusters of bees the larger twin-mating boxes were developed for the purpose of providing a small hive large enough to hold two clusters of bees that would, in a measure, take care of themselves. These have proven very satisfactory, although some of the experts are beginning to feel that it may be perhaps cheaper, after all, to use nuclei on full-size combs and frames, thus saving the expense of odd-size hives and fixtures.

In this connection it is interesting to note the report of W. H. Laws, a veteran queen-breeder, as given in the November issue of the *Bee-keepers' Review*.

Small nuclei for queen-rearing are still a success with W. H. Laws, but he now reports that, taking the whole season through, there is really less labor by employing three-frame nuclei of the regular size. Such nuclei take care of themselves right along, month after month.

### WAX-PRESSES.

The readers of this journal will remember, doubtless, that we have advised against the use of hot-water wax-presses except in the case of very large producers—those whose output is 300 lbs. or more of wax per year. One of the reasons for our opinion was the discoloration of the wax due to the long-continued heat to which it is almost of necessity subjected. Of course, if the wax is not allowed to remain for any length of time on the surface of the boiling water it will not be discolored to a great degree; but it is not an easy matter to keep the wax running off as fast as it rises to the top.

At the convention of the Ontario Bee-keepers' Association, which was held in Toronto, Nov. 13, 14, and 15, the Hershiser hot-water press was compared to the Hatch press. Mr. J. L. Byer, in the *American Bee Journal* for December, gives the following report of this discussion:

Relative to a question on wax-presses, those who had tried the Hershiser admitted that, while more wax could be obtained, yet the quality was not so good as that taken with the Hatch-Gemmill press. Later on during the convention, Mr. Sibbald, by means of a model, explained the workings of a press (one member called it a cross between the Gemmill and Hershiser presses) which he thought superior to either the Hatch-Gemmill or Hershiser. (Cuts of this press with Mr. Sibbald's explanations will appear in the printed annual report of the convention.)

### SOME VITAL POINTS IN BUILDING UP A HONEY MARKET.

It may be that salesmen are born and not made; but we are inclined to doubt it. At any rate, any salesman may improve. Mr. M. V. Facey has an excellent article in the *Bee-keepers' Review* for November in which many sound doctrines are preached. We should like to give his thought in full, but we have room for only a part of the article. He mentions the fact that he now has about 1000 customers; and under the heading of "Don't Argue, but Give the People what they Want," he says:

In building up this trade I have at all times placed myself in the place of both buyer and seller. You have, first of all, to learn the tastes of your customers. If you are building up a home trade, you will, as you start out, find that one person likes basswood honey, another clover, another an amber, and a fourth buckwheat. A great many salesmen will try to persuade certain ones that their taste is a mistaken one; that such and such honey is better than the one their taste calls for. This is a great mistake. No man wants the salesman to dictate to his tastes, as he knows perfectly well that the honey he likes the best *is the best for him;* and this is what the wise salesman should offer him. And right here I would say that the idea of cultivating the public taste for this or that kind of honey is largely a mistake. People have their tastes; they are largely fond of honey; and, instead of cultivating a taste, we have only to *cater* to it. I find this is an art that bee-keepers learn very slowly. We are too apt to set up our own standard, and expect everybody else to adopt it because it is *ours;* and thus, in the supposed perfection of our own knowledge, we are unable to detect our own defects. We should rather, while we have an eye turned upon the public, studying its demands, have the other eye turned back upon ourselves, studying *our own defects* of both trade and production.

Therefore, instead of trying to build up a trade by belittling your rival, you should learn wherein his goods excel yours, and bring your goods up to or beyond his standard. See that your honey is the best ripened, the best graded, and the best put up, and then, as you go out and sell this honey, people will appreciate it; and when you have a man's honey trade, and furnish him with such goods, he will stick by you and even give you a cent or two a pound more than he will give your neighbor.

Every sale should be made as though your *whole trade* depended upon that one transaction. I once bought honey of a man who kept out his inferior goods for his home trade, with the remark that it was "good enough for them." That was the opposite of what I am trying to impress upon my readers. If that man had valued his home trade, and if he cared in the least to build it up, he should have kept his very choicest honey for *it*, and, instead of a small trade at a low price, he might have had a good trade at a good price that would easily have taken all his honey.

I said it was necessary to furnish each buyer with the kind of honey his taste preferred. To do this we must learn to grade honey. This is a weak point with many bee-keepers and with some dealers. I have been offered "clover honey," by large and experienced bee-keepers, that seemed to have hardly a trace of clover in it; besides, it was dark in color and strong in flavor at that. I have bought a lot of white honey and of dark honey of a dealer, wherein much of the dark honey was *whiter* than the *white*.

To hold a person's trade, we must furnish him *what he wants*. If a man is dainty in his tastes, and wants clover honey, and we furnish him honey-dew a time or two, we will find he will very promptly avoid our honey quite as persistently as our satisfied customers

stick by us; and, as one pleased customer will often bring half a dozen more buyers, so one unsatisfied customer will often deter half a dozen from buying.

Mr. Facey's second point is: "Sales largely depend upon pushing the goods." Concerning this, he says:

We must keep our goods before our customers. A family promptly supplied will use several times as much as one that has to hunt for the goods. I know families which, when promptly supplied, will use from twenty to thirty gallons of honey per year, who otherwise do not use more than four or five gallons. Honey is an article which is used by many people, or, perhaps, by most people, largely in proportion as it is drawn to their attention, and made easy to obtain. Its sale must be *pushed;* hence store-keepers often so signally fail in building up a trade. It is a luxury, but where constantly supplied it is then a necessity.

I have not found the fear of adulteration much of an obstacle in my trade. I am very particular as to the purity of my honey, and I absolutely guarantee all I sell. If any thing puzzles my customers I regard it as a favor to be permitted to clear up the matter. We often sell our honey to people who know nothing about bees, and, therefore, when so many bee-keepers know so little about honey, we can not expect them to know much, except that it is pleasant to the taste and a desirable article of food. I acquaint them with the workings of the pure-food commission, and am always pleased to have any test made. Our very willingness to submit our goods to the test greatly increases confidence in their quality and purity. We should avoid trying to tear down another's reputation in order to build up our own; and when I see this done my suspicions of the critic are always aroused, and I make purchases of such people with extreme care. It certainly is no recommendation of *our* honey to say that our neighbor's is *poor*. If it *is* poor, the people will soon find it out without our officious declaration, and the *suspicion we attempt to place upon him will almost invariably react upon ourselves.*

Previous favorable acquaintance with the people along a given route goes far toward making the machinery run easy in the sale of honey.

A prosperous 1908!

Save the pieces. It means much in the course of time.

All successful men have well-laid plans. Have you?

That Marbach queen-excluder seems to be quite an improvement. I saw samples of it.

Resolutions of the right kind are good if carried out; so let us resolve to make our industry better than ever. Keep better bees, and keep bees better.

A mild winter and lots of rain here in the South has given a new impetus to bee-keeping. The bees are in fair condition; and most of the main honey-yielding plants are already well grown and bee-keepers are hopeful.

Plurality of queens has not appealed to me. It may pan out something good later, but at present it seems better to keep *one good queen* in each separate colony.

The divisible brood-chamber, after a ten-years' trial and comparison with others, has given excellent results. With me they are time-savers, and afford me both pleasure and profit. I can produce more honey with them with less labor and expense. This kind of hive is not a "new-fangled" thing with me.

"Sour clover" (*Melilotus Indica*), mentioned on page 1310, grows wild here, but is not considered valuable for bees, as its blooming period here is quite short, and bees are not always present. It is an annual here, naturalized along the southern borders of Texas. When I first saw it before blooming it was mistaken for white sweet clover. The fact that it grows so well indicates that the other species, more valuable to the bee-keepers, *M. alba* and *M. officinalis*, should thrive here also. I will try them.

Stachelhausen used divisible-brood-chamber hives extensively for years; and with these and shaking swarms he managed out-apiaries successfully. With these divisible hives, swarming can be successfully controlled when running outyards for either extracted or comb honey. For years his average per cent of swarming has been only 2. His son-in-law, Mr. Ed. Dietz, succeeds him in his business, and is as enthusiastic about such hives. When supplies are made at home such hives are cheaper, for they may be cut from narrow lumber.

Organizing the bee-keeping forces for better production, wiser distribution, profitable prices, and better care of the apiary, is work that should be given more attention. There is no better time to begin this than now. The time has come when organized efforts will bring better results. Education is necessary in all branches, and this should be eminent in association work. It is not how much honey is produced, but how much of it is better, and then sold in such a way that it will bring most profitable returns. By beginning with the better care of the apiary during 1908, and applying it to all the other branches as well, a step would be made in the right direction.

A round to all the apiaries should be made in early spring. The colonies should be examined for stores, queenlessness, and other conditions, and noted. This will save many colonies which often starve when the owner thinks they have sufficient stores or are all queenright and well. Take along an ax, a hoe, and a rake, and cut off those low limbs and trim up the trees where the veil caught last summer. Cut out the stumps and other rubbish; rake it off, and see the effect. It shows up nicely. "Little drops of water,

little grains of sand, make the mighty ocean and the wide, wide land." So in bee-keeping. Little wastes of honey, with water, make mighty barrels of vinegar, and little bits of wax, generally wasted, make great big cakes.

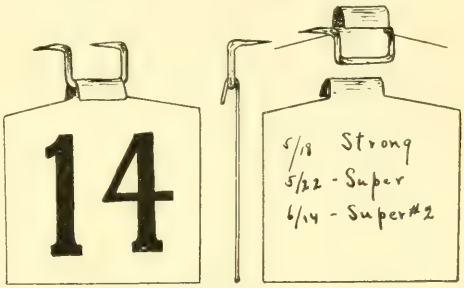
HONEY PRICES; TEXAS VS. THE NORTH.

It seems somewhat strange that complaints should arise against the honey-market quotations of the northern and eastern markets. That there was a wide difference in the quoted prices of honey in the different markets was noticed; but why this? Is not the local bee-keeper of the North, who is so far in advance of us Southerners, in position to straighten these matters out to one and the same level in all these markets adjacent to each other, allowing a slight difference for difference in freight, etc., at more distant points? Who makes the prices of honey, anyhow? and if the dealer fixes his quotations, what does he go by?

In this one thing I believe some of us here are ahead. It is becoming more and more customary for buyers and dealers here to write us for "prices on your honey." For years I have quoted *my own price*, and regular price lists are sent out. First, it is ascertained what the prospects are, and how large the crop will be. Then a price is set, and in this way a cent or more a pound above other prices has been obtained.

HIVE-NUMBERS.

It is well to have each hive with its number so a record can be kept of it. Many ways of applying such have been tried, but nothing has given me more satisfaction than the one pictured just above. They are made of heavy tin, painted on both sides. On the front is the number, while the back is used for keeping records of the colony with a leadpencil, so they can be easily erased when necessary, and the surface used over again. As this side is protected against the wall of the hive it is not necessary to write so it can not be erased.




SCHOLL HIVE-NUMBER—DETAILS.

Notice that a bent crate-staple is used instead of a straight one or a nail. It is done for the reason that the latter would soon be driven into the wall of the hive-bodies when these are handled, and the "numbers" could not be hung on them. With the bent staple this is quite overcome, for it acts like a spring, and will not go deeper into the wood. With this spring-like pressure the tin number-plate is held firmly after it has been hooked in place. Such a staple is put on each end of all hive-bodies so that, no matter which end is placed forward, there will be such a staple on which to hang the number. It is not necessary to unhook the tin for making records on the back. Just stoop down beside the hive; lift up the lower end of the tin on its staple hinge, and examine the notes or add more. These will be upside down after the tin is turned up, and are readily read from the top. Try some of these, and report. Perhaps they can be improved.

THE "SCHOLL HIVE-NUMBER" IN USE.

WHAT SHALL WE CALL THEM—

"section," "story," or "brood-chamber"? For want of a better term, one of the portions of a divisible-brood-chamber hive has been called a "section," and I have often used it without conflict here, because sections of the other kind are very little used

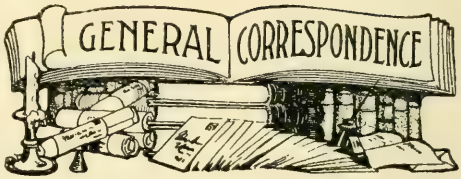
in the South, comb honey in sections being almost a thing of the past. Dr. Miller, page 1308, does not like the term, but wants it called "story." Editor Root objects to that as meaning a full-depth hive-body, and suggests "brood-chamber" as a better term. I object to all of these terms, especially the latter, for the brood-chamber proper may consist of several parts of the divisible-brood chamber hive, often three or more being used. Besides, the same parts are continually changed about, sometimes the lower, and then as the upper portion of the brood-chamber.

Better call them "cases." A divisible-brood-chamber hive consists of a series of shallow cases, two or more for the brood-chamber; the same kind of cases, and frames for extracted and bulk-comb honey supers, and such cases with sections, instead of frames, being used for producing section-box honey. They can be called supers when used above for honey, and are "brood-cases" when used for the brood-chamber—thus two or three cases or more for a brood-chamber. Then we can call them the lower case or upper case of the divisible brood-chamber, and know just what is meant. There should not be any confusion between cases of brood of such hives and shipping-cases of comb or extracted honey. On the hive the shallow cases are always called supers, so there's no confusion between these and shipping-cases of honey.

### RAPID GRANULATION OF HONEY.

Never did I see honey granulate so quickly as this year. It caused considerable trouble in the markets at the beginning of the season. Honey extracted in April, May, and June would, in many instances, granulate in ten days after it was taken off the hives. As a good harvest was obtained in most of the main honey-producing sections of Southwest Texas it was sent to market in hundreds of carloads in a very short time. Most of this was bulk comb honey in cans, which made it worse, and hence it left a large stock of unsalable honey on the dealers' hands This caused a slowing-up of sales, as many were afraid to buy more; but the demand stiffened again rapidly after the granulated honey was out of the way. This was not done without much trouble, however, as it necessitated melting up the granulated comb honey and separating the wax from it.

After this experience, the majority of bee-keepers heat all their extracted honey, before shipping it to market, to 150° F, which delays granulation for a considerable length of time. For bulk comb honey the liquid honey is heated to the above temperature, and then poured over the packed comb honey in the cans while still hot. The comb honey will not granulate as fast as the extracted would; and by heating the latter before putting in the cans with the comb, the whole mass is kept from granulating a long time. Of course, it will granulate at the approach of cold weather late in the season.




## SCIENTIFIC AMATEURS.

### The Modest Small Bee-keepers.

BY E. R. ROOT.

Among those who attended the Harrisburg National convention was Miss Susan E. Williams, of Moorestown, N. J., a suburb of Camden, opposite Philadelphia. It is true she took no prominent part at that meeting, yet it was easy to see that she was an enthusiast and a good listener. Such people always help a speaker by their presence.

MISS SUSAN E. WILLIAMS, AN ENTHUSIASTIC AMATEUR BEE-KEEPER.

While Miss Williams has kept bees for only a comparatively short time, she represents a type of "scientific amateurs," if I may use the phrase, who have done much to enrich our bee literature in all countries. It is these people who occasionally give to the bee-keeping world some practical suggestions as well as some scientific facts. Miss Williams, while she belongs to this class, is exceedingly modest in her attainments in bee-lore, especially for a beginner. Her neat little apiary in her back yard, where she has found

MISS WILLIAMS' APIARY, AT MOORESTOWN, NEW JERSEY.

so much pleasure and profit, is shown herewith.

It seems one of her friends asked her to give a series of talks on bees and other natural-history subjects. The result was, she took up the study of bee culture with all her heart and soul, and finally became the possessor of a modest little back-lot apiary, types of which one can see all over the United States. She started with two colonies in May, 1905, and in the spring of the following year she was the happy owner of six colonies, and at the present time she has something like 25. Her crop last year amounted to 1000 lbs., mostly extracted, and two colonies gave a return of over 100 lbs. each. For one only two years in the business this is not a bad showing. Had she not been familiar with bee-literature she could scarcely have accomplished this.

When I asked Miss Williams, toward the close of the convention, if I might have a picture of her and her bee-yard for publication in GLEANINGS she looked at me somewhat curiously as if inquiring why her personality would be of any value in a bee-journal. She was more curious still when I explained that she was a "type." "A 'type' of what?" she asked. "Of a class who are far more numerous than those who are engaged in bee-keeping solely for the 'almighty dollar.'"

There are thousands and thousands of "back lotters" among the professional people, and nature-lovers who do more to popularize honey among the masses than any other class of bee-keepers, and it is to this class that we wish to pay our respects at this time, for they are performing an invaluable service.

Perhaps some of our lady bee-keepers will recognize Miss Williams as the one who contributed an interesting chapter in our booklet, "Bee-keeping for Women." On reading this, one can not help feeling impressed with her enthusiasm and love for this most fascinating of all nature-studies, bee culture.

I am glad to introduce Miss Williams as a modest representative of her class, because I think GLEANINGS has not made enough of those who are in the business, not for the dollars and cents, but for the mere love and pleasure they find in delving down into the hidden secrets of nature. We wish there were more like her, because the one who is looking only after the glittering dollars very often misses some of the most wonderful things this blessed old world has to offer.

## AN APIARY UNDER ROOF.

### An Open Shed over the Hives for Protection.

BY WILLIAM F. OTT.

As the space for my apiary is limited I built the "shed" as seen in the picture, a two-story concern which keeps the north winds and storms from the hives. The colonies seem to get along very well in these quarters;

AN OPEN-SHED APIARY IN PENNSYLVANIA.

This affords partial shade in summer and protects the hives from the cold north winds in winter.

and the building being shaded in summer by overhanging fruit-trees makes a very pleasant home for them. My leisure hours are spent, in summer, about the "bee-stand" which I enjoy very much indeed. I have one colony of the golden-all-over bees. I bought a fertile queen and introduced her to half a gallon of "loafers" which I scraped from the hives early in the morning, according to a plan which I learned by reading, and kept them "queenless and broodless" for 24 hours. Then having the queen on hand I introduced her and was indeed happy to find her all right and laying eggs later. Finally my anxiety was relieved to see the little yellow fellows on the combs, easily detected from the ones on hand before. They are getting along very nicely.

Johnstown, Pa.

## BEE-KEEPING IN TURKEY.

### Some of the Leading Honey-plants of that Country.

BY N. J. NICOLAIDIS.

I am a bee-keeper of Greek nationality—the first one, very probably, who has adopted movable-frame hives in this old country. From your excellent paper, to which I have been a subscriber these three years, I see that you are interested in bee-keeping all over the world.

My interest in bees and in movable-frame hives was aroused by a few hints in class by my professor in physics, and, as a result, I decided to find out if bee-keeping pays in this country on the shores of our beautiful Bosphorus. I started with one colony, bought from a farmer in my neighborhood, which colony was comfortably lodged in a barrel such as are used in this country for transporting water. The swarm that this barrel hive gave me in the latter part of April, which is with us the swarming season, was a really monstrous swarm, and was successfully hived in a Dadant hive of my make.

At that time I was a subscriber to a Swiss bee-journal edited in French, which, however, being too local, did not satisfy me. It was not without pains and eager researches that I found out one of your advertisements, and as a result I sent in my subscription.

My little apiary consists now of eight Langstroth hives with Hoffman frames. The bees in them are all descendants of their barrel ancestors, and are working pretty well indeed, notwithstanding they had comparatively little care from me, as I am obliged to be away most of the time. Next year I expect better results, as I have decided to run half of them for section honey on the Doolittle plan, with increase, and the other half for extracted on the Alexander plan of increase.

The important nectar-yielding flora of this locality are the following: Fruit-trees, white acacia, horsechestnut, little basswood, peppermint, ivy, and heather, besides some other minor sources that give a continuous light honey-flow all through June and the early part of July. Our most important honey-flow is that from the acacia bloom, giving a honey of fine flavor and light color. One defect of this honey-flow, however, is that it can not be kept separate from horsechestnut, which yields at about the same time a honey

of pinkish color and rather unpleasant taste. The honey obtained from heather is of dark color, and rather strongly flavored, granulating as soon as cold weather sets in; yet the sections made during this honey-flow are of the finest appearance with regard to wax and cappings. The ivy blooms at about the same time, and yields a honey of fine body and rather pleasant taste

Some time ago I ordered an Italian queen, and I hope to have her by the end of this month, when, if not too late, I shall try to requeen some of my colonies for the purpose of comparing the work of these Italian-bred colonies with the native species. The bees of this country are industrious, and winter well outdoors Their defects are that they are great propolizers, and rather cross in temper. Among my colonies I possess one which I imported myself from the neighboring country of Bulgaria. The bees of this Bulgarian stock are very probably allied to the Caucasians, because they are mild in temper and seem not to know the use of propolis and of stings. They are of rather small size, rather prolific, and not inclined to swarm. The sections which I have obtained from them are white, and well capped.

Please answer the following questions.

Is it true that some species of pine-trees yield nectar through a kind of insect, of the aphid family? I have heard some peasants of this country and of Greece assert this, but would not give credit to their assertions before I hear it supported by some more competent authority, especially as no pine-trees are found in my immediate vicinity to watch bees on; it is, moreover, said that a honey of delicate flavor and color is obtained from this pine-bred aphid.

My second question is about the chestnut-tree, of which we have plenty in this country. Does it yield any honey, and of what kind? I have seen bees work earnestly on them, but could not ascertain whether they were gathering honey or pollen.

Constantinople.

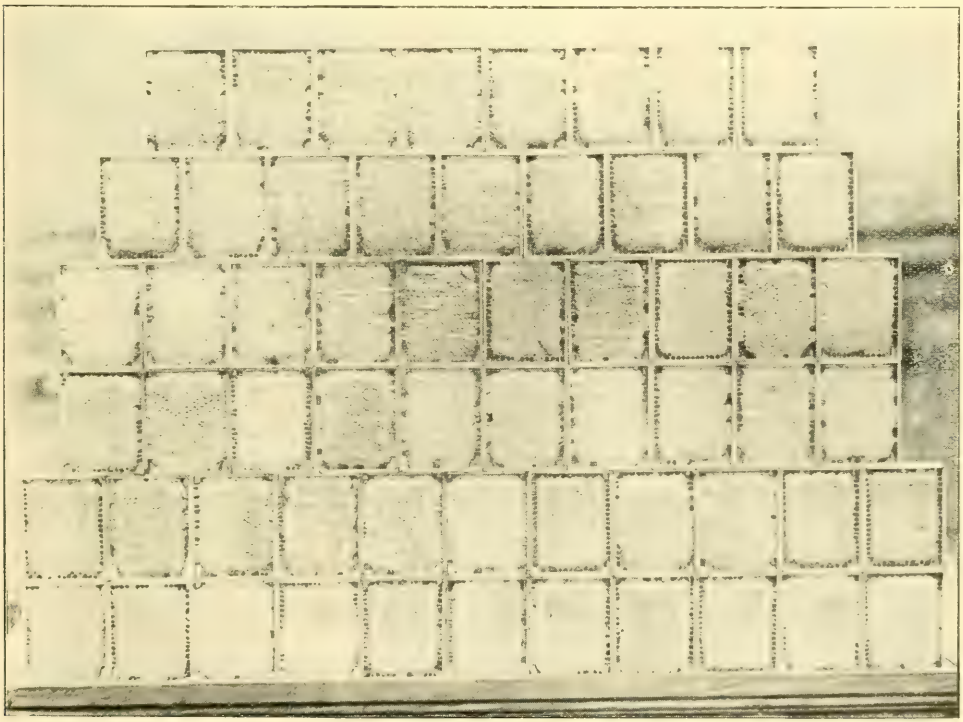
[The source of pine-tree honey is a mooted question. Chestnut honey is not very good. It does not seem to yield a great deal. It is better for pollen.—W. K. M.]

## NATURAL SWARMING AND REQUEENING.

### Prevention of After-swarms.

BY B. H. BRADLEY.

I am sending you a photograph showing 59 sections. The colony that produced them had 11 more equally good. I let my colonies swarm once, hiving the swarm with the old queen in a new hive, close to one side of the parent hive. Some of the bees hived with the old queen will return to the parent stock; but enough will remain to take care



A LOT OF FANCY HONEY IN 4×5 SECTIONS, PRODUCED BY A NATURAL SWARM.

of all the eggs the old queen can lay. If there are sections on the hive at the time the colony swarms (and there usually are), I leave them on. In eight or eight and a half days the young queen will hatch. Before it is time for the young queen to hatch I go through the parent hive, taking out all queen-cells but one, leaving the longest and best-looking cell to hatch. Some will say, "Suppose that one cell doesn't hatch." In all of the thirty years I have kept bees I never knew them to gnaw the wax from the end of a queen-cell unless that cell hatches. This is my guide, therefore, in determining which cell to leave. As soon as the young queen gets to laying I move the hive with the old queen, if honey is coming in plentifully, to the opposite side of the hive, thus adding greater strength to the parent hive, at the same time reducing the strength of the swarm with the old queen, which prevents the bees from swarming again, as they might do unless they were reduced in numbers in some way, or given more room. I find it more profitable to move them, thus getting their field workers in the parent hive. Almost any number of bees will stay with a *young* queen, with no desire to swarm, if given plenty of room in time. This is not true, however, with an old queen.

Since I began managing my bees in this way it has been no trick to produce prize honey, and lots of it.

Greene, N, Y., Oct. 28.

## PAPER WINTER CASES.

### Some Conflicting Reports Concerning their Value; how to Prepare Paper Cases.

BY H. H. ROOT.

The verdicts do not all agree concerning the value of the paper winter cases. We have received quite a number of reports from those who have used such forms of protection for colonies during the winter, and the results indicate that the paper method is at least well worth trying.

The idea is not new. Mr. Arthur C. Miller recommended the use of papers some years ago, and it is a well-known fact that many bee-keepers are using them to-day. The cheapness of such protection should appeal to every one, although, of course, no protection would be economical which resulted in a loss of colonies during the cold weather.

Mr. J. L. Byer, in the *American Bee Journal* for November, thinks that, for his locality, the paper protection is simply "no good." He tried the plan several years ago, and found that his colonies packed in the ordinary way came through in fine condition, while those with the paper wrappers nearly all perished. In view of his experience he does not recommend the paper for even spring protection.

From this it is evident that the paper should not be used in all localities; and, to be entirely frank, we believe that, if one has a system of packing whereby he can bring his colonies through the winter in uniformly good condition, he has the most economical

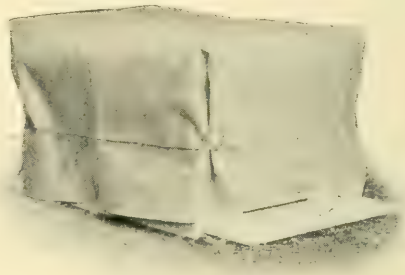


Fig. 1.—A colony in a single-walled hive prepared for winter by the addition of a heavy paper wrapper, under which are several thicknesses of newspapers covering chaff or straw placed directly on the hive-cover.

system that can be devised, and he had better let well enough alone.

But there are many who are obliged to provide protection for their colonies, but who hesitate about going to the expense of buying lumber and making outer cases. To all such we would recommend at least a trial of the paper wrappers.

We present herewith some additional illustrations to show more clearly the proper method of packing colonies for winter with paper cases. Fig. 1 shows a colony in a single-walled hive all ready for cold weather. The paper should be long enough to reach the ground to give the best results; and since the entrance would then be covered, a little of the paper should be torn away in front to give the width of opening desired.

Fig. 2.—The heavy paper raised and pushed back to show the newspapers beneath.

As explained in a former article, it is important to have the paper folded in such a way that water will be shed instead of directed into the fold of the paper. See page 1437 of the Nov. 15th issue.

Instead of nailing cleats on each side, it is

much quicker to tie simply a coarse string around the hive, paper and all.

In most cases it will not be sufficient to wrap but one thickness of paper about the hive. A little chaff or excelsior should be scattered around on top of the hive-cover; and if hay or straw is used, it may be easily pushed down over the sides and ends. Newspapers, pieces of old carpeting, or any similar material, may be laid over this packing. For the purpose of illustrating this part, the string was loosened and the outside paper raised to show the newspapers covering the packing material beneath. See Fig. 2.

Fig. 3.—Under the newspapers; excelsior or chaff is spread around on top of the hive-cover. If hay or straw is used, it may extend down on the sides and ends of the hive, providing extra protection.

In Fig. 3 the newspapers were rolled back to show the excelsior placed on the hive-cover.

## BEE-VEILS VARIOUSLY CONSTRUCTED.

### Wire-cloth Facing v. Celluloid or Glass.

BY E. R. ROOT.

When one goes over the country visiting bee-keepers he is almost sure to be surprised at the variety and complexity of the head-gear used. Like a great many other things, what one regards as simply perfect, the other would consider an intolerable nuisance—

THE ALEXANDER BEE-VEIL.

nay, he would prefer to have no protection whatever, with all the attendant stings, than to put up with some awkward contrivance that the other fellow uses. As it is impossible to make one shoe, hat, or coat suit every one, I am now submitting several different styles without any attempt to show them all, allowing the reader to select and make that which suits his fancy best.

First we will start with the simplest form of bee-veil — the one most commonly used. It is made of grenadine, brussels netting, or mosquito-bar, preferably black, in the form of a bag open at both ends. The top has a rubber-cord binding, and the bottom is bound by a silk ribbon. The smaller end is made to fit over the brim of any ordinary hat, and the other end is tucked into the coat or vest, or, when neither is worn, under the suspenders. The manner of adjusting such a veil is shown in Fig. 1. It slips over the hat, then the hands are passed under the suspenders in front, grabbing the lower end of the veil and drawing the edges as shown in Fig. 2. In doing this, care is taken to take up all the slack, front and rear, leaving the edges under the suspenders as shown in Fig. 3. When it is desired to remove the

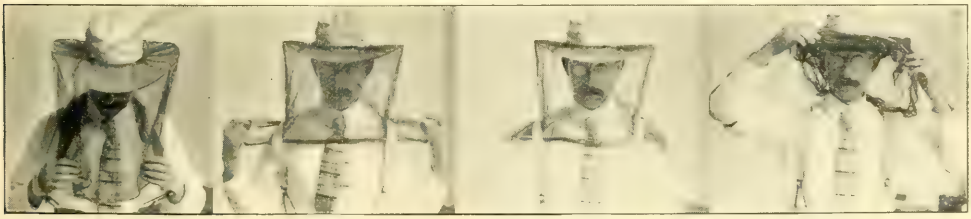


Fig. 1. Fig. 2. Fig. 3. Fig. 4.

MANNER OF ADJUSTING A BEE-VEIL UNDER THE SUSPENDERS WHERE THERE IS NO ELASTIC CORD IN THE BOTTOM.

Fig. 5. Fig. 6. Fig. 7. Fig. 8.

RIGHT AND WRONG WAY TO FASTEN A BEE-VEIL HAVING A RUBBER CORD INSERTED IN BOTTOM.

veil, or to raise it for the purpose of inspecting eggs in a dark comb, or when it is very hot and the bees are gentle, it can be easily lifted as shown in Fig. 4.

The illustration above shows the same veil but with a rubber cord gathered in the top and bottom alike. Many apiarists work without suspenders, coat, or vest, using a belt to hold up the trousers. Such a veil, by means of a large safety-pin, is hooked into the belt or lower portion of the waist, also catching the rubber cord and drawing it V-shaped over the front of the waist as shown in Fig. 5. This gives perfect freedom to the arms, and yet holds the bottom of the veil drawn tightly over the waist, making it bee-tight.

One might suppose that the manner of adjusting it as shown in Fig. 6 would be just about right; but he will find, if he tries it, that it will interfere with moving his arms, and in a few minutes it will slip up and hang loosely over his shoulders. Fig. 7 is a little better; but it ought to be drawn further, as shown in Fig. 5.

THE GLOBE BEE-VEIL.

Fig. 8 shows a manner of fastening it to the waist, recommended by several bee-keepers. A long cord is inserted in the bottom end of the veil, leaving plenty of surplusage and two free ends. These ends are drawn across the front, around the back, and across, then back to the front, and tied. This makes a very nice arrangement, and is preferred by many. But it has the disadvantage of tying one's head up in a sack, and making it impossible for one to reach up without untying to pick out a stray bee that may be crawling over the face, or to wipe off the perspiration. The veil with an elastic bottom will allow one to reach up at any time without interfering with the fastening; and in my opinion it is much superior to the long loop-string plan.

With any of these veils it is important to have at least a facing, black in color, and something that will obstruct the vision as little as possible. A white veiling is hard to see through. The finest thing for this purpose is silk brussels netting. For many years, and especially for traveling, I have used a veil made entirely of this material because of the little room it takes up in the pocket. It is easy to fold it up and slip it into the vest pocket, and it takes hardly any more room than an ordinary watch.

But there are many who object to these loose-flowing veils, especially under trees or among underbrush, where they are likely to get caught and torn. Many a time under the shade of an old apple-tree have I suddenly found myself "hooked" to some little sprig, and it sometimes takes several minutes to untangle; and one is lucky if he does not tear the veil in doing it.

POUDER'S CELLULOID-FRONT VEIL.

Of late there has been a tendency on the part of many honey-producers to go back to the old wire-cloth headgear of father Langstroth, such as he described in his "Hive and Honey-bee," published in the early 50's. Among this number is E. W. Alexander, who has adopted a headgear on the Langstroth idea, and the same is shown in Fig. 8. This is made up of special wire cloth of 8 meshes to the inch, black in color, and of so fine a wire as to obstruct the vision but very little. It is formed into a cylinder of suitable size, the top of which is covered with a gathering of muslin, and to the bottom is attached a skirt of the same material.

When I first saw Mr. Alexander and his men using this outlandish headgear I felt sorry to think that a man so progressive would be willing to be seen in such a thing, to say nothing of the inconvenience of using it all day long. I did not, however, express my feelings; but after some little persuasion on the part of my host I submitted to the ordeal of wearing one. At first I did not like it; but the longer I wore it the more I concluded it was not such an inconvenient thing after all. I continued to wear it, and finally came to the conclusion that it was one of the most serviceable and handy headgears it had ever been my lot to try.

The skirts fit loosely over the head and shoulders. The wire-cloth cylinder rests partly on the head and partly on the shoulders; and as it is made of stiff strong material the protector does not in any way touch the face. I soon discovered it was not necessary to wear any hat or cap; indeed, the white muslin top gave all the protection from the sun one would need, without any pressure on top of the head. As work in the bee-yard is usually performed in hot weather, this veil is very cool, because the summer breezes can circulate over the top of the head; and, what is more, there is no tight-fitting hatband from which the sweat will ooze in great drops.

While I have not tried these wire-cloth-facing veils extensively, yet I have talked with men who have; and I am convinced that for heavy work in the bee-yard it is a splendid and serviceable protection. There is no danger of getting it "hooked" on to a limb or twig, and no danger of having it torn, because both the muslin and the wire cloth are sufficiently strong material to stand any ordinary usage without damage.

But the feature of this veil that will be appreciated by many is the ease with which one can reach up under the skirt to get at the face to wipe off the perspiration with a handkerchief or pick off any bees that may be playing tag over one's bald head (my head is not bald). Another thing, it may be jerked off in an instant and laid on the ground, and it can be put on again just as quickly.

The illustration will show how the veil is made. I find a very good proportion for the veil is as follows: Wire cloth, 11 inches deep by 2 feet 7 inches long. This is rolled up into a cylinder and sewed together at the back. The top is made of a piece of muslin 10 inches wide by 2 feet 7 inches long. This is drawn together and tucked into the form of a circle, the tucks running toward a common center, at which point there may be a small hole. The skirt consists of a piece of muslin 11½ inches wide by the same length as the wire cloth—2 feet 7. This is sewed to the bottom edge of the wire-cloth cylinder, and hemmed at the bottom.

There are some others who have recommended veils with a glass front, glued to the veiling material Mr. Walter S. Pouder suggested celluloid; but both of these substances gather moisture from the breath, and thus totally defeat the object of their use by smearing up the glass or the celluloid so that it is impossible to see through it. The best material that I have ever tried so far is silk brussels netting or a fine grade of wire cloth.

For the very timid, a globe bee-veil seems to offer advantages from the fact that the protecting material is kept away from the face and head at all points, and the bottom securely locked around the neck by means of a metal band, the same also supporting the steel hoops that make up the globular shape, and hence the name. As a general rule this veil is not popular with the bee-keeper who is not afraid of stings, because it takes too long to put it on and take it off.

There are others, like the Coggshall, which combine a waist and bee-veil all in one. I will not give a description of this here, because it was shown in these columns, page 1497, Dec. 1, 1907.

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## WEBER'S ENTRANCE-CONTROLLER.

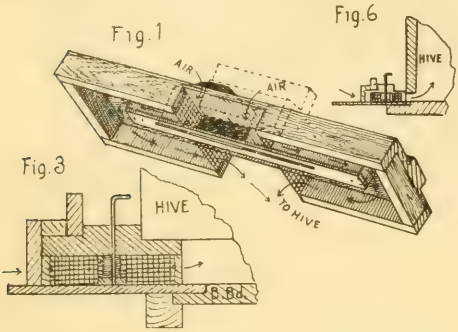
### How it is Used to Prevent Bees from Flying out on Bright Days, getting Chilled, and Dying.

BY C. H. W. WEBER.

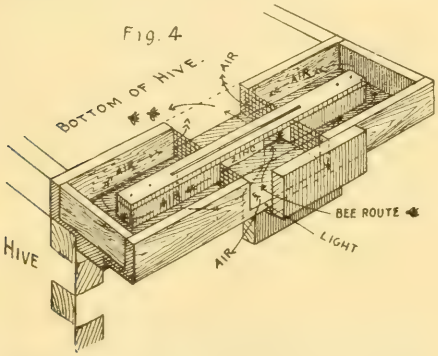
When the hot weather is over, say at the end of September or in the beginning of October, supply your hives with the entrance-controller. Push the controller into the entrance between the bottom-board and brood-chamber, which should leave a space ⅞ inch high: leave the metal slide out of the controller; also leave off the attachment. By doing this there will be an entrance through the controller, 4 inches wide and ⅞ inch high, formed.

Toward the end of October, or in the beginning of November, when the nights become cold, bring the metal slide into play by placing the slide into the slot of the controller by moving the same to one side, so that the entrance becomes partly closed, and so that there will be an entrance of one inch formed for the bees to go in and out the hive. At the same time, place the attachment on the controller so that the one-inch entrance made by moving the slide to one side becomes fully covered, and so that at the same time a one-inch entrance is formed on the opposite end of the attachment. Thereby

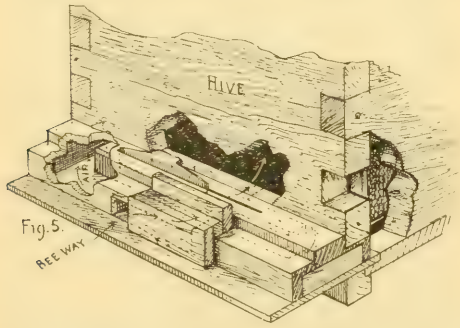
the bees are at liberty to go in and out, thus not allowing the sun and light to shine into the inner hive, preventing, in this way, the bees from being drawn out by the sun or light to take a flight. Only the warm tem-




perature would cause this. In other words, only the atmosphere of 60 to 70 degrees Fahrenheit would cause them to take a flight, and thereby prevent them from becoming chilled.




When the weather becomes very severe, below zero, you move the metal slide so that the entrance becomes closed, so that there is perfect night darkness in the hive. This darkness will keep the bees quiet. The se-




vere weather will not affect them, with the direct entrance closed up, while a steady supply of fresh air through the air channel at each end will make the hive more comfortable for them.

When the weather moderates, remove the slide to the side again, so that, when the temperature becomes warm enough for the bees to take a flight, then they could do so.

The entrance-controller should be closely fitted to the sides of the bottom-board so that no light will shine into the inner hive through the space which perhaps is made by not having it fit closely enough. If any such space is left it would have to be filled. Putty will answer this purpose the best.

You will be astonished when using this method to see how small a number of bees you will lose. Spring dwindling is mostly overcome.

Cincinnati, Ohio.

[This is the second year, if we are correct, that Mr. Weber has tested a device of this kind; and so satisfactory has been its operation that he secured a patent, the same being granted Sept. 24, 1907. The device, as will be seen by consulting the illustrations, consists of a general scheme for gradually contracting the entrance, allowing daylight to penetrate in moderate weather, when the bees can fly without being chilled to death; and later, when chilly or cold weather comes on, it permits of the closing of the entrance in such a way as to let in the air and yet shut out the light.

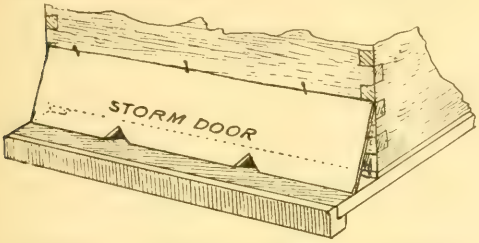
By referring to Fig. 4 you will see that the whole arrangement is turned upside down, although the illustration does not show correctly the true relation of the parts, but yet enough so to enable the reader to understand the general principle. When the entrance is closed entirely by the zinc slide in the central partition the air passes in at the point marked "bee-route," through the wire-cloth screen around the ends of the partition, back through the screen, and finally into the hive.

It may be questioned whether thus shutting in the bees so they can not get out would not, in some localities especially, result disastrously to the colony. All the experiments that we have conducted in our locality toward shutting off the light, and yet letting in the air, have resulted in heavy losses of bees, providing the bees themselves could not get out of the hive. It is our opinion that it would be better to omit the wire cloth in this controller entirely, because we believe that simply shutting off the direct rays of the light would keep all the healthy bees inside, while those that are diseased could escape, thus avoiding a general disturbance if they were confined, demoralizing the whole colony.

It will be noted that in moderate weather a wooden slide on the outside, in connection with the zinc slide in the slot of the central partition, can be staggered in a zigzag order in such a way as to exclude the direct rays of the light, and yet allow the passage of the bees back and forth.

It will be remembered that nearly two years ago Mr. A. J. Halter, of Akron, Ohio, following out the suggestions of Mr. Doolittle, made some time before, showed how in this climate he leaned a board up against the hive, shutting out the direct rays of light, and yet making it possible for the bees to pass in and out at any time (see illustration). His theory was that, if the light were shut

out, there would not be much flying on the part of the bees on bright sunny days, yet having an atmosphere too cool to allow them




HALTER'S STORM-DOOR OVER ENTRANCE FOR OUTDOOR WINTERING.

to fly out and thus get chilled. We are testing this idea this winter, as well as the controller of Mr. Weber, also shown.

Time and again we have noticed that, with the ordinary hive-entrance, perfectly healthy bees would fly out on cool or cold days, become chilled, and die by the thousands. Those lured out by the inviting sunshine were scattered around on the ground for several rods within the vicinity of the apiary; and so thick have they been that one could scarcely walk without stepping on bees. A cold spell following on without any warm weather intervening would be very certain to kill all these bees, and the colonies losing them would suffer very heavily in consequence.

This last fall our Mr. Pritchard reported the north yard had unusually strong colonies during October; but a late inspection in December, when it happened to warm up, showed that they were fearfully reduced in numbers. These had no entrance-controlling devices, and the presumption is that the bees flew out on deceptive days and died, for we had many such days last fall.

The loss from bees flying out this way is not so marked in very cold localities as it is where a more moderate temperature prevails. A bright sunshine will often fail to warm up a chilled atmosphere. It looks all right to the bees outdoors. They come out, discover their mistake too late, and die.

We regard this as a *very important* subject, because in localities on a line just between the outdoor wintering portion of the country and the indoor, there are severe losses just from this source. Many times a colony will lose two-thirds of its force, even before the first of December; and then, of course, it dies before spring. In other instances colonies that have done well through the winter suffer heavy losses in the spring because of this (to them) peculiar spring that invites the bees out where they die by the thousands.

We hope that Mr. Weber or Mr. Halter will be able to solve this problem in a practical way. While Mr. Weber's is a more complicated device, it may be, when intelligently handled, far more effective.

Hello! here is something more on this interesting subject.—ED.]

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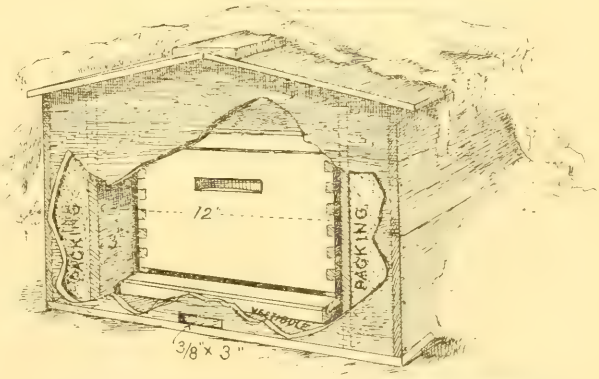
HOW TO PREVENT ENTRANCES FROM BECOMING CLOGGED IN THE WINTER.

Last winter I packed my bees, two colonies, side by side in a packing box with a ⅜×3-in. entrance leading straight into the hive; but I found that the bees clustering down to get more air actually shut off an already insufficient supply. In GLEANINGS for Nov. 15, p. 1438, Mr. Latham writes that it is very important to have the winter entrance directly opposite the cluster; so this winter I have a part of my colonies arranged with the summer entrance ⅜×12 in. bridged full width out to the packing-box wall, then the ⅜×3 entrance cut in the packing-box. It seems to me that, with this arrangement, it would be impossible for the inside entrance to get clogged with dead bees or ice. There would be no damp corners in the front part of the hive. Air could reach the cluster direct, no matter what side of the hive they are in, and the whole front of the hive could be cleared of dead bees and filth at any time if need be. The distance from the wall of the packing-box to the hive is 3 inches. Will any more air get into the hive with this arrangement? It looks colder to look in at the entrance. Is there any thing about this that would be detrimental to the bees? H. D McINTYRE.

Galt, Ont., Nov 1.

[The arrangement of the vestibule shown in the illustration, while perhaps not showing the exact arrangement mentioned by our correspondent, we should consider excellent.




M'INTYRE'S WINTER-CASE AND VESTIBULED ENTRANCE.

It is not entirely clear whether the bridge covering the entranceway from the inner hive to the outer casing is on a level with the cover, or just barely above the entrance. We should consider that it would be better to have it elevated about 3 inches above the entrance so as to make a sort of inclosed vestibule. This arrangement would catch the air

currents, catch any dead bees any time they accumulate, and at the same time to a great extent shut out the direct rays of sunlight on a bright day. As mentioned elsewhere, this would be very desirable. Answering the question of our correspondent directly, we would state that, in our opinion, the arrangement would prove to be very satisfactory. At all events, will he report the result of the experiment next spring?—ED.]

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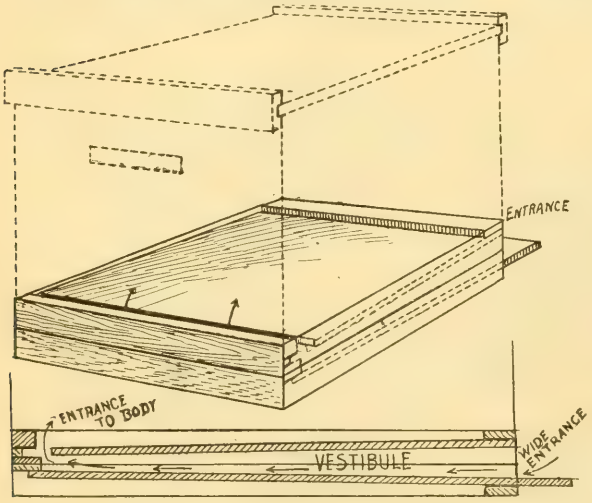
A DOUBLE HIVE-BOTTOM FOR WINTER PROTECTION.

*Mr. Editor:*—The drawing illustrates a combination of two bottom-boards used as a preventive against cold drafts, bees flying on cold sunshiny days, suffocation from having the entrance clogged with dead bees or ice, and spring robbing. This combination is made of my old bottom-board and a new one having its floor loose (both are the standard 10A Danzenbaker style, which can be used singly if this experiment fails). The loose floor is shoved along until it projects about ¾ inch beyond one end of the new bottom. This projection is sawed off and reinserted in the place where it was shoved from, which gives us a plan to make the entrance from the lower bottom. The strip is fastened tight, and the loose floor is shoved forward, making an opening any width, and mouse-proof if desired. The opening between the sawed-off strip and under the back of the hive is closed perfectly by using a piece of one of the cross-sticks left out from an R cover. At the beginning of the swarming season I will remove the upper bottom, leaving only the lower one with its wide entrance.

The benefits that could be derived from




DOUBLE BOTTOM-BOARD TO PREVENT THE ENTRANCE FROM BECOMING CLOGGED IN WINTER.

such a board are, I think, many—first, cold drafts in early spring prevent the spreading of brood to the lower part of the hive. This is overcome by the large vestibule formed between the two bottoms (this point is not an experiment). Second, to take away the direct vision of light during cold sunshiny days prevents bees from being lured out to get chilled and die. The vestibule also answers for this purpose. Third, robbing can be prevented by bewildering the robbers; therefore when robbers make a rush past the first opening, and find themselves not in the hive, they act strangely bewildered. The guards notice this strange performance and promptly set upon them. Fourth, a bottom having such a wide opening at the front and a wide narrow entrance to the hive could not very well be clogged with dead bees or ice. I hope you will try one or two of these combinations so that you will discover, as well as myself, whether there is any benefit gained by using such a board. I am sure there is nothing lost. JOSEPH F. ROSE.

Washington, D. C.

[We should consider this arrangement very simple, cheap, and excellent. It possibly might retain all the advantages of the Weber arrangement. It is so simple for one to carry that we suggest that a number of our subscribers try it and report. We shall certainly test it in our own yards with all the arrangements here shown.—ED.]

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## FEEDING IN THE FALL.

### Thick Syrup Needs No Acid to Prevent Granulation; No Loss after Years of Experience with a Syrup Made in the Proportion of Two to One.

BY J. L. BYER.

On p. 1488, of the Dec. 1st issue, both the editor and the genial Dr. Miller seem to think that, because I fail to see any advantage in feeding syrup as thin as equal parts of water and sugar, I occupy a very untenable position. In view of what has been written about the liability of thick sugar syrup granulating, it is not to be wondered at that a statement of that nature should be treated as unorthodox and rank heresy. You will pardon me, and I assure you there is no intention of being impolite, when I say that all such assertions as far as wintering results are concerned (in our locality), are so much "bosh."

Upon what do I base such a broad statement? I answer, from practical experience, and result of feeding thousands of pounds of two-to-one syrup to hundreds of colonies during different years, without the loss of a *single* colony so fed. The only severe winter losses we have experienced were caused by the presence of honey-dew in the hives, and the labor factor is the only thing that keeps me from feeding every colony, every fall, with this *dreadful two-to-one* mix-

ture. With colonies so fed I would not give five cents a hive as insurance against winter losses. Under certain conditions, in exceptional cases, thick sugar syrup will granulate, but so will good clover honey. Can either you or the good doctor make the positive assertion that, under like conditions, syrup that was fed thin will never granulate?

But, as has been pointed out, this granulation in the rare cases mentioned cuts no figure so far as actual results in wintering are concerned. Aside from this the advantages of feeding the thick syrup as compared with the thin article are so great that I would not think of feeding the latter, at least until better proofs of its superiority are given me than have so far been forthcoming. This fall some 3000 lbs. of sugar were fed to three apiaries in a little over two weeks. If thin syrup had been used, two operations would have been necessary instead of one to each colony, and the feeding operations proportionately prolonged Feeding when I did, quite early, all the syrup was sealed over; while if the thin syrup had been fed later a large amount of it might have been left unsealed to ferment later on

Referring to the fact that bees make chemical changes upon the sugar syrup before it is fit for food, Dr. Miller asks if I think they can change my two pounds of sugar to one of water as easily as they can syrup as thin as nectar. For answer I would use the doctor's own handy phrase, "I don't know," and, what's more, I don't care how or how much they change the chemical constituency of the thick syrup so long as *they winter splendidly* on the same.

I am also asked if I can add the acid necessary to keep this thick syrup from granulating, as well as the bees can impart this requisite when fed the thin syrup. In all my feeding of bees I have never added an ounce of acid in any form; and I believe the addition of the same to any pure sugar syrup is entirely unnecessary.

So good an authority as our friend W. Z. Hutchinson comes out strongly on this point in the November *Review;* and were it not for such strong testimony from so well known an apiarist, probably the writer would not have dared to record such unorthodox statements. For fear that some readers of GLEANINGS may not see the *Review* for November I can not forbear making a short extract from the editorial of Mr. Hutchinson's referred to:

> Sugar syrup for feeding bees does not need the addition of tartaric acid, vinegar, or honey, as recommended by some, to prevent granulation; at least, that has been my experience, and I have fed barrels and barrels of sugar, beginning as early as Oct. 1, and continuing the work until nearly the middle of November.

While the consistency of the syrup fed is not mentioned, any bee-keeper knows that a *thin* syrup would not be fed to bees by W. Z. H. as late as on dates given.

On the spur of the moment I could name at least half a dozen successful apiarists who feed the thick syrup extensively and *exclusively*, and all with good results; so is it any wonder that I continue to pay no attention when told that, unless acid is added where such food is used, granulation will take place and the bees will starve? Give me positive results, doctor, as to the superiority of your formula and I will fall into line instanter.

Mount Joy, Ont., Can.

[If we implied (we certainly didn't mean to) that our correspondent was teaching heresy we are glad that we did so, as otherwise we should not have had this vigorous rejoinder. The editor may be wrong on the proposition that a *thin* rather than a thick syrup should be fed. At any rate, he is always glad to have his views assailed by an opponent who is able to present an array of such good argument as has been presented above We are frank to confess that we may be wrong; and that we are open to conviction will be apparent from our footnote given on p. 32 of our last issue on this subject *before* we saw Mr. Byer's point of view. And right here it is proper to observe that he has, in addition to the others mentioned, Mr. Alexander on his side.

We shall be glad to get more facts bearing on this question of thick or thin syrup, and in this connection we will say that thick syrup, so thick that the bees could not change it, and fed all in one big feed, gave us uniformly good results, but not better than a syrup fed thin. The question is open for discussion; but let us have *facts.*

But say, Mr. Byer, *we* never advocated putting acid of any kind in *any* syrup. On this we will join with you as against Dr. Miller *et al.*—ED.]

## MICHIGAN STATE CONVENTION.

### Honey-strainers in Extractors, Smokers, etc

BY R. F. HOLTERMANN.

In a private conversation with Mr. L. A. Aspinwall at the Michigan State convention, Saginaw, he gave me one idea which, in my estimation, will amply repay me for the expense and trouble of my trip.

HOW TO GET RID OF MOISTURE IN A CELLAR.

Mr. Aspinwall told me that, if I would build a bee-cellar, I should make a portion of the floor above of strips, with spaces between; upon this, put a thin muslin cloth, and over this fairly fine planer-shavings or chaff, say to the thickness of three inches. In this way the moisture can escape from the cellar through the shavings and yet the warmth of the cellar be largely retained. When I was home I made a frame of lumber four inches wide, a little longer and wider than the cellar trapdoor. Over this frame I stretched a piece of cheese-cloth strengthened by bands of strong cloth. The cloth was put on the under side, and the planer-shavings into the tray until no light could be seen from below through the shavings, when all was placed over the trapdoor opening to the cellar. If the temperature of the cellar gets too low I will add to the thickness of the shavings. In this way I feel sure I shall get

rid of a lot of moisture with a minimum loss of heat

Those who know Mr. Aspinwall believe him to be one of the most careful and thorough apicultural investigators the world has ever known. The revolution which has come about by his invention of automatic potato machinery alone entitles him to be heard with a measure of confidence. Mr. Aspinwall reported at the convention that, owing to rheumatism, he was unable to give his bees in his "non-swarmer" all the super room they should have. Many colonies had built brace and burr combs, being so crowded; yet, even under these circumstances, only one colony out of thirty-one had swarmed.

### COÖPERATIVE EXPERIMENTS.

After an address by the writer it was decided that members would undertake coöperative experiments. Mr. R. L. Taylor suggested that the first work be to learn to what extent, if any, the following conditions would cause the bees to fill and cap the sections in the outside row of the supers as soon as the more central rows.

The conditions were, to have two bee-spaces divided by a separator between the last row of sections and the side of the hive; also to raise the brood-chamber ⅞ inch at the front from the bottom-board closing the opening (made at the side) by means of a wedge, the object being to compel a larger percentage of bees to go up the sides of the hive and thus reach the outside sections first. Mr. Elmore M. Hunt, Redford, Mich., the hard-working secretary of the association, was elected director of the work, and any one desiring to join in this experiment should write Mr. Hunt.

### THE BEST SPEED FOR RUNNING AN EXTRACTOR.

Mr. E. E. Coveyou, Petoskey, Mich., wished to see some tests conducted to ascertain the best speed at which to run extractors, also to find out the best temperature of the combs to be extracted. He heated his combs artificially after hauling them to a central station from out-apiaries. Work as to speed, etc., is all haphazard at present, and often five to ten per cent of the honey is returned to the hive. It was pointed out that bees could not store honey in the extracting-combs returned to the hive until the combs had been cleaned up by the bees; and the more honey that adhered to the combs, the longer it took the bees to prepare them. When extracting during a honey-flow this might result in a loss of honey.

### A STRAINER INSIDE OF AN EXTRACTOR.

Mr. Coveyou is very enterprising, and is not only willing to adopt any good suggestion given in bee-journals, etc., but has the ability to improve on them or originate ideas of his own. He is using the system of straining inside of the honey-extractor, invented by Holtermann. Like myself he heats, when desirable, the unstrained honey on the bottom of the can between the cone side and the side of the can, but has improved the method by using a double bottom to the extractor and having water between. He has also improved the rubber tube I used to conduct honey from the strainer to the barrels and 60-lb. cans by having at the mouth of the tube a stop like those used at the mouth of a syrup-jug.

He thinks, as I do, that the strainer is made much less valuable by having it reach across the can where the unstrained honey can not be warmed, and where all refuse rests on the cloth when the honey is strained. Mr. Coveyou washes the cloth on the cone strainer with warm (not *melting* hot) water, and then brushes with a whisk any particles on the cloth. In this way he never removes the cloth. Messrs. Coveyou and Holtermann expressed in no terms of doubt their opinion that the strainer is a desirable feature in an extractor, and that any one who has once used it will not want to do without it.

Mr. Coveyou pointed out a weakness in honey-gates, as made at present. They will not stay open at a desired point, but either fall down, closing the gate, or, when opened until the handle is thrown back more than above the point of attachment, they fall clear back and hang down, falling into the issuing stream of honey, resulting in many objectionable features. He thought bee-keepers should find out what would be desirable features in goods, and then compel the supply dealer to give it.

### VALVELESS SMOKERS RECEIVE ENDORSEMENT.

The Root valveless smoker, recently introduced, received unstinted praise. A valve in the bellows was pronounced *unnecessary*—often a source of loss of air when using it. The new hinge connecting the barrel and nozzle, having a measure of play to it, was pronounced a great success. Mr. Holtermann stated that he had four makes of smokers, and that this new smoker was the first one to be used.

### COMB-HONEY SUPERS.

Mr. E. D. Townsend advocated a drawn-out comb for each side of the comb-honey super. This prevented a large percentage of swarming, and tended to give greater uniformity of finish of sections.

Mr. Aspinwall advocated continuous passageways between brood-frames and sections—that is, the passageway between the sections should be directly above the passageway between the brood-combs. In this way the ventilation is better, and the bees can go up in a straight line to reach the sections.

### QUEEN-CATCHER.

Mr. Aspinwall showed a queen-catcher consisting of a 14-gauge wire bent in a circle ¾ inch in diameter inside, dipped in wax, with a handle. He had not caught a mated queen in his hands for five years. He put the circle about the queen on the comb, and with very little effort she could be induced to step on the wire, when she could be lifted up.

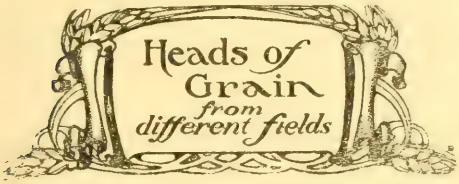
BEST INVENTION.

Mr. Coveyou exhibited a balance by means of which any desired package could be filled; an electric bell then rings automatically at the same time the honey-gate is closed. This invention received the first prize.

It is fully expected—in fact, the president of the National, Geo E. Hilton, and the Secretary, W. Z. Hutchinson, who was president of the Michigan State Association—stated that Vice-president Geo. W. York and Manager N. E. France all were decided that Detroit will be the next place of meeting of the National. Michigan will do its part to make a success of that convention.

President, vice-president, and secretary elected were Messrs. L. A. Aspinwall, E. D. Townsend, and Mr. Hunt. Mr. F. J. Miller, president of the Ontario Bee-keepers' Association, attended the convention, and was an advocate of hauling combs for extracting to a central point, and there extracting by means of a gasoline-engine.

Brantford, Canada.




SWARMING; ITS PREVENTION BY THE DOUBLE-QUEEN PLAN; SUPERSEDING OLD QUEENS.

*Mr. Editor:*—I have been very much interested in the recent correspondence of Mr. Alexander in regard to his double-queen system and the keeping-down of swarms. My most successful plan, if they persist in swarming, is to unite the swarms, that is, put two swarms in each hive regardless of the age of the queen. They work nicely together until the first super is filled, and then I space them; but when the honey-flow is over, the older queen generally comes out with the bulk of the old workers; and if they cluster conveniently I proceed to hive them, catching the queen, pulling off her head, and the workers return to the hive when the work is done. This leaves me the best queen. I have tried the cutting of queen-cells, but it will not work here, as it makes the workers cross and sullen.

ABSCONDING SWARMS.

I was interested in Mr. G. C. Greiner's letter in Dec. 1st GLEANINGS in regard to absconding swarms and their sending scouts. As I live in a swampy country I have had varied experience along that line, though I never had a swarm run off if the queen was two years old. Virgins or young queens give me some trouble, and they do not always cluster here before they go to the woods. I have had them swarm, cluster, be hived, run off, and hang on a limb for a week when there were hollow trees near them. Queens are like men—they are different in mind. If I make a young queen mad in hiving a swarm, if she is not clipped she will invariably go to the woods. C. L. BODDIE.

Nashville, N. C.

A BEE-KEEPER'S EXPERIENCE AT A FAIR.

At the Chester County fair I had an exhibit of bees. There was a very good fair, but no great inducements were offered for the bee-man. I wanted to get the people enlightened in the bee business.

No one had any bees but myself. I had a hive of five-banded goldens, and they were quiet, and could be handled without smoke or gloves, turned about without fear, and were unusually quiet. I had a comb in an observation hive, and I had a very large crowd around me most of the time. I demonstrated that bees could be handled without fear of being stung, and at any time. I was asked all sorts of questions, and you may judge what a good time I had all to myself. Just to think that there are so many people who know nothing about the workings and the habits of the bee!

Morstein, Pa. WM. Y. STACKHOUSE.

MOVING BEES IN HIVES WITH OPEN ENTRANCES.

Having read of a number of accidents in moving bees by the bees getting out and stinging the horses, I will give herewith the method used by Chas. Adams, of Greeley, Col. He first gives the colonies that he intends to move a thorough smoking, then nails the bottom-board fast to the body of the hive, and loads them into the wagon, leaving the entrance wide open. If any seem to be restless they are smoked a little more. I have been with Mr. Adams about a year, and have helped him move a good many bees for quite a distance—ten miles sometimes—with never a bit of trouble nor any broken or melted combs.

LEONARD GRAPER.

Greeley, Col., Nov. 25.

[We have no doubt that the plan of moving bees with the entrances of the hives open is a very good one, and yet at the same time we always hesitate about advising a beginner to attempt this. There are many who move bees in no other way, but yet there is always quite a possibility that, if a beginner were managing the moving, a stray bee might escape and perhaps sting one of the horses, when a serious accident would surely take place. From reports we have received it has seemed very necessary, when moving colonies with the entrances open, to keep the team moving steadily. If there is a stop there is more of a likelihood that the bees will issue from the hives.—ED.]

HOW TO MOVE OFF NO. 2 OR UNSALABLE COMB HONEY HAVING A GOOD FLAVOR.

After seeing the above heading, page 1558, I thought I would give the plan I followed

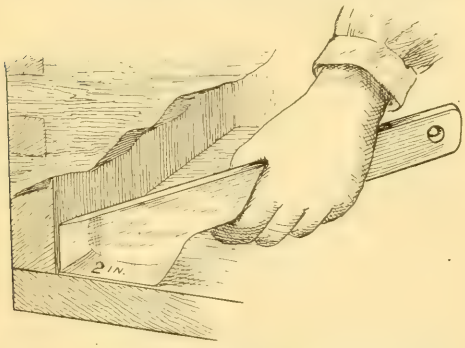
the past season to sell such comb honey. All sections not No. 1 were cut out and placed in Mason quart jars, two sections to the jar. The jar was then filled full of extracted honey of a fine quality, and sealed with a neat label containing my guarantee and name. *If you live up to your guarantee your name will sell your honey.* I speak in regard to the local trade. When rightly handled it is the best market we have. I placed this with the grocer at 20 cts. per lb., 3 lbs. to the jar, 60 cts. per jar. This will dispose of the off sections and quite an amount of extracted honey at a good price.

Mannington, W. Va. B. A. AMMONS.

[The plan here spoken of is excellent. It is the same that is used in Texas, only pails are used instead of glass.—ED.]

### A BUGGY-SPRING HIVE-SCRAPER.

I have been using a cheap and practicable hive-tool which can be made of a wagon or buggy spring. The broken end of a spring can generally be found at any blacksmith shop, and the thin end can be filed sharp for 10 or 15 cts. Have it sharpened as per the




illustration, the thin end sharpened and one side about two inches back, to be used as a scraper or screwdriver, and the thick end can be squared on one edge to drive a nail with. I find it very handy for all purposes around an apiary. VIRGIL P. CUTLER.

Canon City, Colo.

### THE RELATIVE POSITION OF THE BROOD AND HONEY DEPENDS UPON THE LOCATION OF THE ENTRANCE.

In the Nov. 15th GLEANINGS, page 1435, I notice the writing of Bro. Hand in regard to the position of honey and brood in a normal colony of bees, and it seems to me that he is mistaken, to some extent at least.

Mr. Hand refers to bees in a normal state unrestricted by man. Very well; we will take our ax and go to the woods, and here we have a bee-tree with the entrance high up at the extreme upper end of the cavity. Upon examination we find brood at the top and honey below; next we find a tree with an entrance at the lower end of the cavity. Upon examination we find brood at the bottom and honey above. The fact is, bees prefer to store honey away from the entrance, regardless of other conditions. As our hives usually have the entrance at the bottom, the honey is usually stored at the top, or above the brood. If Mr. Hand will take notice he will find that the end of his brood-frames at the back end of the hives usually contains more honey than the end nearest the entrance—at least that is the case here in Texas.

Sabinal, Texas. GRANT ANDERSON.

### TRANSPARENT WRAPPERS FOR COMB HONEY; RUBBER BANDS TO HOLD THE PAPERS IN PLACE.

In the Dec. 1st issue, page 1499, I see an article by H. A. Sackett in regard to using transparent wrappings for comb honey. I also note the editorial reference to butter-paper. I have used it for wrapping fancy comb honey in $4\frac{1}{4}\times4\frac{1}{4}$ plain sections, and find it answers nicely and makes a very neat package. Instead of mucilage or glue I use a small rubber band placed around the section after the ends are folded down. I find these answer every purpose, and the combs can be inspected at any time without destroying the wrapper. I usually cut a diamond-shaped opening in some of the papers, and these I set next to the glass in the cases, so that the color and quality may be seen without opening the case. G. W. BYERS, JR.

Dundee, Oregon, Dec. 10.

### CAUCASIANS CROSS; PLURAL QUEENS NOT AN UNQUALIFIED SUCCESS.

I have a Caucasian queen, imported direct myself; and, notwithstanding I opened her colony and passed out the frames for 156 high-school students to look at and handle, they are, at times, very vicious. They came through last winter all right, and are very strong at present. I have also some imported Italians which are very vicious, but wonderful workers.

Many years ago I tried a plurality of queens at various seasons of the year. About 30 per cent would hold out in the honey-flow. Except in case of supersedure I never managed to keep two in a hive only as above mentioned, and I tried it many times with brood and without and in all ways. A No. 1 vigorous queen with energetic and long-lived offspring suits me. DOUGLAS D. HAMMOND.

Truro, Ia.

### TWO QUEENS IN A HIVE.

If two queens in one hive are separated by perforated zinc, does one of the two show up missing in the fall? J. L. ZEINZ.

Chicago, Ill.

[Yes, as a general rule, if there is no fall flow of any kind.—ED.]

### RED POLLEN FROM ASTER.

The bright-red pollen in our parts of Pennsylvania, 28 miles north of Philadelphia, comes from fall aster. My bees brought it in up to the middle of November.

Souderton, Pa. M. B. BERGUY.

I will instruct thee and teach thee in the way which thou shalt go: I will guide thee with mine eye—PSALM 32:8.

Those who are young and well should bear in mind these notes are mainly for elderly people, or those who feel their strength and energy are failing Of course, these talks may be useful in holding up a warning to those who are young and strong, for you know that, to be forewarned, is to be forearmed. After I purchased the one acre near Bradentown I wrote friend Rood asking if it would be possible for Mrs. Root and me to get a couple of rooms in the neighborhood, so we could be near by while our house ("cabin in the woods" *No. 3*) was being built. He replied he knew of none; but if we two were willing to accept their every-day fare they would try to accommodate us in their own home. We finally arranged that I should go on ahead and build the house, and let Mrs. Root come later.

Let me here remind you, dear reader, that I have been writing these Home Papers for more than 25 years; and during all this time I have been studying with intense interest the homes where our people live and where our children are brought up—not only American homes, but I have studied *also* with intense interest the homes of the people in Canada, Cuba, Bermuda, and every other place when and where an opportunity offered. You can understand, then, how I rejoiced at an opportunity of getting a glimpse, at close range, of the home life of some of the best Christian people I have the honor to number among my friends.

Now, every family has its own peculiar ways and notions. Like people, they have an individuality. For instance, Mrs. Root and I have all our lives been in the habit of getting up early, say 5 o'clock or earlier, the year round. We have our breakfast over and put away, often before our children and grandchildren are up. Mind you, I don't say our way is the *best;* but we got used to it on the farm, and rather liked to keep it up.

Now, *please* don't you, any of you, think I am finding fault and feel hurt when I tell you how a great blessing came to me when I least expected it. I shall always thank God for having given me the privilege of getting a glimpse of the home life of such a family as that of dear brother Rood's; but when I found that their hours for meals were an hour later, and sometimes more than that, I at first felt a little fear lest I might not feel as well under the arrangement. Mr. Rood is up fairly early, gets all his men at work, and the general business of the day well under way, and then comes in to breakfast. After quite a little work outdoors before breakfast, all have good appetites, and we have a rather long breakfast, with lots of visiting and much merriment. Everybody has a chance to "*chew* his food" thoroughly.

Well, when breakfast is ended, instead of rushing off to work brother Rood gets a whole armful of bibles, and we read around until we finish a chapter—that is, unless the chapter is very long—closing with prayer. Let me say here that Mrs. Root and I have had bible-reading and prayer all our lives, after breakfast, but we read only a few verses; and when things are rushing the prayer is often very brief. Well, Mr. Rood is one of the busiest men I ever knew. He has his strawberries, lettuce, and cauliflower by the acre; then he has charge of eight or ten *apiaries*, deals in real estate, loans money, and I don't know what else. Yet with all this business he deliberately drops every thing and gives his *Maker* the very best part of his energies, right out of the early forenoon. I am sure he and his beautiful bright family will forgive me if I confess that at *first* I felt worried for fear he was giving *too much* attention to God's holy word in the very best part of the day. Why, it is almost funny, when you come to think of it, to hear of a man who is an educated lawyer (and a bright one too) having so much *bible* in his *home* that *A. I. Root* felt worried.

Well, just before noon he takes his berries to market (carrying *strawberries* to town the day before *Christmas*, for instance); and as everybody seems to want his advice or something, he seldom gets home until a pretty late dinner hour, and with supper it is much the same. Do you wonder that very soon I began breathing my little prayer, "Lord, help me to learn the new lesson thou art striving to teach me"? Did you ever try to drive an excited hen into the very place where she could find food, water, and every thing she was in great need of?* Well, you and I are often like that hen. We grumble and complain, and act contrary, until we find the imagined hardship or calamity was one of God's choicest blessings. Well, when Mr. R. was sometimes unusually late, and I felt too much used up to work or read, I *finally* decided to take my noonday nap before instead of after dinner, and was amazed to find I was not *particularly* faint or hungry after the nap. I did the same thing in the evening, and then my appetite began to increase amazingly. Then it occurred to me that my very warm friend Dr. Salisbury told me, almost forty years ago, that it would add years to my life if I would take a good rest lying down, and, if possible, a short nap before eating a meal. Of course, one is expected to be well rested before breakfast; but he said the digestive machinery could never do good work when one comes to his meals exhausted and tired out. For years past I at times feel so used up before dinner time that

*Our pastor said last evening (at our Wednesday-evening prayer-meeting) that God planned to take the children of Israel into the promised land by a short quick route, but owing to their obstinacy and "stiff-neckedness" the best he could do was to get them there in *forty years*.

it is really painful to do either mental or physical work until I have my dinner.

Well, it was one of my "happy surprises" when I discovered that it was *not* lack of *food* that made me feel faint, but lack of rest. One noon, after getting my nap, I ran over to give the carpenters some directions, and then "got busy" with my chickens, and actually *forgot* I hadn't been to dinner. Mrs. Root didn't find me, and told the rest not to wait; and when I told them I hadn't been to dinner I found I was just feeling fine without any.

Another thing, I do not think I ever enjoyed my daily food, at any time in my life, as I do now; and I am resolved from this time on to avoid sitting down to any meal, if it can possibly be helped, until I am thoroughly rested, especially after I have been doing much fatiguing work of any kind. Think of asking the delicate and complicated machinery to do the work your very life and *existence* depend upon when you are too much used up to do any thing but sleep.

Yes, I know what a lot of tired women and some others will say to my great "discovery." My excellent friend Mrs. Rood (and she is one of God's jewels) said when I was talking about this very thing:

"Mr. Root, just think of *my* taking a nap before dinner, with all this family to look after at such a time."

I replied, "My dear good friend, when you feel you are failing, just force some one to take your place, exactly as you would do when the doctor, a little later, tells you to go to bed and stay there until he says you may get up. Twenty minutes or half an hour before meals may cost something *now*, but nothing like what medicines, doctors, and possibly *funerals*, will cost later."

Christmas morning I wrote to the Medina people that my 68th Christmas morning was certainly the happiest if not the "merriest" of any in my recollection.

While making these statements I recognize, or try to, that this outdoor life, with the sea breezes from the Gulf always around me, may be quite a factor in giving me health and enjoyment. In my *after-dinner* naps I often awoke, even here in Florida, with a bad taste in my mouth, and a dull feeling, until I had stirred around a little. After a nap *before* eating there is nothing of the kind. On the contrary, I invariably wake up with an exultant feeling and a disposition to shout, "Praise God, from whom all blessings flow," and "Is not this the land of Beulah?" By all means take this noonday nap in the open air if possible. On account of flies (and at times mosquitoes) I sleep before a wire-cloth-covered window. This window is low enough so my pillow can be pushed over on the sill; and one of the delights of living is, to me, feeling the delicious cooling breeze across my face as I lapse into unconsciousness.

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BLOWING OR BREATHING WELLS, ETC.

*Mr. A. I. Root:*—I read with interest your account in GLEANINGS of your visit to Wind Cave, and note what you say in regard to the air going out and in, and also that there are other places that exhibit the same phenomena. I thought then I would sit down and write you about the wells in this part of the country, but have not done so till now. I live in what is known as the semi-arid country, being located in the northeast corner of Colorado. In countries where the rainfall is light, water is not usually found near the surface unless it may be springs on low ground, and these are not dependent on rainfall, as the moisture that supplies them comes from long distances, sometimes hundreds of miles. In our county (Phillips) the depth to water varies from 25 or 30 ft. up to 250 or more, owing to location. Just around where we live, the depth is from 150 ft. to 175. When water is obtained it is in a bed of sand or gravel, and is usually found in unlimited quantities. Before water is reached, there is more or less gravel. This is because of being below where rain ever reaches; and above, the strata that supply the water are dry. Indeed, it is often found with scarcely a trace of clay in it; and in boring or drilling wells this gravel will slide or roll in from the sides as fast as it is lifted out, just the same as if you tried to go through a pile of wheat.

These bodies of dry gravel vary from a few feet in depth to sometimes nearly 100 ft. In the writer's well we went through nearly 100 ft. in one body in which there was not enough clay to make it stand alone. If there is any way for air to reach these bodies of gravel it will, of course, fill up all the air-spaces.

When I first came west I heard of the blowing wells, and many and absurd were the theories as to the cause of their blowing and sucking, for the air goes out and in just as you say at Wind Cave. People soon learned to forecast the weather by the wells. I began to study out the cause of the air at times coming out and at others going in. Later I read how all our changes in weather are preceded either by a high or a low barometer, and at once decided that I had solved the mystery. The solution is simply this: When what is termed a high barometer passes over any part of the country the air in that part is more dense, and is, of course, heavier. The air among the particles of gravel below the surface, not being of the same density, the outer air will naturally pass down into the well to equalize the pressure. When the "high" passes over, and a "low" takes its place, the reverse will follow; and in proportion to the intensity of the "high" or "low" will be the current of air going out or in; and I might add, too, the volume of space to be filled below the surface modifies it.

If the opening between the two be large the current of air may be scarcely perceptible; but if confined to a small opening it is at times very strong, as noted in your remarks about Wind Cave.

Our wells here are mostly drilled, usually not over 6 to 8 inches in diameter. With this space the current is sufficient at times to lift a light hat when held close to the opening. When the pump is in, and the well covered, sometimes the opening left will not be larger than a pencil. At times the air will pass with sufficient force to make a whistling or roaring that can be heard at a distance of 50 to 150 ft.

Now as to foretelling the weather, we have learned that, when our wells blow, we may look for a windstorm from the northwest, with colder weather. The severity of the storm will be indicated by the force of the current coming from the wells. If the air goes in, look for warmer weather with southern winds. The change is indicated, usually, about 10 to 12 hours preceding.

You spoke in one place about ice in wells. I know of a well half a mile from where I sit, in which one winter the iron pipe (pump) was frozen sufficiently to burst 130 ft. below the surface. This may look like a western lie; but in view of my explanations above, should the air be entering rapidly, and a very low temperature, it might as readily freeze there as higher. We generally do not have these extreme conditions. We have, however, a good deal of bother with pumps freezing in the winter; but by making a small vent 15 to 25 ft. below the surface, and covering the well closely, the difficulty is reduced to a minimum.

I have written this out fully, as I find but few, even in the West, who understand why wells blow.

Holyoke, Colo., Jan. 8, 1907. K. M. AIKIN

Many thanks, friend A., for your interesting description of these "breathing wells." Your theory as to the cause is, I think, reasonable, and in agreement with the conclusions of science.

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Taft, Texas, Dec. 22, 1907. Yours very truly, S. M. CAMPBELL.

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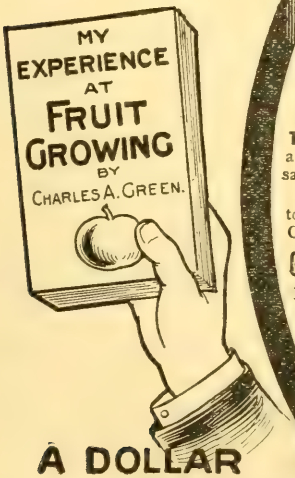


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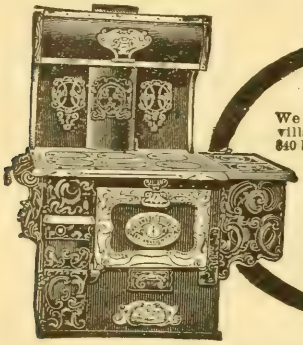

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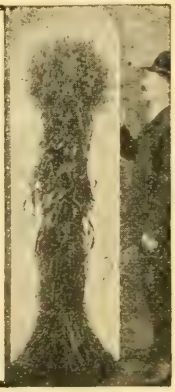

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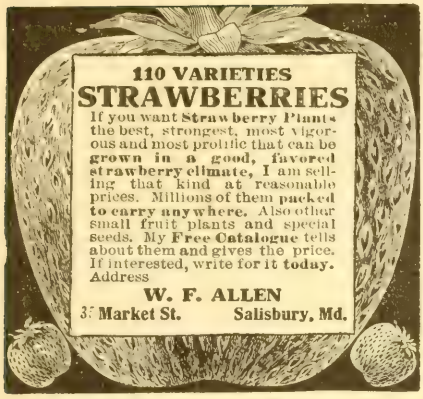


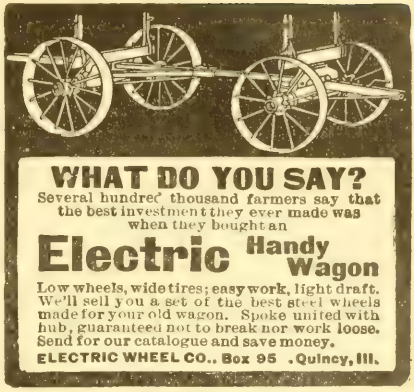


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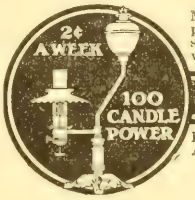


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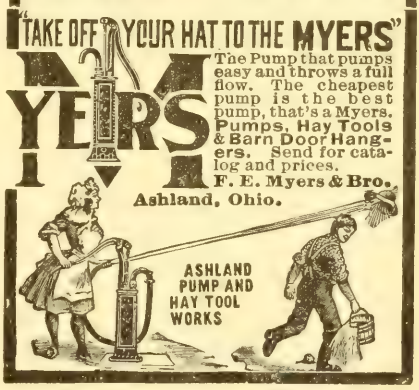


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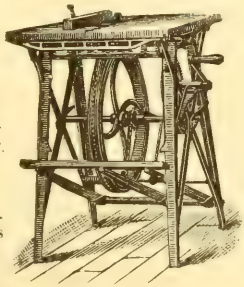

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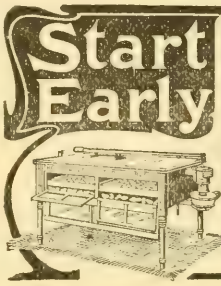

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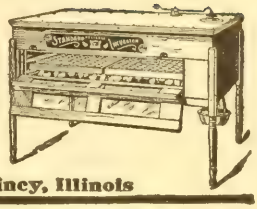

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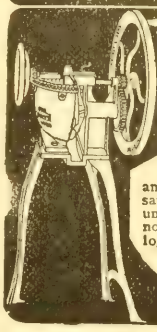

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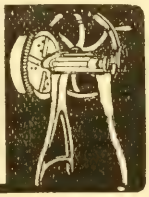

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W. K. MORRISON, 528 Friendship St., Medina, O.

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WANTED.—No. 1 and fancy comb honey; 4x5x1⅞ section preferred. Also light extracted. Must be guaranteed pure. Write, stating grade and how put up, and lowest cash price.
C. M. CHURCH, Arnold, Pa.

WANTED.—White ripe extracted honey; pay cash.
C. O. BERGSTRAND, Amery, Wis., Rt 3, Box 87.

## Honey and Wax For Sale.

FOR SALE.—Alfalfa extracted honey in 60 lb. cans, 8 cts. per lb., f. o. b Kansas City; sample sent upon request. C. C. CLEMONS & Co., Kansas City, Mo.

FOR SALE.—Choice table honey, heavy body, fine flavor, aster-buckwheat blend; 60-lb. cans, $5 00 each. Inquire H. M. WEST, N. Kingsville, Ashta Co., O.

FOR SALE.—36 cases of comb honey in 4¼ and 4x5 plain sections. Clover and raspberry.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—Fancy orange-blossom honey, 60-lb. cans, 9¾c; water-white sage, 60-lb. cans, 9½c; light amber, 60-lb. cans, 8¾c; dark amber, 60-lb. cans, 8¾. Special prices in quantities.
E. R. PAHL & Co., Milwaukee, Wis.

FOR SALE.—Buckwheat and amber comb honey, $3 per case; 12 cases, $2.85; 25 cases at $2.70 per case; 24 sections to case; dark amber extracted at 7½ cts. per pound in 60-lb. cans.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans.
ROBT. A. HOLEKAMP & SON,
4263 Virginia Avenue, St. Louis, Mo.

## Bee-keepers' Directory.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan Cyprian queens. E L Pratt, Swarthmore, Pa.

QUEENS.—Clover stock. Experience and methods count. Write me. H. G. LARUE, LaRue Ohio.

ITALIAN queens bred for honey, untested, 75c each.
GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Extra honey queens and choice mountain honey. Francis J. Colahan, Bernardo, San Diego Co., Cal.

QUEENS.—Pure Gold, Red-clover, Caucasian, Banat.
ROSE LAWN APIARIES, College View, Lincoln, Neb.

ITALIAN QUEENS.—Golden and leather, 60c each; worth $1.00. G. W. BARNES, Box 340, Norwalk, O.

Bee-keepers' supplies, Italian queens. Send for a free catalog. ARTHUR RATTRAY, Almont, Mich.

ITALIANS, CARNIOLANS. No disease. Two comb nucleus with queen, $3.00. A. L AMOS, Comstock, Neb.

ITALIAN BEES and queens—Red-clover strain imp'd mothers. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIAN BEES, queens, and Root's bee supplies.
E. SCOGGIN, Carlsbad, N. M.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES and queens—red-clover and golden strains. E. A. SIMMONS, Greenville, Ala.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list free. B. F. YANCEY & SON, Angleton, Tex.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

FOR SALE.—Golden and red-clover Italian queens.
WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES Send for catalog.
D. COOLEY Kendall, Mich

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted.
W. E. TRIBBETT, Staunton, Va.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

IMPROVED ITALIAN bees and queens ready in May. Circular and testimonials free; second-hand surplus arrangements for 4¼ sections, also folding cartons, cheap if taken soon, or will exchange.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O

ANGEL'S GOLDEN BEAUTIES and his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for $1.00; an extra select breeder for $2.50. I have had 12 years' experience at queen-breeding. Address
SAMUEL M. ANGEL, Route 1, Evansville, Ind.

CATALOG FOR 1908.

We have begun mailing our 1908 catalog. If your copy does not reach you as soon as you would like it, send a request for one on a postal and we will mail it. Better wait a week before sending, as we wish to mail first to our list of readers, so you should get one now very soon.

SWEET-CLOVER SEED, WHITE AND YELLOW.

We are furnishing the unhulled white-sweet-clover seed at 15 cts. per lb.; by mail, 25 cts.; 10 lbs., not prepaid, $1.30; 25 lbs., $3.00; 100 lbs., $11.00. For hulled white add 7 cts per lb. Yellow-sweet-clover seed is now on the way from Oregon, and should be in stock soon. For hulled seed, while it lasts, 25 cts. per lb.; by mail, 35 cts.; 10 lbs., $2.30; 25 lbs., $5 50; 100 lbs., $21.00. Pamphlet on the cultivation of sweet clover mailed free to those interested who call for it.

HOTBED SASH AND GLASS FOR THE SAME.

We have made an improvement in our hotbed sash by adding a round rod of hard wood through the center from side to side midway between the ends. Some bars are inclined to warp, making it more difficult to fit in the glass; also in lifting the sash by the side rail it may spring and loosen the glass By the addition of the rod, with a nail driven through at each bar, after all are properly spaced, these objections are overcome We are also making them standard width, 3 ft 4 in. wide for four rows, 8-inch glass. We can also furnish them 3 ft. wide for three rows of 10-inch glass, or 3 ft. 6 in. for three rows of 12-inch glass on special order. As regularly furnished they are grooved for glass to be butted together, the joint to be closed with liquid putty. We also furnish them rabbeted so the glass may be lapped if so ordered.

Price of regular-size sash, 90 cts. each; $4 25 for 5, or $8.00 for 10, shipped in flat, not put together. If put together not painted, add 10 cts. each. If put together, painted two coats, add 30 cts. each; glazed with 8x10 glass, add $1 00 for each sash at present price of glass. We can offer 8x10 glass at present for $2.40 per box; 5 boxes at $2.30; 10 boxes or more at $2.20 This is a very low price, due to a recent cut in price of glass, and is not guaranteed for any length of time. If in need of sash or glass, send in your orders while the present low price holds good.

## Convention Notices.

The annual convention of the Southeastern Minnesota and Western Wisconsin Bee-keepers' Association will be held at Winona, Minn., in the court-house, on Feb. 26 and 27. Those interested are invited.
OZRO S. HOLLAND, Sec.

NEW BEE-KEEPERS' SOCIETY ORGANIZED.

We have formed a new organization in Wheeling, W. Va. We call it the Panhandle Bee-keepers' Association. It is to include part of Ohio, West Virginia, and Pennsylvania At the meeting we found that there is foul brood in one apiary in Belmont Co., Ohio.
Blaine, O. W. L. KINSEY, Sec.

The Wisconsin State Bee-keepers' convention will be held at the Capitol, Madison, Wis., Feb. 5 and 6. President N. E France promises several good papers and an abundance of questions. The special features of the Wisconsin convention have always been the friendly and social intercourse among its members, and the profitable and instructive questions and answers of special interest to bee-keepers. Everybody is cordially invited to be with us.
GUS. DITTMER, Secretary.

The Indiana Bee-keepers' Association will meet at room 12, in the State-house, Feb. 1. We wish a full attendance of bee-keepers, whether they are members or not, as business of the utmost importance will be discussed. Foul brood is found now in a majority of counties in the State, and it is to stop its ravages that this movement is being made. We wish at least one representative from each county in the State to be present. There has been quiet an enrollment of members the last year, and we wish many more this winter. Come if you can; and if you can not come, send a dollar, and this will enroll you a member of the State organization and also the National. Do it now.
Redkey, Ind. GEO. W. WILLIAMS, Pres.

THE NEBRASKA STATE BEE-KEEPERS' ASSOCIATION.

This association will hold its next annual meeting in room 303, Agricultural Hall, at the State Farm, Lincoln, on Jan. 22, at 2 P M President, C. M. Lewelling, Beaver City; Secretary, Miss Lillian E. Tresster, Lincoln. The following is the program.

Address by the President.
Reading of the minutes of previous meeting.
Roll-call.
Wintering Bees, by I. D. Shuman, Callaway, Neb.
Discussion.
Bee-keeping as a Secondary Industry on the Farm, by J. E Atkinson, Pawnee City.
Discussion.
Practical Hints for the Bee-keeper, by O. E. Carlson Vice-president, Newman Grove, Neb.
Question-box.

Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage.

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9 and 11 W. Pratt St. Baltimore, Md.

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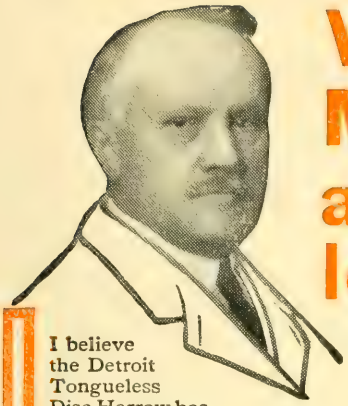
SUPPLIES
FOR
BEE=KEEPERS

Every thing you want; all made by us
in our own factories==at
LOWEST PRICES.

**The American Bee=keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

W. T. FALCONER MFG. CO.
DEPARTMENT G, :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.



I believe the Detroit Tongueless Disc Harrow has had the largest sale in its first two seasons on the market of any farm implement ever manufactured.
*W. W. Collier, Gen. Mgr.*

# Why Not Accept My Offer and Try a Detroit Tongueless Disc Harrow Free for a Month ?

**CAUTION:**

Beware of *imitations*. They say "imitation is the sincerest flattery"—and our Detroit Tongueless Disc Harrow is being very much flattered. There are several cheap imitations of our Harrow being offered for sale through *dealers*. Don't buy one of them believing that you are getting a genuine Detroit—because you are not. The Detroit Tongueless Disc is not for sale by any dealer—anywhere. We sell it direct from our factory—and *you* keep all the dealers' profits in your own pocket.

THAT'S my proposition—I mean every word of it.

You can use one of these discs on your farm—for a full month without cost.

At the end of that time—if you don't want it—return it to us. We'll allow the freight—thus the test won't cost you one penny. That test is only a part of our liberal selling plan.

It's just our way of assuring every one of our customers that they are going to get what they WANT and what they will be pleased with when they buy a Detroit Tongueless Disc Harrow.

We're anxious to send a Detroit Tongueless Disc Harrow to any responsible farmer—without deposit—and without advance payment—to make the test. It MUST be a good Disc—and one that will PLEASE you—or we could not go on making this proposition year after year.

We're sending out thousands upon thousands of these Discs all over the country on this plan. Surely we could not afford to do this if the Disc were *not* all we claim it to be.

The principle of the Detroit Tongueless Disc Harrow is right. The Forward Truck does away with all of the annoyance on the team of the old "tongue." It does away with all jamming—end thrust—and whipping of the horses, that frets them and puts them out of commission just at the time you need them most. See the two wheels back of the Disc Blades in the picture?

Those wheels are a part of the Detroit Tongueless TRANSPORT TRUCK, upon which you can raise the Disc Blades off the ground, making them rest on the front and back Trucks—so that you can drive the Harrow over stony ground, rough and sandy roads, bridges, etc., without dulling the blades or cutting up the surface. A good invention—that Transport Truck,—'most worth its weight in gold the way it saves Disc Blades that have to be transported from one field to another or from house to field.

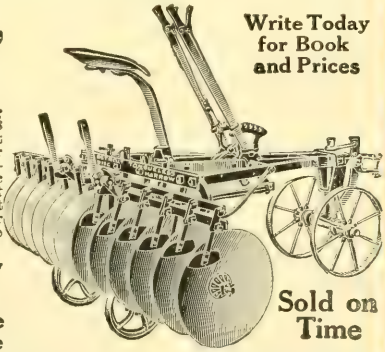
Year before last we had over 1600 orders for this Disc that we couldn't fill—had to send them back. Last year we made twice as many as the previous year—and still we couldn't fill all our orders.

This year we've increased our factory facilities, and hope to be able to fill every single order on the Detroit Tongueless. It has had a wonderful sale—and has given universal satisfaction.

***WE SELL YOU A DETROIT TONGUELESS DISC HARROW—ON TIME—ON TRIAL—FREIGHT ALLOWED***

Anyway, we invite you to drop us a line on a postal card, giving us your name and address, and letting us send you our new 1907-08 Disc catalogue. This Book tells you more about the famous Detroit Tongueless Disc Harrow than we can tell you here—gives you our Selling Plan and quotes prices on a Detroit delivered at your railroad station. You can buy the genuine Detroit Tongueless Disc only through us *direct*. We advise you of this that you may not be imposed upon by some unscrupulous dealer who will represent to you that he has a Detroit Tongueless Disc Harrow for sale—or one as good. He *can't* have a genuine Detroit Tongueless—and he can't have one "just as good."

**Write Today for Book and Prices**

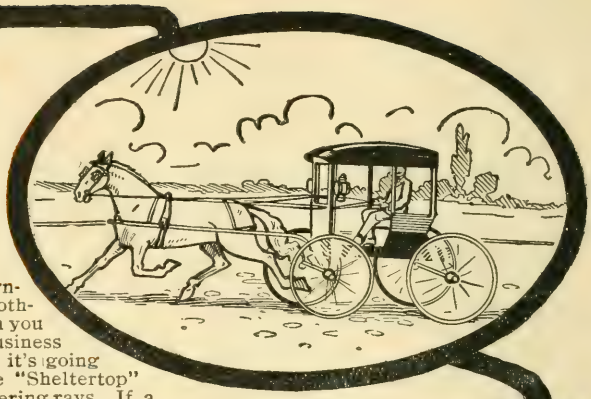


**Sold on Time**

**W. W. Collier, Gen. Mgr. AMERICAN HARROW CO., 469 Hastings St., DETROIT, MICH.**

**NOTE: Full line of Detroit Tongueless Discs are carried at our branch houses in all leading trade centers, enabling us to make prompt shipment to all points. To be sure of getting a Detroit Tongueless just when you want it, better get your order in early.**

# SHELTER FROM SUN OR STORM



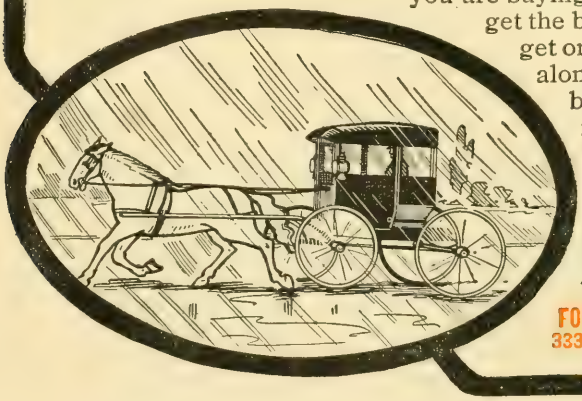
There's a certain satisfaction in owning a **"Sheltertop" Buggy** that no other buggy can supply. Why? When you start out for a drive, or on a long business trip, you know for a certainty that it's going to be pleasant. In hot weather the "Sheltertop" protects you from the sun's sweltering rays. If a storm or a sudden squall comes up, simply close the buggy and ride dry and comfortable. No **ifs** or **ands** or **maybes** about it—you cannot forget to take along the side curtains, or the storm front, because they are a part of the **"Sheltertop"**—out of sight when not in use—handy to get in position when needed.

LIFE SAVERS FOR LAND TRAVELERS
TRADE MARK REGISTERED

# THE "SHELTERTOP" BUGGY

## THE ONE BUGGY FOR ALL WEATHERS

Three simple one-hand movements—done in three seconds—without leaving seat, stopping the horse or dropping the lines, shuts the **"Sheltertop"** up so tight a drop of water cannot get inside the buggy no matter how hard it rains or the wind blows. Changed instantly from a handsome, fair-weather buggy to a cosy shelter from wind, rain, dust and mud. The only real improvement in buggies since the days of the Deacon's Old One-Horse Shay. Constructed from the best materials money can buy, in a factory especially equipped with the latest machinery, by skilled buggy builders. Handsomely finished, and sold on **30 days' free trial** before you pay us a cent. We ship the buggy and allow you to try it—we want you to use it just as if it were yours —we want you to ride in it in all kinds of weather, and convince yourself that it is the buggy to buy. While you are buying a buggy you might as well get the best. The protection you can get only in the **"Sheltertop" Buggy** alone is worth every dollar the buggy costs. Write to-day for catalog describing the construction of all parts of the vehicle, and be sure to ask for our **free trial plan.** Don't buy a buggy until you get the catalog and this information. Address,



**FOUTS & HUNTER CARRIAGE MFG. CO.**
333 S. Third St., Terre Haute Indiana.

# Gleanings in Bee Culture

Apiary of one of Gleanings subscribers in the far North. J. Enelund, Kulla, Hjelstaby, Sweden.

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI February 1, 1908 No. 3

# $500.00 ACCIDENT INSURANCE POLICY FREE!

## FARMERS' INSURANCE THAT REALLY INSURES.

You may have had other chances to buy accident insurance that would protect you in elevators, on steamboats, and automobiles, but this is *the first chance you have ever had* to get real protection in your ordinary work. This NEW $500.00 POLICY was secured from the North American Accident Insurance Company, of Chicago, Ill., (Surplus $331,498.65) the largest company in America handling this class of policies, after long negotiations. It took three months to induce the company to write the special features that were required to make it valuable for rural people. By buying the policies outright in very large quantities, it is now possible to offer it FREE with this remarkable practical combination of magazines.

**GLEANINGS IN BEE CULTURE, $1.00**
the bee-keepers' favorite paper.

**FARM JOURNAL (five years), .75**
the standard farm paper of the world.

**GARDEN MAGAZINE—FARMING, 1.00**
a most beautiful, practical horticultural magazine.

**INSURANCE POLICY . . . 1.00**

**$3.75**

# All for $2.

These magazines, if paid for separately, would cost you $2.75, but we can sell ALL THREE MAGAZINES with the NEW INSURANCE POLICY for ONLY $2.00. This is because the three publishers have combined for a subscription campaign. If each one sent you a separate letter it would cost us just three times as much as where we offer all three together. THE SAVING GOES TO YOU.

If the policy is not wanted we can substitute any of the following: "Designer," "Housekeeper," "Ladies' World," "McCall's Magazine," "Mother's Magazine," or the Garden and Farm Almanac.

# WHY SHOULD YOU HAVE THESE PAPERS?

**BECAUSE** GLEANINGS IN BEE CULTURE is the great paper in America devoted to bees and honey. If you have bees, or are going to get them (and everybody who lives in or near the country should have bees), you need the most reliable and latest information, and you want at the same time the simplest directions possible. You want the bee business in a nutshell, and that is what GLEANINGS will give you. For the beginner or the most expert it is equally valuable.

**BECAUSE** FARM JOURNAL is far and away the foremost farm-paper in the world, a boiled-down, practical, helpful, entertaining monthly, built to make the rural homes of America more happy, prosperous, and contented, and already doing it for more than 500,000 homes. For farmers, villagers, or suburbanites.

**BECAUSE** the most beautiful garden and horticultural publication in the world is the GARDEN MAGAZINE, full of sound sense, beautiful engravings from photographs, and fine printing. It has ten issues at 15 cents each and two at 25 cents each, per year, and the subscriber gets his money's worth twice over. It is a delightful magazine, useful, stimulating, and ornamental.

# WHY SHOULD YOU HAVE THIS INSURANCE?

Because you are in danger, every moment, of an accident which may cripple you for weeks, months, or for life; because the loss of an eye, a hand, or a foot, may mean destitution for yourself and your family; because this protection, for a full year costs you nothing whatever.

**WHAT THE POLICY PAYS:**

| | |
|---|---|
| For Loss of Life | $500.00 |
| For Loss of Both Eyes, meaning entire and permanent loss of the sight of both eyes | 500.00 |
| For Loss of Both Hands, by actual and complete severance at or above the wrist | 500.00 |
| For Loss of Both Feet, by actual and complete severance at or above the ankle | 500.00 |
| For Loss of One Hand and One Foot, by actual and complete severance at or above the wrist and ankle | 500.00 |
| For Loss of One Hand, by actual and complete severance at or above the wrist | 125.00 |
| For Loss of One Foot, by actual and complete severance at or above the ankle | 125.00 |
| For Loss of One Eye, meaning entire and permanent loss of the sight of one eye | 50.00 |

Provided such loss shall result within thirty days from date of accident, from accidental bodily injuries, solely and independently of all other causes, and covers accidents as follows:

Being thrown from a mower by horses.
Being knocked down in the road by a wagon or automobile.
Being hurt in a bicycle accident or collision.
Being hurt while operating corn-sheller, fodder-cutter, etc.
Being caught in a burning building, house, or barn.
Being hurt in an elevator or any public conveyance—train, trolley, boat, etc.
Being injured in a runaway.
Being frozen or frostbitten.
Being injured by robbers or burglars.

Should the Assured obtain injuries *in the manner specified above*, which shall not prove fatal, but which shall immediately, continuously, and wholly disable and prevent the assured from performing each and every duty pertaining to any business or occupation, the Company will pay the Assured FIVE DOLLARS PER WEEK during the time of such disablement, but not exceeding six consecutive weeks for any one accident.

# NO DELAY OR EXAMINATION.

The insurance goes into effect as soon as you receive the policy and mail back the coupon attached to it. There are no dues, taxes, premiums, or assessments of any kind whatever to be paid by you. We have paid everything in full.

The three papers will begin at once, and will come to you each month till the time expires. THEN THEY WILL STOP, unless you order them renewed.

Send us $2.00 by registered mail, or postoffice or express money-order to-day. Money refunded to any dissatisfied subscriber. Address

**GLEANINGS IN BEE CULTURE, MEDINA, O.**

# C. H. W. WEBER

**Headquarters for**

# BEE SUPPLIES

**Distributor of Root's Goods Exclusively, at Root's Factory Prices**

GIVE ME YOUR ORDERS for the **Best Goods Made.** You will be pleased on receipt of them. You will **save money** by ordering from me. My stock is complete; in fact, I keep **every thing** the **bee-keeper** needs. **Cincinnati** is one of the best **shipping-points** in the Union, **particularly in the South,** as all freight now **goes through Cincinnati.** Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly **free of charge.**

## Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

# C. H. W. WEBER

**Office and Salesroom, 2146-2148 Central Ave.**
**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

CINCINNATI.—There is absolutely no demand for either extracted or comb honey at this writing. Lower prices would be no inducement to the buyers, and a waiting game must be played until the trade calls for this commodity. We offer amber extracted honey in barrels at from 6 to 7½; fancy table honey from 9 to 10, in 60-lb. cans. Fancy comb honey, 16 to 18. The above are our selling prices. We are paying 28 cts. per lb. cash and 30 in trade for good to choice yellow beeswax, free from dirt, delivered here.

THE FRED W. MUTH CO.,
Jan. 13. 51 Walnut St., Cincinnati, O.

SAN FRANCISCO.—Honey so far shows no further change, jobbing prices being the same, and no concessions are offered by local dealers, though stocks are larger and prices to growers are weak. We now quote: Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 6½ to 6¾.—*Pacific Rural Press.*

INDIANAPOLIS.—Demand for best grades of extracted honey is good, while the demand for comb honey is not so brisk. Very little honey is being offered by producers at present. Jobbers are offering the following prices, delivered here. No. 1 and fancy comb, 16 to 17, net weight; extracted white clover, 9 to 10. Beeswax, 28 cash or 30 in exchange for merchandise.
Jan. 20. WALTER S. POUDER, Indianapolis, Ind.

ST. LOUIS.—The honey market has not undergone any change since ours of the 10th. Trade is exceedingly slow at the following prices: Fancy white comb, 15 to 16; No. 1, 14 to 15; amber, 13 to 14. Broken and defective honey sells at considerably less. Extracted white, in cans, nominal at 8 to 8½; amber, in cans, 7½ to 8; in barrels and half-barrels, ½ to 1 ct. per lb. less. Granulated honey sells at about ½ ct. less than liquid. Beeswax, 26½ for choice pure. All impure and inferior, lower. R. HARTMANN PRODUCE CO.,
Jan. 20. St. Louis, Mo.

KANSAS CITY.—The demand for comb honey is a little better, but there is not much improvement in extracted. We quote: Fancy white comb, 24-section, $3 25 per case; No. 1 white comb, 24-section, $3 00 to $3 10; No. 2 white and amber, 24-section, $2.75; extracted white, 8 to 8½; extracted dark, 7. Beeswax, 25 cts. C. C. CLEMONS & CO.,
Jan. 20. Kansas City, Mo.

CHICAGO.—There have been some heavy consignments of Western honey to this market, both extracted and comb. It must be held by the receivers for some time, as it can not be placed at any thing near prevailing prices. One trouble with which we contend is the limited consumption.

R. A. BURNETT & CO.,
Jan. 21. Chicago, Ill.

ZANESVILLE.—This market is still well stocked with honey, especially alfalfa. An occasional shipment of clover comb comes in from eastern and north-central States. The demand for honey, both comb and extracted, is still light, though it has toned up slightly since last report. No. 1 to fancy white comb would bring, first-hand, 15 to 16 cts., wholesaling at about 17½ to 18. Extracted, in 60-lb. cans, is quoted at 11 to 12½, wholesale. Beeswax quiet. Would pay 30 cts. in exchange for bee-supplies f. o. b. here. EDMUND W. PEIRCE,
Jan. 21. 136 W. Main St., Zanesville. O.

BUFFALO.—The demand is improving a little for white comb honey. Not very much in dealers' hands here. Extra good demand for white extracted, quick sale on arrival. No. 1 fancy white clover comb, 16 to 17; No. 2, 13 to 15; No. 1 buckwheat, 11 to 12½; No. 2, 10 to 11. White clover extracted, 9 to 11; amber, 8 to 8½; dark, 7 to 8. Beeswax, 30 to 32.

W. C. TOWNSEND,
Jan. 12. Buffalo, N. Y.

DENVER.—We quote: No. 1 white comb honey passes off, 24 sections, $3.25; No. 1 light amber, $3 00 to $3.10; No. 2, $2.75 to $2.90; strictly No. 1 white extracted, 9 to 10; light amber, extracted, 8 to 9; strained, 6¾ to 7½. We pay 24 cts. for clean yellow beeswax delivered here. COLORADO HONEY-PRODUCERS' ASSO'N.
Jan. 23. F. RAUCHFUSS, Mgr.

ST. PAUL.—Fancy white-clover honey, new, per lb., 18; strained, in 60-lb. cans, 10.

W. H. PATTON, Sec.

KANSAS CITY.—Western comb, No. 1, per case, $3.75; No. 2, per case, $3.50.—*Cincinnati Packer*, Jan. 25, 1908.


# THE BUSY BEE-MEN.

It won't be long before the bees
Will need some new abodes.
THE BUSY BEE-MEN sell THE HIVE
MUTH SPECIAL by the loads.

It can't be beat, and costs the same
As any 'in the ring.'
But take a look into our book—
You'll say, "That's JUST THE THING."

Send for our free catalog, and see our MUTH SPECIAL DOVETAILED HIVE illustrated. You can't believe it unless you see it.

## THE FRED W. MUTH CO.,

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Send for our prices on table honey. We have the finest.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department,

205 La Salle St., Chicago, Illinois.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

HILDRETH & SEGELKEN,

265-267 Greenwich St. 82-86 Murray St.

NEW YORK.

**W. H. Laws says,** If there is a queen-breeder who can boast of better stock let him trot out the proof. Testimonials enough to fill this book. Will give you only one. Mr. J. C. King, Washington, D. C., writes, "For two years I have had one of your queens in my apiary. Each season she has given me over 200 lbs. comb honey; last season she actually stored while other colonies starved. I have over twenty strains in my three apiaries, but yours is the best."

Now is the time to get a fine breeding queen; stock up this fall and double your crop of honey the coming season. Single queen, $1.00; 6 for $5.00. Extra select breeders, $5.00. Safe arrival and satisfaction guaranteed.

W H LAWS, Beeville, Bee Co., Texas.

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JOSEPH NYSEWANDER

506-7 W. 7th ST. DES MOINES, IOWA

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Prompt Shipment Low Freight

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We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

HOWKINS & RUSH

241 BULL ST. SAVANNAH, GA.

Established 1873
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72 pages.
Semi-monthly.

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$1 per year.
When paid in advance:
2 years, $1.50.
3 years, $2.00.
5 years, $3.00.

*Devoted to Bees, Honey, and Home Interests.*

Published by
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J. T. CALVERT, Business Manager

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CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. The notice should be sent two weeks before the change is to take effect.

DISCONTINUANCES.—The journal is sent until orders are received for its discontinuance. We give notice just before the subscription expires, and further notice if the first is not heeded. Any subscriber whose subscription has expired, wishing his journal discontinued, will please drop us a card at once; otherwise we shall assume that he wishes his journal continued, and will pay for it soon. Any one who does not like this plan may have it stopped after the time paid for it by making his request when ordering.

HOW TO REMIT. Remittances should be sent by Draft on New York, Express-order or Money-order, payable to order of The A. I. Root Company, Medina, Ohio. Currency should be sent by Registered Letter.

AGENTS. Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

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Foreign subscribers can save time and annoyance by placing their orders for GLEANINGS with any of the following authorized agents. at the prices shown:

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We have many agents making $5 to $10 daily. Write us and we will give you names of agents near by who are making at least $5 daily We can easily prove that the "O-HI-O" is the best money-maker you ever heard of, and will make you more money than any thing you ever sold or are now selling. *Write us at once and we will prove it.*

Guaranteed to save 50 per cent in fuel, labor, time, and provisions. A whole meal cooked over one burner on any style stove. It assures you deliciously cooked hot meals; *30 days' trial.* No intermingling of odors or tastes. Fine for use in summer cottages. A necessity every day of the year. The only healthful way to cook foods and breadstuffs.

*Handsomely illustrated catalog free.*

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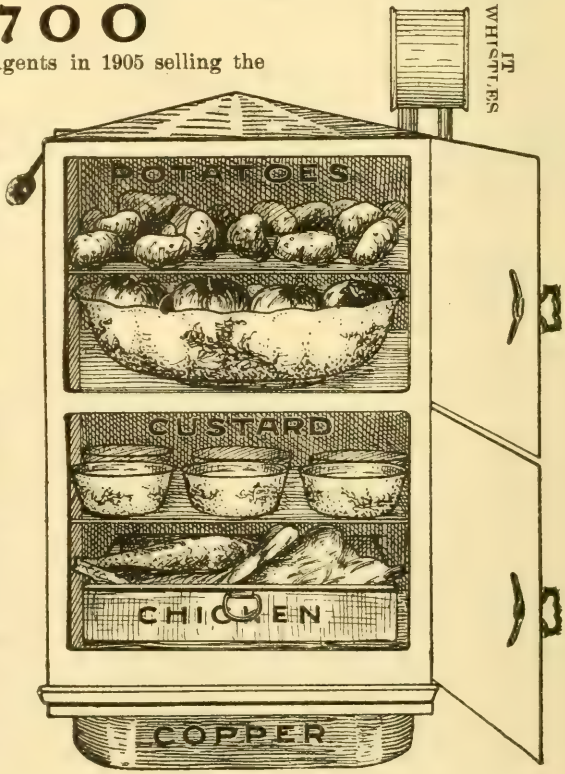
**908 Jefferson Av., Toledo, O.**



# Subjects for Discussion!

The cornerstone of successful publishing lies in finding out what readers want, and then giving it to them. With this end in view I asked my subscribers, last September, to tell me what subjects they would like discussed. The list is decidedly interesting and practical. Here are some of the topics:

Which is the best comb-honey super, and why?

How can we make rapid increase the most profitably?

What is the cause and cure for pollen being stored in the sections?

How much can be learned of the conditions of a colony from outside indications?

Give the comparative advantages and disadvantages of shipping comb honey by freight or by express.

What is the best management for the production of honey with only white clover as a source of nectar?

How deep from glass to floor ought a solar wax-extractor to be made to secure the best results?

Is it practical to winter bees successfully in a building wholly above ground?

Is it possible for some bee-keepers to improve profitably the honey-producing capacities of their localities?

Shall we buy bees, or build up a smaller number of colonies, when bees are wanted to start an out-apiary?

Give the comparative advantages and disadvantages of comb and extracted honey production. Would like to hear from R. L. Taylor.

Give the needed size of a bee-cellar in proportion to the number of colonies it is to contain.

What is the best method of getting honey out of cappings—by draining or by pressure or how?

What is the best and most simple way for the ordinary bee-keeper to rear any extra queens that may be needed?

Give the comparative advantages and disadvantages of queen-excluders in the production of extracted honey in out-yards.

Those who have had experience in wintering and springing bees protected by tarred felt are asked to report—giving their experience and views.

How can we requeen an apiary to the best advantage when producing either comb or extracted honey, and not lessen the working force nor lose any surplus?

Can the "feeding back" of extracted honey to secure the completion of unfinished sections, or to produce comb honey, be made profitable? If so, how?

How can we improve our bees by breeding? How shall we select the foundation stock? Will stock deteriorate, or "run out," if left to itself? Shall we breed "in and in," depending upon selection for improvement, or is it desirable to introduce new blood occasionally? and, if so, how often? Is any thing gained by crossing varieties? Is there any truth in the statement that bees lose their vigor in the South?

These topics are printed here for two reasons: One to show what topics will be discussed in the Review in the near future, and the other to ask you to send in articles on any of these subjects Any article that I think well enough of to publish I'll pay for—liberally.

The Review is $1.00 a year; but just at present I can send all of the back numbers of 1907 free of charge to the man who sends $1.00 for 1908 In other words, you can get 1907 and 1908 for only $1.00 Add another dollar and the book Advanced Bee Culture will also be sent. Book alone, $1.20.

**W. Z. HUTCHINSON, :: :: :: FLINT, MICH.**


The following extract from a recent letter received from one of our advertisers, to whom we had written for certain information regarding their financial standing and their ability to take good care of orders that might be placed with them by our subscribers, speaks for itself:

COLTON CAL., Jan. 13.

Your carefulness in accepting advertising should certainly be appreciated by your subscribers, and this inquiry as to our responsibility has given us a great deal more confidence in the idea that your publication will be a good one for us

[Signed] CALIFORNIA PRODUCTS CO.

In this connection we desire to call the attention of our readers, particularly those throughout the East, to the advertisement of this concern, which is found on page 175.

OLDS' SEED CATALOG.

We are in receipt of an excellent catalog from the reliable seed-distributors, the L L Olds Seed Co., of Clinton, Wis This, evidently, is a farmer's catalog, for it pays great attention to farm seeds such as corn oats, potatoes clovers, barley spelt, alfalfa, millet, melons, cabbage, squash, tomato, and other familiar farm seeds. We suspect the seeds recommended by the Olds Co. are just about right for the central and northwestern States, and we know them to be a reliable concern. Of course, they list such flower-seeds as may be necessary for the proper adornment of the rural home. We believe that any one buying from them will receive fair treatment. A postal will secure their catalog by return mail. When you send for it, please mention this journal

HUMPHREY'S GREEN-BONE CUTTER.

One of the greatest conveniences on a poultry-farm is a good green-bone cutter—one that can be depended on to do the work when required, without extraordinary physical effort. As will be observed by his advertisement on another page, Humphrey, of Joliet, Ill, claims to have just such a machine, and we know he is a reliable man. There is no longer any doubt about the great value of these bone-cutters to the poultryman, more especially the breeder who is conducting an egg campaign. Green cut bone not only produces more eggs, but it is a necessity to fowls which are confined, when it is impossible for them to secure worms and bugs, such as they delight in, and which are necessary to their existence.

Another point that should not be lost sight of is the practical economy of green cut bone, since all it costs is the labor, in most parts of the country at least. The proper use of it will turn a poultry failure into a success. If you require a green-bone cutter, please write Mr. Humphrey Mine St, Joliet, Ill., for catalog and particulars of his introductory offer.

# Gleanings in Bee Culture

E. R. ROOT, Editor — A. I. ROOT, Editor Home Department — H. H. ROOT, Ass't Editor

Department Editors—DR. C. C. MILLER, J. A. GREEN, PROF. A. J. COOK, J. E. CRANE, LOUIS H. SCHOLL, G. M. DOOLITTLE, R. F. HOLTERMANN, "STENOG," W. K. MORRISON.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### KELLOGG'S STRAWBERRY CATALOG.

This is certainly a model catalog, gotten out by a model firm. It is something more than a mere catalog, for it contains a first-class treatise on strawberry culture, such as one would naturally expect to pay 25 cents for. In fact, it looks more like a work on the culture of strawberries than a catalog. The berry business is particularly well suited to the temperament of the average bee-keeper, and no finer occupation can be found. A glance at this fine book will show this to be the case. It is handsomely gotten up, well printed and illustrated on good paper, and, all together, reflects credit on the business and enterprise of the firm getting it out. We believe any painstaking intelligent man could actually learn strawberry-growing from this so-called catalog, and we mean what we say. It is almost needless to add that the firm sending out such a book is reliable, prompt, and satisfactory in all its business relations. Write at once to R. M. Kellogg, Three Rivers, Mich., for a copy. Then take your time to make a selection of berry-plants. Study its wisdom on berry culture, and you will not regret it.

### BURPEE'S, THE GREAT SEED FIRM.

We are again indebted to this firm for a copy of their well-known publication, "Burpee's Farm Annual," and, if possible, the present copy is an improvement on its predecessors. It has six beautiful colored plates of specialties with a handsome lithographed cover. In addition it shows sixteen new varieties of vegetables and flowers in their natural colors. It is needless to say that a firm which can turn out such a catalog has enterprise, genius, and financial resources back of it, and, of course, is sure to meet with success in its chosen field.

The Burpee people are responsible for some vegetables and flowers whose names are now household words, in this country at least. For example the well-known Rocky Ford melon is simply Burpee's Netted Gem; and in sweet peas they have had the field to themselves for some years. They have also taken a great deal of interest in developing special varieties of vegetables suitable to the market-gardener, and have been remarkably successful along this line. Catalog is free if you mention Gleanings.


**4 PER CENT.**

**There is Nothing Speculative**

about a savings account with The Savings Deposit Bank Company—

It is the one form of investment that does not fluctuate in value—

It is always there when you want it—

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It is the safest, most satisfactory investment your money can find.

Our booklet describes our methods and management, and explains the advantage of our simple banking-by-mail system.

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**Established 1892** **A State Bank**

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THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

# FIX YOUR ROOF

**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

**Roof-Fix** **The Perfect Roof Preserver,** makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our **free roofing book** tells all about it. Write for it today.

**The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.**

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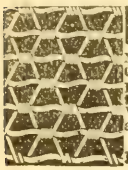

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**THE DEMING CO.,**
**545 Depot St., Salem, O.**
Henion & Hubbell,
Agents, Chicago, Ill.

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# Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage.

**RAWLINGS IMPLEMENT COMPANY**
**9 and 11 W. Pratt St. Baltimore, Md.**

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**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **...Boston**

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**THE BEE & POULTRY INDUSTRIES DOVETAIL**
**and go well together**

In poultry culture the main thing is health, and

**Conkey's Poultry Remedies**
Are the World's Standard

This is the season for Roup and the sneezing, wheezing, swollen headed fowls should be quickly restored to health, usefulness and profit. You cannot afford to experiment, so use

**CONKEY'S ROUP REMEDY**

Just a thimbleful in the drinking water and they cure themselves. Onr absolute guarantee goes with it, and it means your money back should it disappoint you.

**Conkey's Book on Poultry Free** for 4c in stamps and names of two others interested. It solves the whole poultry problem and is worth dollars to any poultry raiser. **GET IT TODAY**

**THE G. E. CONKEY CO.**
**315 OTTAWA BLDG , CLEVELAND, O.**

Conkey's Poultry Remedies are carried by A. I. Root Co. at their branches, New York, Philadelphia, Washington, Chicago and Medina.

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# Poultry Magazine,

Monthly, 50 to 100 pages, its writers are the most successful Poultrymen and women in the United States. It is

**The POULTRY TRIBUNE,**

nicely illustrated, brimful each month of information on How to Care for Fowls and Make the Most Money with them. In fact so good you can't afford to be without it. Price, 50 cents per year. Send at once for free sample and **SPECIAL OFFER TO YOU.**

**SWINE MAGAZINE**

Monthly 24 to 64 pages, best writers and information how to **Make Big Money With Hogs.** It is

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Printed on heavy paper, well illustrated with Prize Winning Animals, Houses, Fixtures, &c. 50 cts. per year. **Our Premium Proposition to Agents** on these two Magazines enables you to get one or a pair or more of pure bred pedigreed pigs, 4 kinds, **absolutely FREE** or a big **Cash Commission** if you choose. Write me today for samples of the two papers and full particulars.

**R. R. FISHER, Publisher, Box 50, Freeport, Ill.**

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**GREIDER'S FINE Poultry Catalogue**

for 1908 is larger and better than ever. Tells all about pure-bred poultry and **illustrates 60 varieties.** Contains 10 **beautiful chromos** of leading breeds—pretty enough to frame. Tells of best Louse Killer, how to cure diseases, make money. Only 10c postpaid. Send to-day for a copy.

**B. H. GREIDER, Rheems, Pa.**

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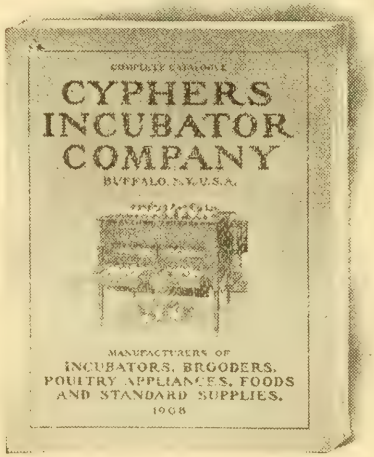
FREE TO OUR READERS—CYPHERS INCUBATOR COMPANY'S COMPLETE 208-PAGE CATALOG FOR 1908.

Herewith is shown a fac-simile illustration of the Great Free Book of Cyphers Incubator Co., Buffalo, N. Y., which will be mailed free to our readers on




request, provided you mention this journal. The new catalog shown in the picture consists of 208 pages, 7½ by 10 in size. It fully illustrates and describes the 72 valuable articles manufactured by this well-known firm for the use of all classes of poultry-keepers. It also contains photographic views of many of the world's largest poultry-plants, of America's leading egg-farms, and portraits of the most successful poultrymen of the United States and Canada Write to-day for a free copy of this valuable publication, addressing the nearest office of Cyphers Incubator Co., as follows: Factory and home office, Buffalo, N. Y. Branch houses, 21 and 23 Barclay t., New York; 310 Fifth Ave., Chicago, Ill; 26—30 Union St., Boston, Mass.; 2325 Broadway, Kansas City, Mo.; 1569 Broadway, Oakland, Cal.; 119 Finsbury Pavement, London, England.

---

ALLEN'S STRAWBERRY CATALOG.

We have received our copy of W. F. Allen's catalog of strawberry-plants. He now lists other plants and seeds besides. Mr. Allen is a king among strawberry-growers and at one time published a strawberry paper. His place on the Eastern Shore of Maryland is in the center of a great strawberry-growing section where the berries are shipped to New York, Philadelphia, and Boston by the trainload. Mr. Allen ships plants by the carload (express), sending them to all parts of the United States and even to foreign countries.

Almost all berry-growers also grow vegetables as well, and Allen's catalog now contains a fair list of the leading sorts used by market-gardeners. One of the specialties of the Eastern Shore is its sweet potatoes the soil and climate being just to the liking of this great crop. Another crop which grows with great success down there is crimson (or scarlet) clover. It is very extensively planted in Maryland and Delaware, and flourishes with great luxuriance. It is listed here with other farm seeds. This certainly is a catalog well worth sending for. Write to W. F Allen, Salisbury, Md., and please mention this journal when doing so.

# FROM MAINE TO MEXICO.

Strange it is that some people have an idea that the wants of the readers of a bee-journal are limited to such things as bee-keepers' supplies, queens, etc., forgetting that the average bee-keeper's family requires a varied line of goods the same as the rest of humanity.

In February last we received an order for a single insertion of a five-line advertisement of seed corn, which cost the advertiser $1.00. On July 10 he wrote us:

**CALVIN S. HUNTER,**
**GROWER**
**BEST "WHITE SEED CORN."**
**SINCE 1865.**

**SEVEN MILE, O.** July 10, 1907.

The A. I. Root Co.,
Medina, O.

Gentlemen:--

The fruit of my advertisement with your high-class journal reached from Maine to Mexico. I send you a sample order and international money-order in Spanish, which I am sure Mr. Root, Sr., will be glad to see. Tell him I sent this man the finest corn in the kingdom, for I was not looking for an order "from the uttermost parts of the earth."

Very truly yours,
Calvin S. Hunter.

This man is only a chance advertiser in GLEANINGS in our classified columns, and yet he has to report such results as above. He is one of the readers of GLEANINGS lately referred to as being one of the substantial buying class, and is only incidentally an advertiser with us. In looking over his correspondence, we find the following statement from him:

**SEVEN MILE, O.,** July 10, 1907.

The A. I. Root Co.,
Medina, O.

Gentlemen:--

I have a great respect for GLEANINGS, and, on our table, containing twenty to thirty of the leading journals and papers, it is the gem of the lot.

Yours very truly,
Calvin S. Hunter.

When GLEANINGS stands so high in the estimation of its readers, it isn't to be wondered at that 35,000 of them would constitute a strong buying class.

For many lines which haven't been widely advertised with us as yet, it offers a very fertile field, probably many times better than the overworked columns of the agricultural papers. Particular information regarding the class of people we reach, or any thing relating to the subject, may be secured by addressing

**ADVERTISING DEPT. GLEANINGS IN BEE CULTURE, MEDINA, O.**

# The Danzenbaker Comb-honey Hive

MICHIGAN is one of the leading States for the production of fancy comb honey, and we particularly urge those of our customers interested in this to try the Danzenbaker hive. Read what Mr. Wortman says below:

**MORE HONEY.**

I have a small apiary in Danzenbaker hives. I have taken more honey from them than four of my neighbors with other styles of hives. I have sold a good many Danzenbaker hives, and every one is wanting more for the coming season. (Signed) HERMAN F. WORTMAN.

Gilmore, Mo., Dec. 1907.

**BETTER HONEY.**

"I have an apiary of about fifty colonies, from which I secured from sixty to one hundred and forty pounds of the *finest* comb honey per colony you ever saw. I use the Danzenbaker super and consider it the best. I love bee-keeping, and believe there is no other business so interesting as keeping a few colonies of bees. (Signed) FRED W. RANKIN.

Cranesville, N. Y., Dec. 26, 1907.

**BETTER PRICES.**

It is a recognized fact among the users of this hive that the honey produced is much finer in appearance, as stated by Mr. Rankin, and, this being the case, it follows that better prices are secured. This is by reason of a much larger percentage being of a fancy and extra fancy grades which command the highest prices. These grades are never a drug on the market; indeed, many discriminating buyers often make special inquiry for honey in Danzenbaker sections.

## M. H. HUNT & SON

REDFORD, (NEAR DETROIT) MICH.



TO THE

# BEE-KEEPERS

## OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

**E. GRAINGER & COMPANY,**

Deer Park,

**Toronto, Ontario, Canada.**

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.



# APICULTEURS

des pays de langue Francaise.
Nous vous informons que

## L'Apiculture Nouvelle

Revue mensuele illustree,

est tiree de:

## Gleanings in Bee Culture

augmentee et completee par des collaborateurs Europeens, reconnus comme Apiculteurs eminents.

L'Abonnement d'un an est envoye franco pour tous pays de l'Union Postale, contre l'envoi par mandat poste de 7.50.

Un numero specimen, ainsi que notre catalogue francais de tous les articles de la

**A. I. ROOT CO.**

est envoye gratuitement sur simple demande, adressee a

**Emile Bondonneau,**

Agent General pour l'Europe et les Colonies
de A. I. ROOT CO.,
142 Faubourg Saint Denis 142 Paris (10e)
France.

L'Edition Francaise de l'A B C de l'Apiculture est egalement parue.

LET US SEND YOU

# An Outfit for Making A Start in Bee-keeping

AN OUTFIT composed of five of our divisible-brood-chamber hives, with Danz. supers in the flat, including a Standard Smoker, Veil, A B C Book, with one year's subscription to GLEANINGS IN BEE CULTURE, can be furnished for an even $15.00.

This outfit will be shipped promptly by freight or express on receipt of $15.00.

**The A. I. Root Co.,**

**Syracuse, .. .. .. .. New York.**

# WE DO NOT SELL ROOT'S SUPPLIES

So many advertisers in GLEANINGS IN BEE CULTURE sell supplies bought from the Root Co. that to explain away a false impression we are compelled to state that we are not jobbers, but *manufacturers*. We make all the Bee-supplies we sell. Minneapolis is the largest lumber-distributing point in America. We buy lumber to advantage; we manufacture by water-power; we have lowest freight rates, and we sell on manufacturer's profit basis. **Let us quote you prices.**

**MINNESOTA BEE-KEEPERS' SUPPLY COMPANY**
**DEPT. 22 .. .. .. .. .. MINNEAPOLIS, MINN.**

# Keep your on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once. For prompt shipments and good service, we are at your command.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO., MISSOURI.**

# What's the Matter With Hilton?

WHY, HE HAS A LOT OF SUPPLIES HE WANTS TO LET YOU HAVE WITHIN THE NEXT SIXTY DAYS AT A DISCOUNT, TO MAKE ROOM FOR THE NEXT SEASON'S GOODS. JUST SEND A LIST OF WHAT YOU WANT AND GET ESTIMATE. IF YOU HAVEN'T HIS FORTY-PAGE ILLUSTRATED CATALOG, SEND FOR IT AT ONCE.

CASH OR SUPPLIES FOR BEESWAX AT ALL TIMES

**GEORGE E. HILTON**
**FREMONT, :: :: MICHIGAN**

# MAKE UP YOUR ORDER

from *any catalog of Root's goods* published this year; deduct the *early-order discount*, and send us the order with remittance to cover amount. The goods will be forwarded to you by the shortest route at once.

*Our specialty is bee literature.* Make a list of the bee books and journals you intend buying this year at publishers' prices. Deduct 10 per cent; or if the total is more than $10.00, 15 per cent. Send us the net amount and we will send the books prepaid. Catalog and price list of bee-supplies, bee-books, and honey free.

**GEO. S. GRAFFAM & BRO., Bangor, Maine**

# Eastern Bee-keepers

We furnish every thing a bee-keeper uses and allow a *liberal discount* for early orders. We keep all supplies in stock, and can ship promptly by any route. Let us quote you on what you want? Catalog free.

**I. J. STRINGHAM,**
Apiaries—Glen Cove, L. I. 105 Park Pl., N. Y. City.

# Bee-keepers' Supplies Sold

At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. **W. D. SOPER, Jackson, Mich.**

# THE DANZENBAKER SMOKER

PAT. OCT. 3,'06, JUNE 4,'07

**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

**IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR**

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case**, and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed**, giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot**: no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt**, expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

**1884 1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M. Jenkins**
**Wetumpka, : : Alabama**

# Dittmer's COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

JOBBERS FOR
Central Pennsylvania
. . . for . . .

# ROOT'S GOODS

TRY THE DANZ.
COMB-HONEY HIVE

The Danzenbaker hives I got last season have given splendid satisfaction; in fact, I have kept my bees outside this winter, which is seldom attempted in Manitoba, and up to date they have come through in splendid shape. I think the hive did it.
Yours truly, LAURENCE C. CLARKE.
Morden, Man., March 5, 1907.

Send for catalog. Best shipping facilities in the State.

**Frank W. Prothero**
**Dubois, : : : Pennsylvania**

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**
H. G. ACKLIN, MANAGER
1024 Mississippi Street, St. Paul, Minn.

# At St. Louis

On a .

to all points in the South and Middle West.

Send for our free illustrated catalog of

**Root's Bee-supplies**

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**
DEPT. B,
1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of ROOT'S GOODS IN STOCK, and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**
**Dallas, : : . Texas**

# HIDES ARE TOO VALUABLE TO SELL

Your horse and cow hides will be worth more to you made up into Fur Robes, Coats, Mittens, etc., than the little money the butcher will pay you for them. A coat like we will make for you from one large hide or two small ones, for from $9.50 up, will last for years; be water, moth and wind proof, and will keep you snug, warm and dry in the coldest, wettest weather. Robe lined with best plush from $7.00 up.

**No matter where you live WE WILL PAY THE FREIGHT on all hides sent to us to be made into Coats and Robes.**

Any color looks well. Our process of tanning makes the skins soft and pliable, and the finished coat or robe will be so handsome it will be a surprise to you if you never saw one of our cow or horse hide garments before. We guarantee workmanship and complete satisfaction—are the largest firm in the country tanning, manufacturing and selling direct to consumer. Don't sell a hide, but write to us for our 40-page catalog giving full particulars and showing the various styles of fur goods we make. It's **FREE**—write for it today.

**NATIONAL FUR and TANNING CO.,**
**119 Peeler St., Three Rivers, Mich.**

# This is the Book that will Increase Your Fruit Profits

A DOLLAR BOOK FOR 1 CENT

## High Grade Fruit Trees, Vines and Plants

Special low prices on **Plum, Apple, Peach** and **Dwarf Pear Trees, Roses,** also **Asparagus Roots, Currant Bushes** and other small fruits. Order trees direct from our nursery and save agent's profits and **half your money.**

Everything you want for Orchard, Garden, Lawn or Park. Send to-day for Green's Dollar Book on Fruit Growing, also for our Fruit Catalog, and a copy of Green's Fruit Magazine, **all a gift to you.**

**GREEN'S SAMPLE OFFER** One Elberta Peach Tree, one Red Cross Currant Bush, one C. A. Green New White Grape Vine, one Live-Forever Rose Bush, all delivered at your house by mail for 25 cents.

Plum Trees $6.00 per hundred.

**GREEN'S NURSERY CO.**
**Rochester, New York**
**Box**

# ABC AND XYZ of Bee Culture

By A. I. and E. R. ROOT

## New 1907 Edition

NOW ON SALE.

## LARGER and BETTER

115,000 Copies have been Printed

## A BEE-KEEPERS' ENCYCLOPEDIA

## All the New Ideas

Hundreds of Illustrations to make every thing plain and practical

## Nearly 600 Large Pages

PRICES

Cloth-bound ..... $1.50
Half Leather ..... 2.00
Full Leather ..... 2.50
Postpaid to any Country in the World

## THE A.I.ROOT CO.

MEDINA :: :: OHIO

Only two years have elapsed since we brought out an edition of 15,000 copies of the well-known A B C of Bee Culture. This brought up the number to 100,000 copies, thereby surpassing in popularity all other bee-books ever printed.

The demand for these has been so great that we were compelled to undertake a new edition at once, and in doing so we took the opportunity to revise and greatly enlarge it again, though it had been generally considered quite a large book.

In doing so we brought in new blood to assist us, give new ideas, and otherwise enable us to produce as good a book as it is possible to make at a popular price. If you will carefully examine a copy you will be prepared to admit the new volume is quite an improvement on its predecessors. To keep pace with improvements it contains nearly 100 double-column pages more than the previous edition.

The new methods of queen-rearing have been carefully reviewed, and the main points incorporated in the new edition, so that the practical bee-keeper who possesses a copy will have the best ideas of the subject constantly by his side for reference.

The new methods of wax-production are treated in an exhaustive fashion; and as this subject is now of more importance than formerly, more space has been devoted to it.

The new power-driven automatic extractors are amply illustrated and described. The subject of diseases has received entirely new treatment to keep pace with the new discoveries of the last few years. The laws relating to bees have for the first time received full treatment. No other bee-book treats of this very important subject. Honey, sugar, nectar, and glucose are carefully defined in accordance with the demands of our new pure-food laws.

In accordance with the ideas of its first author, A. I. Root, the new A B C and X Y Z is *eminently practical.*

German edition (new), paper covers, $2.00; cloth-bound, $2.50. Postpaid anywhere. This is the famous A B C in the language of the Fatherland, to suit our many German friends.

French edition (new), cloth-bound, $2.00, postpaid This is another edition, translated into the beautiful language of France.

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# A Humming Business

*By the Bee Crank.*

Panics and near-panics have no terrors for the bee-man. His business is always a humming one. His tireless workers know little of hard times and care less for them. They are always busy during their season.

And their season is not far away. Now is the time to get ready for it. My warerooms are full of fresh new goods, and orders will receive as always, the kind of attention you want them to receive.

I handle Root's goods at Root's prices. Can make immediate shipment of metal-spaced Hoffman Frames, Danzenbaker Hives, Dovetailed Hives, Section Honey-boxes, Weed-process Comb Foundation, Bee-veils, Smokers, and every thing used by bee-keepers.

**HONEY.** Particular people are sending here for finest white-clover honey. If interested, write for quotations.

Chicago, Ill., Jan. 16, 1908.
*Walter S. Pouder:*—Kindly ship another 120-pound lot of your superior white-clover honey This honey is so delicious that a mere taste makes one hungry for more, and I have a number of small orders awaiting. I am proud of your honey, and would offer it to President Roosevelt with the same feeling that I offer it to my neighbors.
Thanking you for favors, HARRY LEBNER.

**Beeswax Wanted.** I pay the highest market price for beeswax. Ship by freight or express according to amount. New catalog free.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Company, Medina, Ohio

E. R. ROOT, EDITOR — A. L. BOYDEN, ADVERTISING MGR.
H. H. ROOT, ASST. ED. — J. T. CALVERT, BUSINESS MGR.
A. I. ROOT, EDITOR OF HOME DEPARTMENT

Vol. XXXVI. FEBRUARY 1, 1908. No. 3


## STRAY STRAWS

by Dr. C. C. MILLER

SOME SAY honey is a luxury, some say it is a necessity; but I rather like M. V. Facey's idea that it's both. He says, p. 86, "It is a luxury, but where constantly supplied it is a necessity."

RIGHT YOU ARE, Louis Scholl, in thinking producers should have more to say about prices of honey, p. 87. But let me whisper in your ear that, even in the North, some of us set our own prices.

LATELY I saw a queen-excluder advertised, I think it was in a German catalog, about the same as the Marbach, only it was of wood. One would think it wouldn't last long, but it might take the bees some time to gnaw the round wood at the right places.

J. L. BYER, after reading what you say, p. 98, I have a word of advice for you. Please remember that I am older and more experienced than you. My advice to you as to the matter of feeding in the fall is to *keep right on the way you have been doing.*

OF MANY A MAN it is true that he preaches better than he practices. I am glad to say that the reverse is true of my good friend G. M. Doolittle. Notwithstanding his shaky preaching about bees holding the heat in the cluster, his practice, as given p. 83, is sound as a dollar. Shake, Gilbert.

I DON'T KNOW what Louis Scholl means, p. 87, by saying a *nail* to hold a hive-tag "would soon be driven into the wall of the hive-bodies when these are handled," for in all the years I have used them I have never known one to be thus driven in. I must say, however, that I like the looks of his arrangement.

THAT PLAN of stretching the cord down tight and fastening with a safety-pin, as shown at Fig. 5, is especially to be commended to ladies. Indeed, it is the invention of a woman not a thousand miles from Marengo. [Yes, it is true that Miss Wilson suggested to us the use of the safety-pin in a bee-veil as described in our last issue.—ED.]

DOOLITTLE SAYS that, in his locality, a colony which has stored comb honey is rarely short of stores for wintering and springing. Likely that is true of any locality *if* hives are large enough, and I suspect he is talking about ten-frame hives; at any rate, with eight-frame hives last spring I should have suffered heavily had I not had an extra lot of heavy combs of honey.

I READ GLEANINGS, Jan. 15, as far as p. 80, and then I stopped and wrote three letters. To Dr. Wiley I wrote, "Hearty thanks for insisting that glucose shall be called glucose." To President Roosevelt and to Secretary Wilson I wrote, "If glucose is glucose, please don't let it be labeled any thing but 'glucose.'" [Good! If others have not already written, let them do so at once.—ED.]

AS FOOTNOTE to that veil article, p. 93, it might be said that, where one works much with bees, it is well to use a permanent bee-hat with veil sewed to the edge of the brim instead of having a rubber band hugging the crown. Where a rubber cord is used at the lower edge of the veil it is better to have a hem of white material to avoid crocking the clothing. [Yes, and the veiling could be sewn half an inch or one inch from the edge of the hat-brim. The purpose of this is to keep the sun from striking the veiling at such an angle as to interfere with the sight.—ED.]

THE LONGER the honey remains in the hive, the less sucrose (cane sugar) will be found, page 81. Please explain. [If we are correct, the process of inversion continues after the honey has been sealed in the combs. The older it becomes, the less there will be of sucrose or cane sugar. Apparently the process of inversion, after the bees get through with it, is not entirely complete; therefore the United States standard allows us a small per cent of sucrose in normal honey. But that does not mean that some one else may put in cane sugar; for the cane sugar of com-

merce is different from the cane sugar or sucrose found naturally in honey. The modern honey-analyst, at all events, is able to detect any foreign ingredient put into honey, even cane sugar.—ED ]

"SOME RESIDENTS of the buckwheat country consider buckwheat honey the best honey sold, and . . . there is every thing in getting our tastes educated to a certain flavor," p. 78. I think the prevailing honey is the one generally preferred in each locality; but I feel quite sure that there is a decided difference in taste aside from locality or education. In this locality, where buckwheat honey is rare, a few people strongly prefer it to white clover. A member of my family prefers a certain fall flavor to white clover, while the very smell of it is offensive to me.

I WONDER if something unusual in transit or otherwise had not happened to that sample of heather honey received in Medina, p. 78. I think I never sampled heather honey except once, and I surely did not call it *vile*. It was from Scotland, and may have differed from your English heather. [We do not know how to explain it; but we presume the sample sent to us was fine to those who were consumers of that kind of honey. For example, we consider Colorado alfalfa or California sage as very fine honey; but there are some who do not like either—especially those who like strong-flavored dark honey.—ED.]

"I TOLD YOU SO. I wanted you to put that in, and you wouldn't do it." That's what my assistant said to me upon reading what Mr. E. F. Atwater says, p. 82, about the behavior of a single piece of foundation fastened top and bottom. But I couldn't say it with the same authority as Mr. Atwater, not having had his experience; yet the fact remains that it was just because I wanted to avoid the unpleasant behavior of the single piece fastened at the bottom that I invented the bottom starter. That fastens the section at the bottom just as securely as the single piece fastened top und bottom, *but does not give the same opportunity for sagging*. Bottom starters require no extra machinery, and any one can try them.

E. H. BRADLEY must live in "the land of contraries," p. 91. When a colony swarms he keeps the strength as much as possible with the mother colony, and depends on it for surplus; elsewhere the swarm is thus used. In his locality the bees of a swarm seem to return to the parent stock, only "enough will remain to take care of all the eggs the old queen can lay;" elsewhere no bees of the swarm return to the parent. Unless he takes precautions the swarm may swarm again, making a virgin swarm; elsewhere no precautions are considered necessary to prevent a virgin swarm. With him it is no trick to produce prize honey over the black combs of the mother colony; elsewhere, if there is any difference, finer sections can be produced over a swarm with new combs.

REFERRING to p. 78, I think the Miller escape has the advantage that it is cheaper of construction, and takes less time in using, while the bees may more readily desert the Whitney. But if I preferred the Whitney I would go back to the kind I used before the present Miller; mosquito-netting on all sides, instead of the Whitney box, and a cone at the top. The cone may be of wire cloth, or netting held up by two bent wires. That's away ahead of the Whitney or Miller for letting in light on all sides; but I prefer the Miller on account of convenience in using. Would not one large cone be better than the several small cones in the Whitney? [We do not know whether a lot of cones is better than one or not. An actual test will determine the point.—ED.]

ALL THAT, however, is aside from the main point. My request was that you tell us on what ground you base the objection that "very young bees are unable to get back to the hive." You do not reply to that, merely repeating, "It would be my opinion that some young bees will be lost" Please tell us *why* that would be your opinion. [If your pile of supers with your bee-escape is placed at some point remote from the hive or hives, then we do not see how it is possible for the young bees to go back to the hive whence they came. If the pile is placed near the entrance of some colony, then it is conceivable that they might crawl into such colony.—ED.]

THANKS to Louis Scholl for helping to keep the word "section" from being overworked, p. 88. I can hardly see the objection to "brood-chamber" that he does. Still less do I see the objection to the word "story." To be sure, story means a "full-depth hive-body." Well, what of it? Is there any fixed depth for a full-depth hive-body? A Jumbo hive-body is full-depth, so is any hive-body in use, so long as only one story is used, isn't it? Now, suppose two Jumbo bodies are used—one on top of the other—is not each body a story? Suppose two bodies ten inches deep are used; is not each a story? Go on down shallower and shallower, and where will you draw the line and say any thing shallower than this is not a story? and *why* is it not a story? Let me start from another quarter. If a man uses a single Heddon hive-body you would call that a story. Now, why isn't it just as much a story when he puts another story on it? [When we write about "divisible hives" or a "shallow hive" or a "sectional brood-chamber," is it not commonly understood that such hive or brood-chamber is about half the depth of an ordinary Langstroth hive? Langstroth depth is standard in this country. When we speak about a shallow brood-chamber it is understood that we mean about half the depth of the standard. When we say "Jumbo" we mean something deeper than the standard. When we talk of a short man we mean one considerably less than six feet tall. When we speak of a tall man we mean one who is nearly six feet or something above it.

We see no objection to the phrase "divisible" hive or "sectional" hive. The latter,

certainly, can not mean a hive full of comb-honey sections, unless one is woefully ignorant of apicultural terms.—ED.]

### LIVE-BEE HANDLING AT THEATERS.

EVIDENTLY some one else is doing stunts in handling live bees before an audience. The following advertisement appears in a Philadelphia daily, and reads as follows:

NINTH AND ARCH DIME MUSEUM.

Always ahead! First Philadelphia appearance of Barrett the bee-king and his countless thousands of bees. Unique stunts by curious winged artists. The most novel exhibition ever presented. Instructing, interesting, entertaining. What do you know about bees?

This dime museum will exhibit all over the United States, we are told. Perhaps some of our bee-keeping friends will be glad to see this.

### DETROIT SECURES THE NATIONAL CONVENTION.

THE following, received from Secretary Hutchinson, will explain:

By a unanimous vote the executive committee of the National Bee-keepers' Association has decided to hold the next annual convention in Detroit, Michigan. The exact date has not been decided on, but it will be after the hot dusty busy season is past, but before the cold of winter has come — in those glorious days that come only in the autumn. The National has met in Detroit only once, nearly a quarter of a century ago; but that meeting was well attended—practical, enthusiastic, and harmonious.

The majority of bee-keeping specialists—those who attend conventions — live in the northeastern part of the United States and Canada, and Detroit is very nearly the geographical center of that district. It is easily reached from the middle South, from the East, from the middle West, and from Ontario; hence a great crowd of practical men can be gathered at that point. W. Z. HUTCHINSON, Sec. N. B. K. A.

### LABELING THE WEIGHT.

BEE-KEEPERS in Nebraska will have to take notice in future of the State pure-food law which compels venders to state on the outside of a package the weight of the goods inside. According to a ruling of Deputy-Attorney-General Rose, this feature of the law is sound and constitutional, and must be enforced.

It looks as though comb honey would have to bear a label certifying to the weight. For the benefit of readers who have to do with this law we append the opinion of Mr. Rose.

In my opinion your interpretation that the contents, weight, or measure must be correctly stated on the outside of food packages sold in Nebraska is in harmony with both the spirit and the letter of the pure-food law. It is no answer to this construction to cite the national pure-food act. The Nebraska statute requires the contents, weight, or measure to be branded on the outside of packages of food, if sold for use in this State, while the act of Congress contains no such requirement. In this respect the federal statute did not meet the approval of our legislature and can not be invoked to determine its meaning.

Every label or stamp will probably have to have a blank space in which the exact weight can be shown, in pencil or pen. W. K. M.

### SUCCESS INSTEAD OF FAILURE.

AT the convention of the Michigan Bee-keepers' Association Mr. W. J. Manley, Sandusky, Mich., gave a most entertaining talk on "winter losses," in which he made the remarkable statement that he saved only one swarm out of 125 last spring, and made 400 per cent on his investment. He remarked that a winter loss with him is almost as good as a honey-flow. He explained the same by saying that his is an excellent locality for honey, but winter losses are heavy on account of the aster honey that the bees deposit late in the season, and on which they would not winter well. In the spring he melts up his old combs, sells the wax, buys bees by the carload, and turns apparent failure into success. He also explained his method of rendering wax on a large scale.

In a locality where the fall honey does not give good results as a winter food, we would advise the substitution of sugar syrup, properly made. It would at least save such great losses during the cold weather.

### A WORD TO THOSE WHO EXPECT TO QUIT KEEPING BEES BECAUSE OF POOR SEASONS.

LAST week we had a visit from Mr. F. A. Salisbury, of Syracuse, N. Y. While here he told how one bee-keeper came to his place and said he guessed he would quit the business, as the seasons were getting to be too poor. Said Mr. Salisbury:

"Mr. Jones, you say you are going out of the bee business. Will you tell me if there is any other rural pursuit that, for the *money and time invested*, will begin to give the returns that one can get from bees when intelligently handled? Now just stop and think. A colony of bees will earn more clean money than the same money invested in general farming."

Jones thought a minute, then a smile began to play over his face, and he said:

"I guess you are right, old man—I guess you are right. But I thought that, because I had not done as well as *I used to do*, it did not pay me to keep bees."

"But really," said Mr. Salisbury, "have they not earned for you more than any thing else on the farm?"

"I guess that is so," said Mr. Jones.

In counting up the profits and losses in keeping bees, $100 worth of syrup given to 100 colonies looms up *awful big;* but an average of only 10 lbs. of honey will cover this up. An average of 25 lbs. will leave a comfortable margin of $100 of clean money. An average of 50 lbs. ought to give an earning capacity of $4.00 per colony after expenses have been paid. Now, $100 in the apiary does not begin to take the amount of time that the same investment does in general farming operations.

Suppose one has had two poor seasons with no surplus, as was the case with very many last season; has it not happened over and over again that one good year will more than make up for the two poor ones? Do not give up the bees yet; or at least before you do, figure up what you have got from them, and then consider whether it pays to "let 'em go galager."

Just recently we learned of a college student who, with a few bees, is paying his way through college. During the summer he works the bees for all there is in them; then during the fall and winter when they require very little attention, he, with the money earned, is getting a college education. This is not an isolated case, by any means.

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### THE APPALACHIAN FOREST RESERVE.

AN effort will be made at the present session of Congress to secure legislation which will give the Department of Agriculture the necessary powers to acquire a vast tract of country around the tops of the mountains in the Appalachian chain. The object of the government is very largely to save the forests which now grow on the slopes, but which are in danger of being totally destroyed by the lumber butchers.

The government would also conserve and control the water, either for supplying cities or for power, and at the same time save the mineral resources for the benefit of the whole people.

The Appalachian is a beautiful mountain country, a sort of playground similar to the Adirondack region of New York. In a few years the whole reserve would become a perfect summer resort if properly cared for, as it would be.

It is a hard-wood region, many of the trees (such as sourwood) being prominent bee-keepers' trees. Much of the underbrush is composed of sheep-laurels and rhododendrons, which are excellent nectar-yielders; in fact, the whole territory is a natural bee country, so that the bee-men have a particular reason for wishing the government to acquire the land. If conducted as a forest reserve, bee-keepers would be allowed to place their apiaries there without charge, and yet overstocking would not be allowed. As a matter of fact, it would constitute a bee-keepers' preserve. Instead of deteriorating in the hands of Uncle Sam, its value for bees would in all likelihood increase.

The territory involved would make a fair-sized State as regards size and resources; but it will really do the whole United States more good to set it aside as a forest, because the factories in the valleys must have lumber at reasonable prices or their industries will cease to exist. With a forest reserve, almost their entire supply of lumber is assured for ages to come. Much of the water power can be utilized for electricity, and other uses of the reserve will appear from time to time. The idea now is to prevent land-grabbing and the rapid and total destruction of valuable beautiful forests with which nature has adorned and enriched the country. You are requested to write to your Senators and Representatives to support the measure when it comes up. W. K. M.

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### THE PARCELS-POST STRUGGLE.

HERE is what President Roosevelt had to say with regard to the proposal to establish a parcels-post service in the United States:

> I commend to the Congress the consideration of the Postmaster-General's recommendation for an extension of the parcel post, especially on the rural routes. There are now 38,215 rural routes serving nearly 15,000,000 people who do not have the advantages of the inhabitants of cities in obtaining their supplies. These recommendations have been drawn up to benefit the farmer and the country store-keeper. Otherwise I should not favor them, for I believe it is a good policy for our government to do every thing possible to aid the small town and the country district. It is desirable that the country merchant be not crushed out.

In spite of the kindly sentiments expressed in the foregoing paragraph, a tremendous agitation has been developed against this modest effort to make life more pleasant for the farming population. Offices are being maintained in the principal cities of the country to combat parcels post. It will be remembered, however, that an equally fierce agitation was maintained against free rural delivery; but in the end the farmers won. They can win parcels post too if they will only make up their minds to have it.

All sorts of wild and unreasonable statements are being printed, and the mails flooded with them, inflaming against the Postmaster-General's idea. One of the stock arguments is that parcels post does not pay in Europe, when as a matter of fact it pays handsomely, and the people like it so much they could not possibly be induced to change it. In the British Islands the postoffice pays a handsome sum every year in net profits, which goes into the imperial treasury to help pay the expenses of the army and navy.

As to the argument that parcels post will injure the small merchant, there is assuredly nothing in it, because in Europe this individual makes great use of parcels post. He not only sends goods to local customers, but he *receives* considerable quantities by the same means. Valuable goods such as silks, jewelry, drugs, etc., are often sent by the parcels post from the wholesaler to the retailer.

Back of all this agitation are the express companies who know the parcels post is a great success in Europe, and they have succeeded in frightening the country merchant till he is in a condition to join hands with his old enemies the express companies.

The farmers can have parcels post if they will all write their congressmen to the effect that they want parcels post, and want it soon. For the women folks the arrangement proposed by the President would be a wonderful convenience; for by using the telephone they can order goods from town and have them delivered at the door on the same day.

Get your husband or brother to write a letter to your Representative at Washington, insisting on a parcels post at an early date. Don't delay. W. K. M.

TOO MUCH DRONE COMB.

"Say, Doolittle, can there be too much drone comb in a hive for the bees to prosper?"

"Too much drone comb in the brood-chamber is a very serious damage to the honey crop, as drones are only useless consumers, so to speak, being of no value except to fertilize the queens, or, perhaps, to keep up a little warmth in the hive at times just after swarming when the workers are few in numbers because the great bulk of them went with the swarm."

"But I am told that lots of drones should be reared so that the queens need not go far from home to mate."

"Such talk as that belongs to the past; for in these days of progress no person can afford to allow a promiscuous production of drones. One or two square inches of drone comb is all that should be allowed in any hive except one or two containing the best drone-breeders, and these should have enough drone comb to rear all the drones needed for the fertilization of all the young queens, which also should be reared from the very best mother. The time has passed with the thoroughgoing apiarist for allowing his queens and drones to be reared from haphazard stock."

"But colonies will have some drone comb any way, will they not?"

"Yes, most colonies will have a little drone brood any way, even if they have to cut down worker comb to get a place to build the drone size of cells; but if we allow each colony from three to four square inches of drone comb it seems to satisfy them just as well as a whole frameful, and in this way we can have very nearly our own way in this matter."

"But if I have a hundred colonies with from three to four square inches of drone comb in them, will not these colonies raise from such comb, in the aggregate, more drones than will my two choice colonies with two or three frames of drone comb in their hives?"

"Yes, if you allow the drones to mature and fly from your hundred colonies."

"Well, how am I to keep them from doing this?"

"Keep the drone comb confined to just *one* frame in any hive, except those containing your breeders; and if you put this one frame next to the outside of the hive the queen will be slower in laying eggs in the cells, while the bees will be just as well satisfied. Then if you will paint red the top-bars to the frames containing this drone comb you can see them as soon as you open the hives, and thus you will know right where this comb having drone-cells is without having to hunt the hive over for it. Now, if you will lift this frame every 21 days and shave the heads off all the capped drone larvæ you will have little trouble in keeping down all the drones in the apiary except those from the breeding queens."

"But that would make a lot of work."

"Not as much as you think, inasmuch as it will be near the swarming season before any drone brood will be capped, if the frame is kept next to the outside of the hive; and, besides, if left there the bees will be likely to fill this comb with honey as soon as a good yield from the flowers comes on. Then, as soon as swarming is over, the young queens will very rarely lay in the drone-cells where a comb is kept next to the side of the hive, and so three times is sufficient any season for decapitating drones, while, as a rule, once or twice is enough."

"But nearly all of my hives have several patches of drone comb in them, and some whole frames full. How am I to get rid of this?"

"The nicest way is not to have drone comb built, by giving frames of foundation in the start to such colonies as will not build all worker comb."

"That sounds well; but my frames are already built full of comb."

"In such a case, if you wish the slickest job done you ever saw you will cut out the drone-cells and give the frames so fixed, one at a time, to nuclei, or weak colonies having a young prolific laying queen. Such colonies will 'patch' up such combs so you can hardly tell where you cut out the drone-cells. By having one such weak colony or nucleus to every ten combs you wish patched, you will get them all changed to nice *all-worker* comb in one summer season."

"But is there no way that I can do this patching myself during the winter months when I am not so driven with work as in the summer time?"

"Yes, if you have the combs away from the bees and you do not care for quite so nice a job as the bees will do."

"Well, I am not so particular as some, and I have a lot of combs with more or less drone size of cells in them stored away in my comb-closet now, which I could work at just as well as not these stormy days."

"That being the case, you can cut the drone comb out and fit worker-comb in its place. If there is a large patch of drone comb in any frame, cut it out with a sharp narrow-bladed knife, after which you can lay this frame over another one having some drone comb in it also, so as not to spoil a good comb. Lay it so that the empty space comes over the worker-comb, when the lower comb is marked a 'hair' larger than the space to be filled, after which the marked piece is cut out and pressed into the place where the drone comb came from. If you happen to get any piece a little too small, a

few drops of melted beeswax will hold it till the bees fasten it."

"But some of the places in my combs have only an inch or two of the drone size of cells. Will it not be a big job to fix all of them?"

"For small patches, from one to four inches in diameter, you can use punches of the proper size, made of old fruit-cans. These can be found about hotels and eating-houses, if canned fruit is not used in your own family, and need not cost any thing. For the smaller sizes old empty baking-powder cans are just the thing."

"But how am I to fix these so I can use them?"

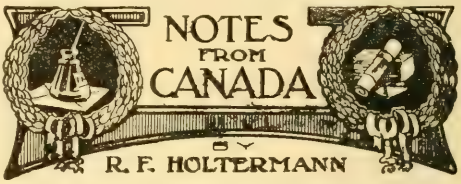
"When you have collected your different sizes, place them on a hot stove, when the solder will melt, thus letting the bottom drop. In the same way melt off the top. After the tops and bottoms are melted off, make the whole circumference of one end sharp with a file or grindstone, sharpening wholly from the outside. Now lay the comb down on a smooth board, and with the right size of punch cut out the patch of drone comb by twirling the punch or can around as you press down upon it. Now push out this piece of drone comb, and with the same punch, and in the same way, cut out from some discarded comb a piece of worker comb, which will, of course, exactly fit the place from which you took the drone comb. In this way it is no great task to rid all of the frames of drone comb, especially if you have the combs away from the bees so you can do it on stormy winter days."

"But a part of my frames have honey in them, so I can not tell just where the drone comb is situated. What of these?"

"If you do not wish to warm them up and extract the honey from them, the better way is to leave them till the bees can take the honey out in the spring, when they can be fixed in the same way."

"I have a few combs that were drawn out from foundation in wired frames. Some of these, on account of mice, or because moths or moldy pollen caused the bees to cut out portions of them, have either holes or drone comb in them. Is there any way I can fix these during the winter?"

"Such combs I prefer to leave for the bees to fix, as I told you about at first; but even these can be fixed in the winter. After the drone comb is out, cut away the cells all around the hole about one or two cells back, cutting only just down to the septum, on one side. Then cut a piece of foundation the size of the place and lay it down so that it will cover the hole and the cutaway cells as well. Now put a few drops of hot beeswax about the edges—just enough to hold the foundation in place. The bees will draw out the foundation into comb next summer, fixing it as good as new, providing you give such combs to the bees just at a time when they are securing honey enough to build comb. If you give frames of comb, patched in this way, to a colony when no honey is coming in from the fields, or not enough so that wax is secreted, the bees are likely to tear away the edges of the comb or foundation, on the principle that 'Satan finds some mischief still for idle hands to do.'"




### THE VALUE OF BEES AS FERTILIZERS OF FRUIT-BLOSSOMS.

The Ontario Agricultural and Experimental Union, with over 7000 experimenters, consisting of many of the best agriculturists in the province, at its annual meeting at the Ontario Agricultural College, Guelph, Dec. 9 and 10, passed a resolution requesting the Minister of Agriculture to arrange to have a series of experiments carried out to determine the value of bees in the fertilization of blossoms such as fruit, clover, and buckwheat. Prof. H. L. Hutt, B. S. A., Horticulturist at the college, is strongly impressed with the value of bees for his line of agriculture. He gave the following extract from his recent report to the Fruit Experiment Station Board:

In closing this report I wish to call attention to some of the conditions which have materially affected the fruit crop of the province during the past season.

In the first place, the weather has been exceptional. The winter was not severe, and fruit-trees as a rule wintered well. Bloom was abundant; but during the time the trees were in bloom the weather was cold and windy, and unfavorable for the working of bees, which are the most active agents in the pollenation of the blossoms. In fact, there were only two bright warm days, and these several days apart, during the whole season of bloom when the bees worked at all freely. Mr. Murray Pettit informed me that he noticed two distinct settings of the fruit on his cherry-trees, which he believed corresponded to the two good days the bees had for pollenation.

In the second place, there was an unusual scarcity of honey-bees this year to do all the pollenation necessary to the setting of a full crop of fruit. I was informed by a leading bee-keeper that not more than 20 per cent of the honey-bees of the province were wintered successfully last winter. This being the case, it is easy to understand the effect that a scarcity of bees with unfavorable weather for their work had in giving a light crop of fruit. I have noted repeatedly in various parts of the province that some of the most productive orchards have been those in which honey-bees are kept, and there is no question in my mind but that it would pay fruit-growers well to keep a few hives of bees merely for the purpose of insuring fertilization of fruit-blossoms. In sections where fruit-farms are close together, as they are in the Niagara district, the growers within a radius of one or two miles might coöperate and employ a competent bee-keeper to look after a good-sized apiary.

### PLURALITY OF QUEENS.

At the Harrisburg convention and in other places I have expressed doubts that the presence of two or more queens in a hive will prevent swarming. It was pointed out that in running for extracted honey, and removing the honey from the supers as soon

as the bees begin capping, the conditions for swarming would not be favorable with one queen. So far as I know, all who have reported no swarms with a plurality of queens have had favorable conditions for nonswarming.

In the December number of the *Bee-keepers' Review* Mr. H. S. Philbrook, Oxnard, Cal., states, "In my experience two or more queens in one hive will not always prevent swarming. I had one last year, with two queens, that produced nearly 800 pounds of extracted honey; and then, just at the close of the season, it swarmed."

I am still of the opinion that it is more practical to improve in every feasible manner the conditions favorable for one queen to do her best, and stop at that.

### LIQUEFYING HONEY.

An ideal way to liquefy honey is to bring the entire mass all at one time to the proper temperature. While this is scarcely practical, yet present methods may be much improved. With ordinary methods there is danger of scorching the honey on the outside of the mass while the center is still granulated.

You know, Mr. Editor, that the best way to melt beeswax is to allow it to run away from the solid part as fast as it melts. This principle, I am sure, is the best for liquefying honey. There are many, however, who can not do this; but there is a method that almost any one can follow whereby a great difference between the temperature of the center of the granulated block and that on the outside can be avoided. This method will also reduce the amount of work necessary, and the danger of scorching the honey nearest the source of heat is lessened. Such a method consists in keeping the honey in a warm room (the warmer the better up to 100°), until the very center of it has the same temperature as the room. A comb of granulated honey put into a hive with a strong colony in some position where the bees will have no desire to replace it with brood offers us a fine object-lesson in liquefying honey. Exposure to a temperature not higher than that of the hive brings it back to the liquid state, and does not impair the quality.

[We regard this suggestion of our correspondent as a valuable one. With the ordinary method of liquefying, there is always danger of overheating the honey and thus spoiling the flavor. A large can or vat to hold the hot water is necessary, and it requires considerable hard work to liquefy in that way.

With the hot-air method, on the other hand, there is little danger of overheating. If a stove can be set up in a very small room there would be no need of further apparatus. Or it should not be difficult to confine the heat about a stove, even in a large room, to keep the temperature of the air surrounding the honey somewhere near 100°.

It may be that some kinds of honey could not be liquefied at a temperature of 100° without wasting too much time and fuel. Alfalfa honey, which candies with a very coarse "grain," and therefore liquefies easily, requires about 24 hours' exposure to air heated to a temperature of 100°. Candied white-clover and basswood honey, which are much more solid than alfalfa, would probably require a much longer time, and possibly a higher temperature.

We should be glad to receive reports from any who may have tried the hot-air plan of liquefying.—ED.]

### HOW BEES DISTINGUISH COLOR.

I have been accused of being like the fellow from Missouri, "You got to show me." I do not like to jump at conclusions, but enjoy giving a good fair test before believing it. I have sometimes been amused by a long argument as to just how certain things ought to turn out; but when you try them they just won't work. The trouble with too many theories is that the theorist does not take into consideration all the circumstances. I had the pleasure of trying an experiment the other day that gave, as I think, conclusive results. It has been claimed that bees dislike black, and will sting any thing black much quicker than any thing of a different color. I have believed this also, as I thought the bees were crosser with me when I had on black clothes. The following experiment removed all doubts in my mind.

I was out among the bees when out came a black dog belonging to one of the neighbors. In a minute, out came a brown dog from another neighbor. I was dressed in gray. Now I thought I would see which dog the bees would sting more. This seemed a little cruel, but I thought that, as long as I took my chances with the other dogs, and we all had an even break, there would be no kick coming. I called the dogs in front of a hive and began to bark at them and play with them. We all jumped and tore around in front of the entrance at a great rate. I kept a little nearer to the hive so as to see that the dogs got a fair deal. In a moment some of the bees began to lodge in the black fur of the dog, and stick there like cockle burrs. They went clear around me and the brown dog. At last one got Rex (the black dog) where the hair was short—i. e., on the nose. He withdrew to the brush to sneeze a little. I had determined to give three trials, then count up all the stings, average it up, and see just what per cent madder a bee got at a black object than it did at brown or gray.

Rex subjected himself to this second test with more or less reluctance; but by dint of hard coaxing and barking I induced him to forget the past and have another romp. We kept getting nearer and nearer to a hive of doubtful repute when I called a halt long enough to give the hive a little jar. Then I jumped in front with the other dogs, and began to jump around with them. At least a dozen bees took a bee-line for Rex and got next to his feelings at the very first dash. Rex never said a word, but turned around and skeedaddled for home. He never thought to yelp. His mental capacity was occupied in the discussion of two important points—first, how he might insert space between himself and that hive; and, second, how this might be accomplished without occupying too much time. I did not know exactly what to call that test, the color line or the race problem. Rex arrived at the door a little ahead of time, and never stopped to knock, but smashed against it. It was shut, but it opened with a bang as Rex came against it. In he went, and crawled under the kitchen table. This was the second trial. The black dog had all the stings, and the brown dog and I had none. The third trial—well, that never came off Rex positively refused to subject himself to further experiment, even in the interest of science. I do not consider him sentimental.

I thought some of continuing the experiment between the brown dog and myself, but—well, it was getting late, and we might both look black to them, and then there might have been some cranky old maids among them that were color-blind and lacked proper discrimination; and if any of them should show me any discourtesy I would have to say "stung;" so, all things taken into consideration, I concluded to be satisfied with the results as they stood.

ENEMIES OF BEES—THE ROBBER-FLIES.

These are two-winged flies, and are, I believe, next to the bee-moth and ants, the most to be dreaded of all the foes of our bees, among insects. There are two types of these predaceous flies—one that resembles the bumble-bees very much, both in size, form, and color, and the other much longer, and with long pointed abdomens. These latter are generally black, though one of them that is quite common here about Claremont is ash color. As these dart about on the ground in pursuit of their victims they are aided by their sober colors, as they can come near the desired prey without being discovered. These robber-flies have a very strong beak, and, like all mature flies, suck as do also the bugs. They have also powerful legs, and I think they must also have such horny bodies that the bee is not able to inflict great harm with its sting, else would not the flies learn quickly, as do we, to be very wary how they grasp these well-armed insects? Is it possible that they have learned to hold the bee in such fashion that the latter can not use its poisoned dart? However it may be, the robber-flies do capture and suck bloodless many of our worker honey-bees. In some sections of the South they are so destructive that I have been told that bee-keepers at times have engaged boys to capture and kill them. I have never known them to be sufficiently common in Michigan, nor even here in California, where they abound much more than in the northeastern States, so that they give serious concern to the apiarist. This is the more true as they kill many of our insect foes. Unfortunately they do not always rightly discriminate, as I once saw one capture and begin to suck the blood of a fierce tiger-beetle, one of our good insect friends. This shows how formidable these robber-flies are. The tiger-beetle, like the honey-bee, we should suppose would be more than a match for any two-winged fly.

I made one observation here at Claremont that will interest our readers. I saw the California bee-martin, or king bird, close by the bee-hives, and thought that here was a chance to learn whether the bees sting this bird, as they do the toad, in the throat, as they were swallowed. I saw the birds as they swooped down toward the hives, and soon, after he had darted forth several times, shot him, and, upon examining his stomach, found not any bees, but three of these robber-flies, so that, in this case, the king bird was befriending the bee-keeper rather than working against his interests. May be the king bird is usually more a friend than an enemy.

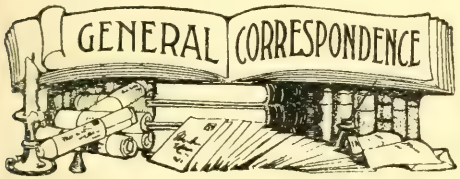
DRAGON-FLIES.

The lace wings, the old *Neuroptera* of Linnæus' classification, are so preëminently predaceous, and such recognized destroyers of our insect foes, that we are not surprised to find that one of them, the dragon-fly, or spindle, as it is sometimes called, is often a foe of the honey-bee. I have never seen the Devil's darning-needle, as it is often styled, do this evil work in Michigan nor here in California, where, however, owing to the scarcity of standing pools (their breeding-places) they are not a very common insect. In the Southern States, however, they are reported to be quite a serious pest at times. I have been told that boys have been hired to kill these and the equally rapacious robber-flies by the use of a whip with a long lash. It is said that they become quite skillful in thus circumventing the evil of the great insects. I have often thought I should like to see this performance. I should almost think the report "fishy" had I not had it from good authority. As in the other cases, we must remember that these swift

graceful insects are always in quest of our insect enemies, and so do much good as well as some evil.

THE PRAYING MANTIS.

These curious insects are limited in our country to the South and West. They belong to the order that includes the crickets, locusts, and grasshoppers, and so we might expect them to be voracious feeders on plants. They are the only exception, and feed exclusively on insects. Like the stinging bugs they have the front legs modified to serve as grasping organs. These, however, are long; and as the insect rests on these great jaw legs it looks as if it were on its knees. As it raises these same legs it has much the attitude of the minister as he pronounces the invocation—hence the name, though it might well be *preying* mantis, as the insect is a fierce destroyer of other insects. I have never seen these insects killing bees here, where they are quite common, though not as large as the ones I have from Florida. It is also true of these that they do much more good than harm.




## THE MILLER IMPROVED INTRODUCING-CAGE.

### Tinned v. Black Wire Cloth for Introducing.

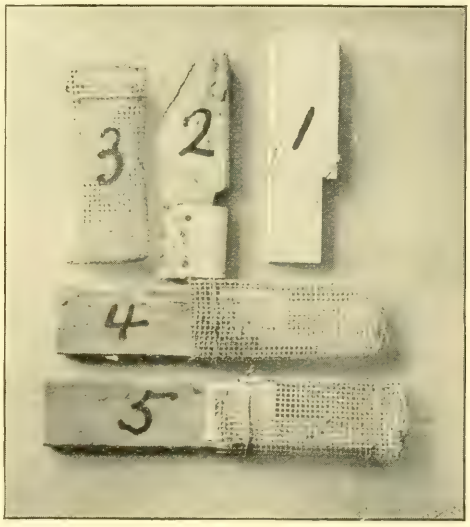
BY DR. C. C. MILLER.

The Miller introducing-cage, gotten up some years ago, has been very kindly received, and has found its way for some time into supply catalogs. A few years ago I discarded it for what I thought an improvement, and this improvement has in its turn been thrown aside for the one shown in the illustration. A trial of some 50 of these for a year or more has confirmed the belief that they are much bettter than the Miller cage in more than one way, and more up-to-date in meeting the requirements of present-day practice.

With the aid of the illustration I'll tell you how one of these cages is made. The block, 1, is $3\frac{3}{4}\times1\frac{1}{8}\times\frac{5}{16}$, the part that is cut out being $1\frac{3}{8}\times\frac{1}{4}$. On this, as shown by 2, is fastened a piece of tin $1\frac{1}{8}\times2$ inches. The tin is bent so as to leave a space to be filled with candy; and to make sure that this space is not too small, a round lead-pencil is held in it while two small wire nails are driven through the wood and tin, and clinched. Holes are punched in the tin on the side where the nails start in, but they are not needed on the other side. The block is laid on a smooth pine surface, and mere driving sends the nails through the tin on the under side. The diameter of the pencil is a little less than $\frac{7}{32}$ of an inch, which, as you see, makes a very slender pencil. A larger space could be used, but it must be remembered that, the more slender the candy-passage, the longer it takes the bees to gnaw through.

When you have got thus far you will see that the queen will have to turn a pretty sharp corner to get out. She would probably make it all right; but to make it easier for her, cut away a little more, beginning back $\frac{1}{16}$ or $\frac{1}{8}$ inch, and making a slanting cut. Of course, the block might be cut so in the first place.

The cage proper (3) is made of extra-heavy bright wire cloth, which costs five times as much as common painted wire cloth, but it will last ever so much longer, and is not so easily crushed out of shape, and the cost for




THE LATEST FORM OF THE MILLER INTRODUCING-CAGE.

each cage is so little that it is economy to use the better kind. Cut a piece $3\frac{3}{4}\times4$; wrap it around a stick $1\frac{1}{8}\times\frac{5}{16}$, and perhaps 4 inches long (unless you wrap it a little loose, better have the stick $\frac{3}{8}$ thick), letting the wire cloth project over the end of the stick about $\frac{3}{8}$ inch. About $\frac{1}{2}$ inch from the other end tie around a wire, then fold in the projecting ends and batter them down. That completes the cage.

At the open end there should be a selvage edge, or else the edge should be folded outward about $\frac{1}{2}$ inch. In the latter case, of course the piece should be cut enough larger to allow for the folding.

It is well known that we sometimes want a queen to be caged in a hive for a time without allowing the bees opportunity to liberate her, and at other times we want them to have that opportunity. This is especially the case in the up-to-date plan of having two queens

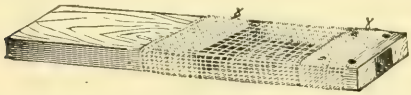
in a fertilizing hive, one free, and the other a virgin in a cage awaiting the removal of the first, and sometimes we do not want this latter to be freed for several days.

If we want a virgin, or, for that matter, any queen, to remain in a hive without being liberated, all that is needed is to shove in the block as shown at 4, and the bees can not get at the candy. Then when we want the bees to eat out the candy, all that is necessary is to draw out the block as shown at 5, so as to expose the candy to the bees.

The cage may be held in place suspended by a wire supported by a nail resting across the top-bars; or the cage may be merely pinned to the comb by a pin 1⅞ inches long, called a bank-pin. You can get half a pound of these pins for 21 to 25 cents, and the women-folks will be delighted to get what you don't need for the bees. In pinning a cage on a comb you will, of course, run the pin through the meshes of the wire cloth. Don't run the pin in level, but a little slanting, letting it point downward as you push it in. It will thus hold more securely.

Marengo, Ill.

[For the purpose of comparison we present here an illustration of the original queen-cage bearing your name, which cage has been listed in nearly all the bee-supply catalogs for years. We have carefully compared this with your new model, and in our minds the old one is just as good, and in some respects superior. It is true, the new model has a very simple plan by which the bees may be shut off from the candy, and this in itself is a good feature, because it is often (and generally) desirable to keep the bees away from




the candy a day or two before they are permitted to eat it out and release the queen. But we accomplish this by nailing a little strip of pasteboard over the candy of the old-style Miller which the bees gnaw away. Sometimes we use a little strip of tin secured by a nail through one end. This may be revolved around to close access to the candy; at other times it can be turned the other way, exposing it. This little strip of pasteboard could not be applied so handily to your new form of cage, and pasteboard has the advantage that it is *automatic*, because the bees will gnaw it away in 24 hours, and afterward eat out the candy.

But the new cage we consider greatly inferior to your old one in point of strength. There is nothing to protect the wire-cloth end from getting crushed; and, moreover, it is not easy to close up the end without a stopper of some kind. Indeed, your photograph shows the crumpled-up ends of the wires, which, to say the least, do not look neat.

We notice that you specify the wood block to be $\frac{5}{16}$ inch thick; but ¼ inch we would consider very ample. The thinner it can be, and allow the queen room enough to turn around, the better it is for insertion between the combs; for in the height of the honey-flow it is desirable not to have them spread apart any wider than is absolutely necessary. Then, moreover, we sometimes introduce virgins in these cages by slipping the cage through the entrance. A cage ⅜ inch thick with the wire cloth, as yours would necessarily be, might not go into an ordinary ⅜-inch-deep entrance, while one having the wood ¼ inch thick plus the wire cloth will pass through.

To sum up, we do not see that you gain any thing except in the matter of shutting the bees from the candy, and you lose considerable in the strength of the cage as well as its general appearance, which, to a supply-dealer and manufacturer, is a matter of considerable moment.

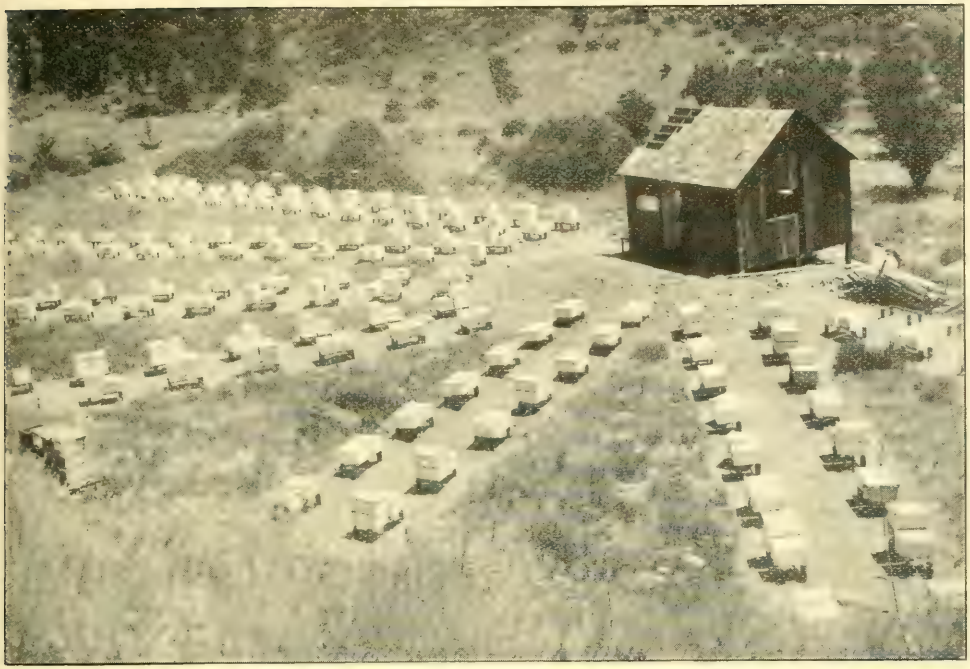
But there is one thing more which should not be overlooked. You recommend *tinned* wire cloth. While, as you say, its greater expense does not cut any figure in any thing so small as this, yet experience has shown that this material is the very worst that can be used for introducing-cages. We formerly made the Miller cages of tinned wire cloth, soldering the joint. It was a very much neater-looking cage; but we found that young queens were dying in all such cages very badly, and we soon began to get unfavorable reports from customers. We made the Titoff queen-cell and introducing cage of tinned wire cloth, and very soon our boys began to report that the queens, for some unaccountable reason, were dying at a very rapid rate. We could not account for this at first, especially as the *same* cage made of black painted wire cloth gave uniformly good results. Then we resorted to the expediency of boiling all cages made of tinned wire cloth, thinking that would remove all poisonous solder salts; but still the queens continued to die. We finally concluded that the spelter (or, rather, we should say, the acid or chemical) used to bind the tin on the iron or steel wire was the cause of the trouble; for when we dipped these cages in hot wax there was no mortality. When, again, we made the cages of black painted wire cloth, there was none. So don't, doctor, whatever you do, change over to tinned wire cloth, for you will rue it if you do. We have such an immense amount of evidence in the form of complaints to show that it killed the queens that we have been obliged to abandon it in all queen-cage work.—ED.]

## SELLING HONEY.

### Advertising, the Best Solution of the Low-price Problem; a Conversation with L. E. Mercer.

BY H. H. ROOT.

On p. 1369 of the Nov. 1st issue, mention was made of Mr. L. E. Mercer's visit at Medina. Mr. Mercer is a bee-keeper who has passed the experimental stage in the busi-



ONE OF L. E. MERCER'S OUT-APIARIES IN CALIFORNIA.

All of Mr. Mercer's yards are arranged on the same general plan, which might be compared to a mammoth wheel. The honey-house is the hub, and the rows of hives the spokes.

ness. He has, at present, 1800 colonies located in out-apiaries near his home in Ventura, California; and if such a term may be used in an apicultural way, he might be called a professional bee-keeper—that is, he is a man who makes bee-keeping his business—his *profession*—and not merely his pastime. The opinions of such a man are likely to be worth more, perhaps, than those of an amateur, even though the amateur be an experienced bee-keeper, for the opinions of the extensive producer are sure to be practical, being the outgrowth of hard study from the standpoint of dollars and cents.

When Mr. Mercer was at the "Home of the Honey-bees" he had been traveling for six weeks, and he said that, during this time, he had seen almost no honey in the stores for sale, nor could he see any evidence of any advertising of honey. He believed that, if the right kind of man were employed to travel in the interests of the honey-business, there would not be enough bee-keepers in the country to supply the demand. The prices would then become more nearly what the prices of good honey ought to be. On being asked if he did not think the pure-food law would tend to raise the price of honey, he replied he thought that it undoubtedly would, but that some hustling would be necessary also, to get the public to see that honey is really more of a necessity than a luxury.

Mr. Mercer is right. The number of families that buy honey regularly is lamentably small. In order to make any great increase in the price of honey, the producers ought to make an organized effort to make the consumers recognize honey as a necessity instead of a luxury. The *Honey-producers' League* was a move in the right direction, but some were suspicious.

Our attitude in reference to manufacturers as officers of bee-keepers' associations is clearly defined, p. 1489, Dec. 1st GLEANINGS. The control should be in the hands of the *producers*, for whose direct benefit the movement is carried on.

Now that the National Association has the funds of the Honey-producers' League, the producers have a chance to do some profitable advertising. Whatever is done, it is certain that honey must be systematically advertised if the price is to be brought up to the desired point.

One simple and effective way of city advertising which Mr. Mercer mentioned was the use of cards in street-cars. Every one is familiar with the advertising cards thus displayed, and it is not surprising to find that such a way of getting honey before the public has also been found successful.

### AN INEXPENSIVE METHOD OF SELLING LIQUID HONEY.

Mr. Mercer told of one good way of selling honey which one of his sons has made use of in California. Various grocers in a city are supplied with honey-tanks, small enough to stand on a counter, but large enough to hold twenty or thirty gallons. These are gotten

HOME AND APIARY OF J. B. BARTLEBAUGH, GLENCAMPBELL, PA.

up very attractively to harmonize with the surroundings in any first-class grocery. The lettering is in colors that present a striking yet refined appearance. On the front, in plain sight, a gauge constructed of clear white glass is placed to show the height of the honey in the can, and also to call the attention of the customer to the fine color of the goods. A faucet or gate at the bottom permits a sample to be given to any intending purchaser, and also serves as a means for drawing off any amount in bottles, cans, pails, etc. The idea is that the honey is not drawn off until it is purchased. The producer, or dealer who sells the honey, is notified whenever the can needs refilling.

One great trouble with all such plans has been that the honey would surely candy in time, making considerable trouble for the dealer. Many grocers, on this account, prefer to have liquid honey put up in popular-sized packages. Furthermore, this conforms more nearly with modern methods of buying. It is becoming less and less common, for the higher class of grocers especially, to keep any thing in bulk, the tendency being to have standard packages that can be sold over the counter

But, although the Mercer plan has some objections, it proves an easy and profitable way of selling honey in many cases. Oyster-pails may be used very successfully for holding liquid honey, and they would be especially valuable for this plan.

Descriptive literature might be on the counter beside the honey-tank, for the purpose of explaining the methods of producing the liquid honey, for telling of the value of honey as a food, etc.

A NEW ARRANGEMENT OF HIVES IN AN APIARY.

Mr. Mercer is the inventor of many conveniences in the apiary, some of which have already been illustrated in these columns. His system of arranging hives in out-apiaries is unique. This is shown in the cut on preceding page. It will be seen that the hives are in rows, arranged like the spokes of a wheel, with the honey-house in the center. This means that there are no corners to turn in wheeling honey into the extracting-house. Where the ground is smooth this plan will be of especial value, since a straight line is always the shortest distance between two points, and much time can be saved if the operator does not have to waste steps in wheeling extracting-supers to the honey-house by a roundabout way or around sharp corners.

## A MINISTER WHO ATTRIBUTES HIS SUCCESS TO GLEANINGS.

BY REV. J. B. BARTLEBAUGH.

You may see by this little picture that I am a lover of those little friends we call the bees. I have 26 colonies of fine bees from which I have just finished taking a fair crop of surplus honey, leaving them in good condition for the winter. I want to thank GLEANINGS for my success; and may it continue its usefulness, both on account of its value to the bee-keepers and because of the Christian spirit that is in it.

Glencampbell, Pa.

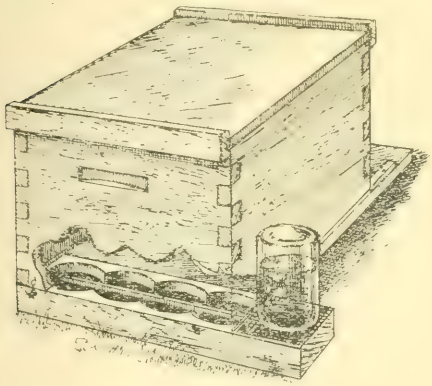
## WINTER CASES OF TAR-PAPER.

### The Boardman and Alexander Feeder Combined.

BY HARLEY CONDRA.

I decided to make some winter cases for my hives after seeing them recommended in GLEANINGS. I put them on early in the fall, and I can say that the results have been far

better than I expected, and I feel well repaid for my trouble. They can be placed on the hives as soon as the surplus honey has been taken off, and they will not interfere with feeding in the least when a feeder is used like that shown in the illustration. I call it my Boardman-Alexander feeder.



The capacity of the Alexander feeders increased by the addition of the fruit-jar as shown.

The winter case is made of tar-paper, which is tacked to the empty super as shown in the illustration. The ends of the paper are left long enough to double-lap across the end of the hive. I place my colonies in open sheds and pack them with straw.

Seymour, Iowa.

[The plan for increasing the capacity of the Alexander feeder is good. By cutting down the partitions of the projecting end, any Alexander feeder could be adapted to take a Mason jar.

Your plan of making a winter case does not provide for extra folds of paper or other packing around the sides of the hive; but with straw between the hives in the shed, a material under the tar-paper would probably be unnecessary.—ED.]

WINTER CASES MADE BY TACKING TAR-PAPER ON THE SIDES OF EMPTY SUPERS.

## FOUNDATION FOR COMB HONEY.

### The Split-section Plan vs. Hot Wax for Securing Full Sheets; Buckling; Double Starters vs. Single Full Sheets.

BY E. F. ATWATER.

[In our last issue, p. 82, we used a part of Mr. Atwater's article because the report of his experience was timely in connection with that discussion. As promised, we present herewith the engravings mentioned, together with the rest of the article. In order to get the discussion fully in mind, the reader should turn back to p 82 and read especially the part of the article that is omitted here.—ED.]

In regard to the various methods of putting full sheets of foundation in sections, as practiced by Mr. Hand and some others, I would say that those methods are by no means faultless. The method used by Mr. Hand would seem to be very expeditious; but I call on him for the *proofs* that his method is the most rapid known for putting in full sheets of foundation. While not posing as an exceptionally rapid worker I have taken sections from the crate in which they came, folded them, put in full sheets of foundation, and replaced them in the super, at the rate of 400 in an hour. Of course, this is not an average; but 250 per hour is easily reached and maintained, while others claim to (and can) put in both top and bottom starters at the same rate per hour.

But there are other objections to the Hand method. One is that the edge of the sheet of foundation is so evident in the finished product that it tends to create and maintain a belief in the artificiality of the product. Another fault: With our methods, sections go from crate to super, and, with the one handling, are all ready to pile away to await the needs of June; while with the Hand method all must be rehandled, as they are first folded and put into the wide frames; then they are pushed half way out of the frames, and the foundation inserted. To our methods must be charged the time required to cut the foundation.

In many cases the results, when a full sheet of foundation is fastened on all four sides, are all

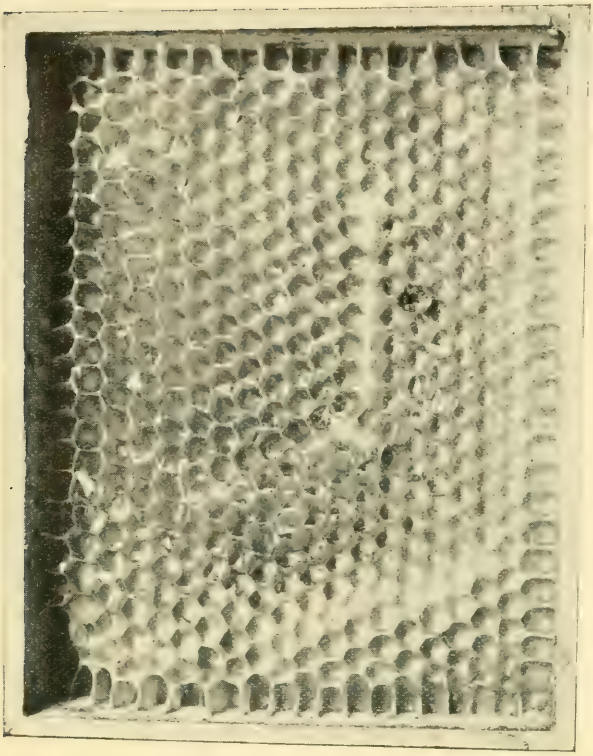


FIG. 1.—DRAWN COMB FROM A FULL SHEET OF FOUNDATION FASTENED ON ALL FOUR SIDES.

Note the bulge near the bottom, and also the one near the right side. Occasional buckling of the foundation causes this.

FIG. 2.—SECTIONAL VIEW OF FIG. 1.

that could be desired — beautiful slabs of honey without hole or blemish to mar their beauty. But here the (as yet) inevitable sagging propensities of all surplus foundation on the market, in hot weather, are a factor with which we must reckon. Perhaps the engravings will help to explain what I mean by this. I am sorry to say that, at this date, I have no examples of the results on the finished comb; but from my supply of bait combs many sections like those illustrated might be shown. In Fig. 1 the bulge at the bottom is very plain, as well as the bulge about eight cells removed from the right-hand edge of the section.

Fig. 2 is a sectional view of the comb shown in Fig. 1. This shows even more plainly the result of the sagging of the sheet of foundation.

Perhaps some one may say the foundation was of poor quality; but it was as good as can be had. In hot weather any foundation, light or heavy, will sag, and even horizontal wires but two inches apart will not prevent that sagging. Unless Mr. Hand's method will remove the difficulty, the *greatest fault* with any method requiring that foundation be attached on three or four sides is the expense and the amount of time required to do the work.

It will not pay the extensive producer to devote a great deal of time and labor to the fastening of foundation to three or four sides of the sections, as the price of the finished honey is not raised in any degree over that of comb honey produced in sections containing full sheets of foundation fastened in the ordinary way. Nor is it a fact that sections and supers prepared in the ordinary way require very careful handling at any time. When we can have a really non-sagging foundation, and when the honey will sell for enough more money to pay for the extra work, I may again use some method of using a full sheet of foundation attached on three or four sides.

Meridian, Ida., Dec. 26.

[GLEANINGS would be glad to receive reports from any who may have tried full sheets of foundation fastened on all four sides of the section. What percentage of the finished sections are irregular on account of the buckling of the foundation? If the sheets are warm when put into the sections, is there as great a tendency toward buckling when the supers are put on the hives?

If comb honey built from foundation fastened on all four sides could be sold at even one cent more a pound, this extra price would more than justify the time spent in

fastening such full sheets in the sections. Of course, if the appearance of the honey is not enough better to bring an extra price, then nothing is gained. But there is not enough strictly fancy comb honey on the market, and bee-keepers can well afford to experiment with any methods that will tend to produce better grades. Fancy comb honey never goes begging. It is the honey which is only "fair" in quality that makes the producer hustle to get rid of it at a profit.—ED.]

## RHEUMATISM CURED.

### Another Case of this Disease Cured by Bee-Stings.

BY HIRAM LANDIS.

[Our honey-man, Mr. J. A. Warren, recently became acquainted with a gentleman who had been cured of rheumatism by bee-stings. His statements proved to be so interesting that he was asked to write a short article for GLEANINGS, hence this letter.

It will be noted that the cure is every bit as marvelous as the fake cures so often lauded by the patent-medicine concerns, and yet we have every reason to believe that Mr. Landis' story is true.

Personally we have no faith in bee-stings as a cure for all forms of rheumatism, nor perhaps even for the same forms that afflict different individuals. There is no doubt, however, that it proves beneficial in many instances Certain it is, there is no patent on the bee-sting cure; it is free to all who wish to try it.—ED.]

HIRAM LANDIS, OF PITTSBURG, PA., WHO WAS RECENTLY CURED OF RHEUMATISM BY BEE-STINGS.

I am glad to give you any information you wish in regard to my successful cure of rheumatism, which, I am satisfied, is the only permanent cure in existence up to the present time, or at least the only one I have heard of yet. I suffered for seven months, and took all the truck imaginable; but nothing did me any good.

I paid a visit to an old friend, Mr. D. B. Travis, in Armstrong Co., Pa. I got acquainted with old Dr. Sharp in Dayton, Pa., on the B. R. & P. R. R. He said he would give me a cure, but added I would not take it—that it was a sure cure, as he had suffered for one year, and it had cured him. I told him I could take *any* thing he could. Then he told me to cover my face and roll up my sleeves and stir up a bee-hive and let them sting me in the arms all they would. I did so. I got 25 stings, and it never swelled. In a day or so I went back and got another dose of the same medicine. It never swelled; but the third time it swelled and I quit. I took no more truck to knock out my stomach, and I felt better every day; and in four weeks I went on the road and have been out in all kinds of weather for a year and six months. I have not felt the least effect of rheumatism since — not even in a change of weather. I have been on the road for 50 years, and feel like a four-year old boy.

My rheumatism commenced in my knees, and finally got up into my shoulders and arms. I could scarcely get out of bed. I could not put on my clothes myself for seven months until I got stung by the bees. Dr. Sharp told me that the poison of the stings would eradicate the poison or uric acid in the blood, and said I would get rid of my rheumatism.

Pittsburg, Pa.

## BEE-KEEPING IN QUEBEC.

### A Foul-brood Act to be Passed.

BY R. F. HOLTERMANN.

Few outside and perhaps not many inside the province of Quebec realize the magnitude of the bee-keeping industry in that part of Canada. There are probably quite as many colonies of bees kept in that province as in Ontario, and yet there is a good deal of dissimilarity between the situations.

In dairying, Ontario is the great cheese-producing province, and Quebec the butter-producer. Likewise, in bee-keeping, Ontario is largely an extracted-honey producer, and Quebec a comb-honey producer. One of the weakest points in the production of honey in Ontario, as perhaps in all extracted-honey-producing sections, has been the marketing of unripe honey; and one of the weakest points in the production of comb honey in Quebec has been the production of combs attached only to the bottom and sides of the sections. The quality of the honey has been all right, but the combs must be securely fastened to the sections in order to take advantage of the best markets that may be at a distance. The remedy for this lies in using a full sheet of thin or extra thin foundation instead of the small starter generally used.

Quebec, owing to winter snow, has more natural clover than the present honey-producing sections of Ontario; but this may not be true when the more northerly portion of our province is developed. The source of

surplus honey in Quebec is largely white clover and buckwheat.

There are still many box hives in the province, and the writer is not as strongly opposed to them as some are, for the old let-alone plan of keeping bees goes better with the box-hive system than with the modern hive. But in these days, owing to the rapid transportation of bees, honey diseases are more easily spread; and on account of the known fact that there *is* disease about, no

JULES ALLARD

A. GIRARD

F. W. JONES

C. O. JONES

JACQUES VERRET

A. L. BEAUDIN

colonies should be kept in such a way that the combs can not be examined, whether in the old box hives or in carelessly looked-after modern hives.

Referring to the illustrations above, the gentleman who is by right of position at the head of the bee-keeping industry is the Hon. Minister of Agriculture, Mr. Jules Allard. He springs of a nationality (French) which has had much to do with the development of bee-keeping. The French people have made bee-keeping a great national wealth-producing industry, and they and the Germans appear to have a natural aptitude for the business. Thrift does not allow such a source of revenue and aid to other branches of agriculture to be lost.

Under the management of the Quebec Department of Agriculture, among other efforts to develop bee-keeping there have been sent out through the province a large number of lecturers. The writer has been among the number, and he has found the people of the audiences intelligent, deeply interested, and of an inquiring and receptive mind. I have very pleasant recollections of my work there.

The Hon. Minister, Mr. Jules Allard, is about to take a very important and necessary step in bee-keeping. Mr. A. Girard writes me, under date of Dec. 30, 1907. "At the next session of the Parliament of Quebec he intends having a law passed for the appointment of inspectors to fight the contagious disease foul brood."

Mr. A Girard, editor of the *Journal of Agriculture*, who takes the very deepest interest in bee-keeping, stands in a very prominent and influential place, and is able to help the cause. It has been my pleasure to attend institute meetings with him, and I know he is ever ready to do all in his power to help in the development of this industry, for which he has a genuine affection.

Of the many bee-keepers who well deserve mention in this article, owing to limit of space the readers will, for the present, have to content themselves with a brief introduction to four gentlemen, all Canadians by birth, but two of English and two of French extraction.

Mr. F. W. Jones, Bedford, Que., is perhaps one of the very best-known bee-keepers in the province. He has done much to disseminate modern apicultural knowledge. He has not only been an extensive bee-keeper, but he does a large business in bee-keepers' supplies. From personal acquaintance with him for many years I know he possesses not only strong business integrity, but he seeks to do toward others as he would be done by.

Mr. C. O. Jones, Bedford, Quebec, is an extensive comb-honey producer, and these two last-named gentlemen have had the experience of competing with one another at Montreal exhibitions, even dividing the prize money when the judges did not act wisely. I have been in Mr. Jones' winter repository. He removes the bottom-boards from the hives, closing, however, about three-fifths of the space below by setting the hive on two other hives sufficiently far apart to leave open at the bottom two-fifths of the center space, running from front to back.

Mr. Jacques Verret, Charlesburg, Quebec, like the Messrs. Jones, speaks both English and French, and is of French extraction. He is an enthusiastic bee-keeper, and is a strong advocate of black bees. He prepares his colonies for winter in September, wintering only strong ones with plenty of stores. His bees are put into winter quarters about November 15, and for the last four years they

have been brought out on the second day of May. Eight pounds has been the average consumption per colony in the winter.

Mr. A. L. Beaudin, St. Chrysostome, Quebec, is one of the largest and most progressive French bee-keepers in the province. He is about 45 years of age, and has been interested in apiculture for many years. He generally has from 200 to 300 colonies of bees, producing extracted honey almost entirely. He uses the nine-frame Langstroth hive called "The Model." His crop of honey is generally white clover; and as he leaves the honey with the bees until it is well ripened, it is of excellent quality.

Quebec, having many natural advantages for bee-keeping, should do every thing reasonable in its power to develop it. If you, Mr. Editor, could recommend a French bee-journal it would be a help to many in that province who do not read English.

Brantford, Ont., Canada.

[*L'Apiculteur*, 28 Rue Serpente, Paris—now in its fifty-second year; *L'Apiculture Nouvelle*, E. Bondonneau, Paris, 142 Faubourg St. Denis; *Revue Eclectique d'Apiculture*, 11 Rue de Mezieries, Paris.—W. K. M.]

## THE TWO-QUEEN SYSTEM.

**This Plan Makes it Possible to Keep the Brood-chamber Packed with Brood During the Flow; Forcing Honey into the Supers; Wintering Two Queens in One Hive not Desirable.**

BY J. E. HAND.

*Continued from the Jan. 1st issue.*

In the first article on this subject I stated that no iron-clad rules should govern the disposition of a two-queen colony during the harvest, and I gave what I consider the best method of managing such a colony during a good honey-flow when the bees are likely to swarm more or less.

However, if the bee-keeper, after a careful study of the present conditions and future prospects of the honey resources of his location, decides that the harvest will be short, and, consequently, not much swarming, then it would be unwise to make artificial swarms as directed in a former article; and he will either keep the two queens in the same hive during the harvest or else follow the plan as outlined in our season's work with the sectional hive.

However, since the various hive manipulations necessary to the successful carrying-out of this system are quite complicated, and since feeding back is a science not well understood, and therefore is likely to cause trouble for the beginner, I would advise those who wish to give the two-queen system of comb-honey production a trial to follow the more simple methods as outlined in these two methods.

By expanding our brood-chambers during the breeding season (gradually by means of shallow brood-sections) prior to the harvest we fully develop the fertility of two queens in one hive, thus securing a much stronger force of workers for the coming harvest than it is possible to secure with one queen in any hive. And then, at the beginning of the harvest, force this great army of workers to begin storing in the sections at once—not by extreme *hive* contraction, as in a former article, but by limiting the room in the brood-chambers during the harvest, so that two queens will have no difficulty in keeping it full of brood to the exclusion of honey, which must go into the sections.

Mr. Titoff claims that two queens are not necessary during the harvest; and cites for proof the fact that some bee-keepers restrict their queens during the harvest to two or three brood-frames. However, he seems to lose sight of the fact that, to restrict the queen during the harvest, without an equal contraction of the brood-chamber, would be to do so at the expense of a honey crop, since the honey would be stored in the brood-chamber instead of in the sections.

The successful comb-honey producer of to-day will not winter his bees upon stores of white honey with the corresponding difference in price between that and sugar syrup, as well as the superiority of the latter as a winter food for bees.

It is not only very desirable to have a brood-chamber full of brood during the breeding season prior to the honey-flow, but it is equally important to keep it full of brood during the entire harvest to the exclusion of honey. And such brood will put dollars into the pocket of the bee-keeper by holding the brood-chamber against honey during the three weeks of their hatching period, even if they never gather very much honey. However, such bees often come handy in storing honey from some unexpected source during autumn, and this is just what they did in our home yard last September.

Regarding the condition under which two queens may be kept in the same hive for any length of time, it is needless to say that this can be accomplished only by keeping the queens as far apart as possible, and for this reason it is safer to use a double queen-excluder and feed during a dearth of honey, not to stimulate brood-rearing, but to keep the bees busy and good-natured toward the queen. Further than above stated, it is not desirable to keep too queens in one hive, and I prefer to winter surplus queens separately in my shallow brood-sections with a small bunch of *young* bees. The fact that several queens may be safely introduced into the same hive, and that such will often remain together, is not strange when we understand queen nature, and only proves that it is possible to use a plurality of queens so far as the bees are concerned. If two queens meet, and the challenge to mortal combat is given and accepted, they will lock in a deadly embrace, and one is quickly killed; but if one refuses to fight, and runs away, the other will not pursue her, and this may be repeated every time the queens meet until the cowardly and weak ones pluck up courage enough to fight; and if two remain in the

hive for any considerable time it is safe to say that one of them is of no account.

While the two-queen system as above outlined will greatly discourage swarming by keeping the brood-chamber free from honey, yet I do not recommend it as a sure means of swarm control except in seasons as above described; and in case a swarm issues it is treated as described in a former article, and work in sections will go on with renewed energy

Birmingham, O.

## THE PLURAL-QUEEN SYSTEM.

**A Series of Interesting Experiments; Clipping the Queens' Stings so they Can't Kill each Other; do the Bees Take a Hand in Royal Combat?**

BY EARL BUSSEY.

How two queens may be kept in one colony, unseparated by queen-excluding zinc, and how long it is possible for them to remain in this condition without disaster to either queen, seems now to be the main question.

Having experimented along this line to some extent, and also having been in a measure successful, I will endeavor to explain *how* they may be kept in this manner, and *how long* it is possible for them to continue in this state.

After reading Mr. Alexander's article some time ago, wherein he stated that he had been successful in keeping two queens in one colony, I at once decided that, if the scheme were possible, I wanted to know something more about it right away.

You can imagine the exodus to the bee-yard. Arriving there I immediately made preparations for the furthering of the experiment by getting in readiness a new hive. I then succeeded in extricating two queens from their respective abiding-places, each being accompanied by three frames of brood and bees. These separate combinations being placed on opposite sides of the hive, the cover was put in place and the whole removed to a new stand. The hives being eight-frame it will now be seen that there was an unoccupied space the width of two frames in the center, which was to serve the purpose of keeping them apart until such time as they should become reconciled to each other.

Three days after, no fighting having taken place, and as they were working nicely, I decided to look in on them. Removing the cover I lifted the frames from one side and found the queen doing nicely. On the other side I found the same state of affairs. I then removed the whole to the center so as to form one cluster, and replaced the cover.

Now then! The next day I removed the cover once more, and proceeded to investigate as to the success of the coöperation proceedings. Every thing was quiet and nice, with a few guards standing to attention around the outposts. I now had no doubt at all about the matter, and could almost imagine them drawing up a set of corporation laws or debating the question as to whether they would work more than eight hours. But on removing the frames I could find only one queen. Horrors! Is it possible that here in this peaceful-looking congregation there has been vile murder done, a tragedy enacted, or possibly a case of abduction? Perish the thought!

On thinking the matter over I came to the conclusion that the missing queen must be out taking an airing, leaving her sister to look over and attend to the wellbeing of the community, both having come to a previous understanding after a realization of the improved state of affairs. Yes, I would much rather think this way. Besides, that queen cost a dollar.

Next day I looked, and next, but still I could find but one queen. About this time I began to have doubts; and, to settle the question, I removed the remaining queen. It rained next day, and I left them alone; but the next day I looked in and found they had started queen-cells. This left no doubt about the matter, and I was forced to come to the conclusion that, so far, the two-queen system had proven a rank failure. But one swallow does not make a summer, and I was determined to have two queens work together in harmony. So, twice again I tried the experiment, with the same result both times.

About this time I was getting a little disgusted with the two-queen business; but I should certainly like to know what went with the missing queen. After studying the matter over for a couple of weeks I settled on a plan whereby I could find out whether the queens did fight each other; and if they didn't I would know it was the bees that did the killing. So I took two queens and cut off their stings by folding the abdomen over my thumb-nail, and pressing, when their stings came out and were amputated. These stingless queens being taken from a double colony, one above the other, with excluder between, did not have to be introduced in the usual manner, so I turned them loose at once, each on an opposite side of the hive. In two hours I looked in, and on lifting out the third frame I saw the two queens come together, and right there I witnessed one of the fiercest battles I ever saw. The bees stood around like referees, forming a circle around a prizefight, and not one of them offered to interfere. But as a battle it was a bloodless one, so I left them until late in the evening, when, on looking, I found them still fighting. One of them seemed to be getting the best of the other, for she had gnawed off one wing completely. So I separated them by putting one of them below the excluder, and I may say that they are just as I left them, both of them having done good work the rest of the season, and seeming none the worse for the loss of their stings and their battle.

I may also say that I have been successful in keeping three queens in one colony for five weeks. These queens were superseding, and were not a year old. The reason why they were superseding is that I had been

moving them from one queenless colony to another until such time as I could get queens for them. I let them requeen out of their second batch of cells, and could not see but they did as well as any colony in the yard. After five weeks, two of the three superseding queens in one hive came up missing. I think the reason the superseding queens do not fight is because they have the same instinct that the worker bees have; and when they have been laying heavily for some time they begin to feel their weakness, or want help, or are expecting to meet another queen at any time, any way. I also believe they may be kept together only just so long as they remain in this condition, and that, when they have rested up and have regained their normal strength, their jealousy will assert itself, and that will be the end of the plural-queen system.

Uvalde, Texas.

## THE PLURAL-QUEEN SYSTEM.

### How an English Expert Looks at the Question; the Advantages and Disadvantages.

BY JOSEPH GRAY,
*Traveling Expert in Apiculture, and County Council Lecturer.*

I have read with deep interest Alexander's new plural-queen system. We have in England the Wells hive, which takes two colonies side by side, divided by a central dummy made of wood, and perforated to allow the scent to pass freely to each stock. The bees work to the center, forming one cluster. A queen-excluder is used over the brood-nest, and one common super is used.

*Advantages.*—A mighty working force which will roll in the nectar from the fields and give a large surplus that no single colony will.

*Disadvantages.* 1.—A big unwieldy hive not easy to handle.

2. In winter the brood-nest is likely to separate and make two clusters, and one side is likely to attract more bees during the early spring flight, needing a more skillful management to adjust matters.

3. Often one queen turns up missing in the spring examination, but you get a big colony at the other end.

In my travels I find these hives are gradually going out of favor on account of the disadvantage first named.

*Swarming.*—There is less tendency to swarm, the mighty force bending their energy to storing.

*Locality and season.*—These are important factors in the case. Given a locality and season where there is a good flow, these colonies do well; but in a locality with a slow flow and changeable weather, the swarming may be raging, and all stores consumed in excessive breeding.

Alexander's new method has two points of interest to me.

One brood-nest, without perforations or excluder, where queens, two to five, can roam at will.

The matter of swarm control alone is worth all the experiments, and around it centers the chief interest in the new method.

There is one condition in which Mr. Alexander stands ahead of most of us He has an ideal locality, with a certain and steady honey-flow. Buckwheat may account largely for his success where others will fail.

If Mr. Alexander has given to the world a system that even a limited number can use, that will permit a plurality of queens in a single brood-nest the year round, with complete control of swarming, he has undoubtedly made an epoch in apiculture, and his name will go down to posterity.

Long Eaton, England.

[Since the foregoing was received at this office Mr. Alexander has published a statement to the effect that the plural-queen system, without the use of perforated zinc, has not yet proven to be a success—see page 1496, Dec. 1st issue of last year.

From the testimony that has come in, it seems to be more and more clear that the dual-queen system will not work unless the queens are separated by excluders, and even then only while the colony is in a prosperous condition.

The testimony offered by our correspondent, that the Wells system in its modified form embodies the principle of perforated zinc, is interesting and valuable at this time. But we have known how, sometimes, devices and methods have been prematurely discarded only to be readopted years afterward, and finally put into successful use. The use of self-spacing attachments on brood-frames, for example, was tried some twenty or thirty years ago, and at that time they were generally discarded except by a few, but now they are in general use. It is possibly true, therefore, that the two-queen system in connection with perforated zinc was discarded in your country before it had had a fair test. —ED.]

## REQUEENING.

### Shall the Superseding be Done by the Bees or by the Apiarist? Killing the Old Queens only after the Young Queens are Laying; some Experience in Queen-rearing.

BY F. GREINER.

The bee-keepers we meet at conventions are an enviable, happy lot of people. They are generous; they give as freely as they partake. An enjoyable time is always assured, even should but half a dozen convene.

After having returned from the joint meeting of the Ontario and Seneca County bee-keepers, with a few visitors from Wyoming, Livingston, Yates, Tompkins, and Monroe Counties present, I am filled with greater enthusiasm for the pursuit, and am better fitted to cope with the ever changing prob-

lems as they present themselves as time advances.

The address which I delivered on the subject of requeening and queen-rearing, after embodying the many suggestions received would read about as follows:

The minds of the bee-keepers on the topic of requeening are not agreed; but the general opinion is that young queens are more profitable than old ones. It is shown that colonies rarely swarm with queens of the same year's rearing — particularly so when large brood-chambers are used and honey-seasons do not continue uninterruptedly till late in the fall. Large brood-chambers full of large deep frames have a tendency to produce large quantities of bees, and these in turn give us large honey-yields; but the queens must be young and prolific.

It would appear, then, that the matter of requeening must be looked after by the apiarist himself. It seems to be the opinion that the bees themselves can not be depended upon to supersede queens timely, although something might be done in the line of breeding bees to perpetuate such a trait.

This matter is not lost sight of in Germany and Switzerland when selecting breeding-stock. With our average stock of bees, when nothing is done to renew the queens some colonies will be found every year in every large yard, which fail to breed up; and when this happens at a time when strong breeding is necessary to produce the bees for the harvest, our honey crop will be a failure from such colonies.

It will be cheaper, Mr. Taylor (of Michigan) says, to keep a few more colonies of bees to make good the loss from this source than to renew a lot of queens every year.

### CHEAPER TO REQUEEN EVERY YEAR.

Other bee-keepers think differently. In fact, Mr. Olmstead, of Bloomfield, claimed that it is much cheaper to requeen every year in the spring by rearing the new queen in the same colony containing the old one, not removing the latter till the young one is laying, than to leave the matter to the bees and be bothered with the swarming trouble, holding that the work of rearing the queens in the very early part of the season is a great deal less work than to watch and examine each colony time and again for any swarming symptoms, and then deal with them accordingly.

A more general practice is to rear queens all along the working season and have them mated in nucleus boxes, and then introduce them where wanted, or wait till the close of the white-honey harvest, and requeen by giving a ripe queen-cell after removing the old queen. The former method is, of course, the more costly one, as it means the breaking-up of a few colonies of bees from which we might have obtained a surplus.

### REQUEENING WITH NATURAL CELLS.

On account of convenience, many bee-keepers prefer to make use of their naturally built queen-cells found in the populous colonies of the yards Undoubtedly this is a safe plan, as the resulting queens will be fine, and free from the objection of having been tampered with.

### THE ARTIFICIAL-CELL-CUP PLAN.

Other bee-keepers make use of artificial cell cups, stock them up with royal food, and transfer larvæ into them Our friends in Germany call this a laborious method, while I myself hold the opposite view. It is the easiest way of obtaining the queen-cells in such numbers as are required, and at a time when needed. The pleasure derived from this method, the joy and agreeable surprise over the success crowning our efforts along this line, can not be estimated by those who never put themselves in touch with this exceedingly interesting branch of apiculture.

It would lead too far to describe minutely the whole process. Works on queen-rearing ought to be consulted. The government bulletin, written by Dr. Phillips in 1905, may be had for little money, and explains matters very plainly. The little book on queen-rearing, by the Root Co., is very good.

### A FEW KINKS IN QUEEN-REARING.

A few kinks may be mentioned here which may not come amiss. Expensive implements and other auxiliaries offered by supply-dealers are not necessary to insure success. The dipped cells may be fastened to movable bars inserted in an empty brood-frame. If no royal food is at hand, the larvæ may be transferred without it. The bees will accept them just the same; but I would advise removing the thus transferred larvæ the second day, and make another graft.

One of the very best and at the same time simplest and cheapest instruments for taking up larvæ, without injuring either larva or cell, is a common pin pushed with its point into a small stick. This instrument has been tested by Mr. Olmstead, and will take up the smallest larva easily; and, again, the little bee-baby can be dislodged from it without any trouble. I think such a tool will facilitate the work, and, when known, will find favor with all who practice grafting cells.

### DOES THE ARTIFICIAL METHOD TEND TO DEGENERATION OF STOCK?

I am entertaining the fear that, by following up this system of rearing queens by grafting larvæ, our stock of bees may deteriorate or degenerate. I do not think that any harm will come from practicing this method occasionally; for, by thousands of years of nature's breeding, the habits and the whole nature of the bee have become so well fixed that an accidental blunder or mistake on our part will not be noticed. It's a sure preventive of any degeneration. Mr. Olmstead has suggested to select always such queens for breeders as were reared naturally under the swarming impulse, without interference of man.

### MATING IN UPPER STORIES NOT A SUCCESS.

So far I have not been able to make a success of mating queens in upper stories over an excluder so long as the old laying queen was present in the lower story. I will take

up this work again next spring. I have long since found that bees can be manipulated with less annoyance early in the season, particularly during fruit-bloom, than at any other time, and possibly I may succeed then in mating queens separated from the laying queen by perforated metal.

THE MATING-BOX NOT ALTOGETHER SATISFACTORY.

So far I have had all my queens mated in small mating-boxes during the clover-honey season. This is somewhat expensive, as a number of colonies will have to be broken up to form the small swarms necessary, and we do not obtain any surplus from them. What I desire is a perfectly safe method to rear queens in upper stories or within the hive somewhere with the old queen present and doing business. The very fact that bee-keepers and queen-breeders everywhere make use of nuclei and mating-boxes proves that they have not been any more successful than I have been in rearing queens without them. If a sure method were known, the mating-box system would be abandoned. It is perfectly practical to have the queen-cells built over an excluder in good strong colonies, but with me only a few queens begin to lay eggs. They come up missing generally. When the queens needed are reared in the same yard, even when the mating-box system is used, the introduction of them to other colonies during the honey season is simple, and reasonably sure. All we have to do is to remove the old queen and allow the new queen (fertile) to run from the comb of the mating-hive over into a brood-comb from the other, right in among the bees. A queen heavy with eggs is accepted very readily, while one with a reduced or shrunken abdomen is objected to. The bees detect the difference between their old queen heavy with eggs and the one which has been kept out of the hive for even an hour or two. Such queens I can not introduce without caging; and the longer the queen to be introduced has been kept out of the hive the longer she will have to be confined in the cage before the bees may be expected to treat her kindly. If it can be so arranged that the queen is liberated by the bees during the night, all the better. The bees are so accustomed to the fact that strange bees never enter their hive and home during the night time that they take it for granted every thing must be right, and so they accept the new queen without molesting her.

Naples, New York.

## THE JANUARY MEETING OF THE MASSACHUSETTS SOCIETY OF BEE-KEEPERS,

BY X. A. REED.

At the January meeting of the Massachusetts Society of Bee-keepers, in the absence of any regular speaker several topics were brought up for discussion.

Honey of different flavors was mentioned. A distinct flavor of spruce was noted where the bees had visited the buds of spruce-trees. An acid taste in apple-blossom honey had also been found.

A very interesting account was given by Mr Chase concerning the origin and use of the pound and two-pound section boxes in Massachusetts. In the 60's he took a frame of excellent honey to Boston, calling to see if more was wanted. He found that even that was not sold. No one would buy five or six pounds of honey at once; and, realizing the fact that, if bee-keepers in Massachusetts wanted to sell their honey, it must be in some convenient form, he and Mr. Gould, of Ipswich, made suitable one and two pound sections, and in 1863 Mr. Gould sold a ton and a half of surplus honey.

Miss Cutter, of Princeton, gave her experience with the seventeen-frame Latham hive from which she obtained 111 lbs. of honey while her other colonies gave her no surplus.

As a result of his observations on weather conditions, Mr. Small, of Waltham, stated that the bees in spring and in early summer, and even in the fall, when asters are in bloom, work better when the nights are cold (almost frosty) if the temperature rises rapidly in the early morning. His theory is that the nectar is secreted by the flowers more rapidly, and is of a better quality under such conditions. The weather that, in early spring, causes a good flow of maple sap will, later, make the nectar more abundant.

A discussion as to the best kind of bees for both comb and extracted honey resulted in no agreement. The only point of harmony was that the Italians surpass the blacks and hybrids in gentleness.

This was our third meeting and it showed an increase over the first afternoon, there being twenty-one members present.

Our next meeting will be the first Saturday in February, in the evening, at the Ford Building, corner Ashburton Place and Bowdoin Street, at 7:30. These meetings should be attended by all members, as there are only three more "unless otherwise ordered." We expect to receive some new members at this meeting, and hope to see a lot of the old ones.

Belmont, Mass.

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THE NEW YORK PURE-FOOD SHOW.

A PURE-FOOD show will be held in the Lenox Lyceum, March 26 to April 16. It will be managed and financed by the New York Retail Grocers' Union under the personal direction of Mr. L. J. Callahan. This show ought to be a great success, as the forces behind it are of a solid and reliable kind, not easily discouraged or defeated. Besides, New York is the best place in the country for such a show, and the Lenox Lyceum is central to the wealthiest class of buyers in America. Fancy honey ought to be very much in evidence at this show, as it gives a unique opportunity to impress the public with the superlative value of honey as a food. W. K. M.

HIGH-PRESSURE GARDENING DURING THE FIRST WEEK IN JANUARY IN MANATEE CO., FLA.

While we were discussing winter weather in this region, one of my good neighbors, Mr. Stanton, remarked that he had been here four winters; and as all four were very different indeed, he had ceased speculating as to what the weather would probably be. This is my third winter in this county. The first was unusually wet; the next (last winter), *unprecedentedly* dry, and, in fact, there was a lack of rain all summer until almost December of this present year. When I got here with my *barometer*, however, I began giving notice all around that rain was *coming*, and we had an abundance. On one occasion I said there was going to be a *big* rain or wind storm, and advised all to get ready for it. Mr. Rood had his men clear out the ditches and open up all depressions so there would be no standing water, and, sure enough, within 48 hours we had an almost continuous rainfall of about 2½ inches. There have now been five heavy rains in the past six weeks, with a week or more of beautiful weather between them, and the barometer has given prompt notice ahead of every one, almost as faithfully as a clock gives the time of day.

On account of the damaging dry weather for a year or more past, some very extensive (as well as expensive) irrigation plants have been put in. Within two miles of where I sit, a plot of 30 acres has been drained and fitted for trucking, and several acres of this are already equipped with the Skinner overhead sprinkling system. It was my pleasure to visit it when the apparatus was giving a veritable summer shower over a good part of an acre. The water is collected in pipes overhead, with sprinklers every few feet; and by rotating these pipes the water can be distributed very evenly indeed. Mr. Rood has finished laying tiles for sub-irrigation on two acres. A well has been dug, and a ten-horse-power gasoline-engine installed; but the abundant rains have so far prevented even a "trial trip" of the irrigation part. The tiles, laid only 20 feet apart, are, of course, doing their part, and Mr. Rood has now the finest field of Boston Market head lettuce I ever saw *anywhere*, some of it just heading up nicely. Now, here is a trouble some of you might not think of. At this date, Jan. 5, there has been (besides plenty of rain) most beautiful warm growing weather. The consequence is, every thing is coming on and maturing before the usual time; and that is not all—almost everybody, especially when they had good drainage, has a crop. I have just heard a hint that lettuce in the northern cities is bringing only enough to pay the cost of package and transportation, leaving nothing for the grocer.* This is quite a contrast to last winter, when the shipper was astonished by getting a price that almost took his breath away.

Well, neighbor Rood is all right on his strawberries if not on the lettuce. There are not only more of them, but larger and finer fruit than he ever raised before. It is true he has put the price down to 25 cts., but one day last week they picked 89 quarts, and he usually has his heaviest harvest in March. Whoever comes to Florida will find all garden stuff grown on raised beds, with some kind of open ditch between. Of course, tiles would enable us to have level fields like those in the North (or it *probably* would), but the cost—2 cts. per foot for two-inch tiles—is one item, and the peculiar soil in most of Florida is another. Let me digress a little.

There are no cellars in Florida—at least, next to none. I wanted a cement cellar for my two incubators; but everybody said it would get full of water. I thought I would show them. I dug a ditch along my line fence four feet deep. Such open ditches are quite common, and almost a necessity when you want to grow stuff. Well, I put a two-inch tile drain from this right *under* the bottom of my cellar. Then, to make doubly sure, I set the wall on a trench filled with broken stone, and this trench was connected with the tile drain. My cellar was all right until we had the 2½ inches of rainfall, mostly in one night. I said in the morning my cellar was all right; but the day *after*, water seemed to be oozing in from all sides, and up through the bottom. Right over the tiles it was comparatively dry; but everywhere else it was wet, and it took about ten days for that retentive spongelike soil to "let go" of the water from that shower. After repeated coats of cement on sides and bottom I have got a model cellar—at least I think so now; but the experience taught me a lesson. This wonderfully retentive soil is a great safeguard against drouth, and it enables us to transplant lettuce, celery, strawberries, etc., without watering, in a way I never heard of in the North. One big rain keeps things growing a long while; and after the roots get down two or three feet it is almost perpetual sub-irrigation. Of course, this condition refers mostly to low ground where open ditches have collected the surplus water away, and when, even in a dry time, water is running in open ditches three or four feet deep.

I replied to Dr. Miller that I had never succeeded in getting sweet clover to grow

* Whenever lettuce is a drug it can be very profitably used for poultry; and where lettuce is being shipped, the refuse will be greedily devoured by the birds. It not only starts them to laying, but when they have access to plenty of crisp lettuce the amount of grain consumed is very perceptibly decreased. Here in Florida fowls must have a large amount of green food of some kind. Ours have sprouted oats all the time, but they seem to prefer greatly the lettuce.

here. I have now alfalfa and sweet clover growing fairly well under the influence of "cow-chips" (see page 1605), and the fertilizers used here for trucking.

In answer to many inquiries about the price of labor and chance of getting work, etc., I would say good faithful and able-bodied laborers get $1.50 per day, 10 hours. Expert carpenters get $3.00 for 8 hours; masons, $4.00 for 8 hours; painters, $2.25 to $2 50. Now, I want to tell you frankly that quite a few northern people come down here and get disappointed in regard to work and wages. Many are too old to do a good day's work; others have worked a *little* at the carpenter business, etc. To get $3 00 for 8 hours a man must be up to the times in his business, and he must "make the work fly" for the full eight hours. As a rule you can't do anything down here until you have learned how, and you must be bright enough to keep your eyes open and *see* whether you are doing as much as the people you are working with who get the same pay.

In regard to the locality for health, I think it a splendid place to spend the winter, especially for invalids and old people. The carpenter who builds our house said the doctors told him three years ago, in the North, that he could not live until spring, as his lungs were so badly gone. He now works right along, winter and summer. I think I will close with a letter from our old friend M. H. Hunt, one of the leading bee-keepers of Michigan, whom most of the bee-keepers know.

*Dear Mr. Root:*—I have just received GLEANINGS, and find in it you are south for the winter, and, of course, you have to garden a little. Myself, wife, and daughter have been here a month. I too have a garden, and it is looking fine. I have in onions, beets, turnips, radishes, lettuce, mustard, parsley, and cucumbers, besides some flowers. I suffer while north with stomach trouble, but I am always over it within ten days after landing here. I can eat any thing here without trouble afterward. I expect to remain south until the first of May. I went home last year the latter part of March, and made a mistake by so doing.

I have the use of a nice gasoline-launch and other boats, and enjoy the boating and fishing very much. I caught a fish last Saturday that weighed 18 pounds. The town of Crystal River is seven miles from the Gulf, which we visit two or three times a week. We take the ladies along and have dinner on an island where my friend Mr. Baum owns a house for the purpose. I have been to Bradentown several times, and think it about as nice as any town in the State. I know a gardener half a mile out by the name of Herman Crandall. He went there from near our home in Michigan. Four of my friends in Michigan will join me here next Thursday, and on the 9th of next month two more; and later on I expect more.

It is a wonder to me that more people do not spend the winters south. The beautiful sunshine and the warmth, with the continual growth of vegetables, etc., are very attractive to me—no more snow and icicles for me as long as I am able to make the trip. If you can get lime and put on your new ground it will sweeten it, and stuff will grow much better. My garden is an old mule-pen, and as rich as you could imagine. M. H. HUNT.

Crystal River, Fla., Dec. 30.

My 26 Leghorn pullets that I raised last winter (one fourth game, you remember), are doing finely; and with eggs still at 35 cts. they pay their way very well. I shall have a "chicken story" for the younger readers of GLEANINGS soon.

## SWEET CLOVER FOR PASTURE; SOME IMPORTANT TESTIMONY IN REGARD TO ITS VALUE.

Professor Thorne, of our Ohio Experiment Station, has called our attention to an exceedingly valuable article on sweet clover, which is clipped from *Wallace's Farmer*. Perhaps I should explain that the Wallaces, editors of the journal named, of Des Moines, Iowa, are about as good authority on all the clovers, perhaps, as any people living. Below is the extract:

Mr. Frank Coverdale, of Jackson Co., Iowa, has for some time been advocating through the press and at farmers' institutes the use of sweet clover (*Melilotus alba*) as a pasture grass. Many regard sweet clover as a vile weed growing unsown by the roadside, and we are often asked how to get rid of it. Therefore it has surprised many farmers that any farmer should advocate its cultivation. Mr. Coverdale, however, is not the first one to advocate it. As much as twenty years ago a farmer in Madison Co. was a stanch advocate of this plant, using it both for meadow and pasture. We once visited his farm and asked him if he did not have difficulty in getting cattle to eat it. He replied, "Not when they once become accustomed to it." In order to find out what there is in this thing we sent Mr. Coverdale the following questions:

1. How many acres do you have in sweet clover?
2. How long have you made a practice of pasturing sweet clover?
3. Do you have any trouble in getting your cattle to eat sweet clover?
4. When do you turn them on it in the spring?
5. Will they eat it after it has grown up a foot to eighteen inches?
6. Will cattle which have not been on sweet clover, and practically starved to it in the beginning, eat it?
7. Is your sweet-clover pasture entirely sweet clover, or do you grow other grasses with it?
8. How long can you keep a field in sweet clover when you follow the practice of pasturing it closely, and not permitting it to bloom and seed?
9. Where do you get sweet-clover seed? and how much do you pay for it?
10. How do you seed it to make a pasture? and how much seed do you sow per acre?
11. How many steers will a forty-acre sweet-clover pasture carry through the grazing season?
12. Are any of your neighbors sowing sweet clover for pasture?

In answering the above, Mr. Coverdale has sometimes grouped two or three questions together; but his answer gives a clear statement of his experience as follows:

1 and 2. I have pastured 35 acres for 4 years; have also sown small patches here and there in an experimental way. This field was sown to timothy and sweet clover except a little strip of alsike, which is now nearly gone, and it is now a thick mass of sweet clover and timothy with blue grass coming in.

3 and 7. My cattle make no choice between this and other grasses. All are eaten with equal relish, as you will see from the photograph of my cattle in the pasture, sent you herewith. Timothy grows with it, also a little alsike and blue grass, and it is all eaten together.

4. I have always turned cattle on in the early spring, as this clover is a week earlier than the other clovers.

5 and 6. Cattle turned into a field of the clover a foot high act as steers do that are brought from the range and introduced to a trough of corn. At first they will not eat it; but they soon catch on, and thrive on it. My cattle never refuse to eat sweet clover. If the plants become old and woody they will browse on the tops or any part of it that remains green.

8. If a field of sweet clover is pastured close to the ground, three years will finish it. One man here turned too many cows on a small plot of it, and it is seriously injured; whereas it ought to grow better year after year. I sold one man enough seed to seed a small field for hogs, and they have completely destroyed it. He has simply put on too many hogs for the pasture. Another man had a small hog-lot of old plants started, and by the first of June it was eaten out root and branch.

9. I purchased my seed in Chicago at a cost of $9.00 per 100 lbs. I think it is found most generally in the Southern States.

10. This 35-acre field was sown with timothy and sweet clover after being plowed and harrowed, just as you would seed to alfalfa. The ground should be put in good condition, and the seed covered shallow. In this respect it seems to differ somewhat from red clover, which should be covered deeper It should be sown thicker than red clover to get the best results. It will not smother out either timothy or blue grass. In fact these grasses do their best when sown with sweet clover.

11. I have never found out the capacity of this thirty-five acres for yielding grass, as it is such a rapid grower. However, after once getting established it will very far outstrip any other clover that grows here, and should be better as the years go by, which is not true of any other clover. Tramping the ground benefits it, provided it is allowed to reseed itself each year. Other grasses will come to the front if sown with sweet clover.

12. My neighbors are just beginning to wake up to the value of this crop, and are purchasing seed to sow from ten to forty acres for pasture.

I sowed 70 acres last fall on stubble, and hoped to get a good catch. It was sown on the bare ground early in December, and proved an entire failure, only a bunch here and there surviving. I have never failed when I put it in in the spring, covering lightly, and then turning on the cattle. The tramping does it no hurt. However, the soil should be inoculated with soil that is full of the bacteria, which seems to be the same as that of alfalfa. A good stand can always be secured by sowing with oats and pasturing moderately. Last spring I sowed a narrow strip through the oats-field, and at this writing it is a fair stand of slender plants that look rather sickly, just as alfalfa would look under similar conditions. Inoculated soil should have been sown with it and covered with the seed.

July 23 I took steers off from this 35 acres in order to let it grow up for seed. I harvested the seed Aug. 18, and part of the steers that were not shipped were turned back on it Aug. 25, by which which time the young clover growing up was 20 inches high. It was eaten at once with evident relish. The mower-bar was run over the top of this young clover ten or twelve inches from the ground, thus allowing only the tops of the old clover for seed. The steers will make heavy gains on this field.

After my four years' experience with sweet clover I would advise farmers not to put too many cattle on the field if they wish to fit them for market, as I have done, and save two months' feeding of expensive corn. My cattle that were shipped off this pasture (without corn) weighed 1163 lbs. at Chicago, and brought $5.75 per 100 lbs. while other cattle on the market at the same time, and of better quality, brought from $4 90 to $5.25 Mine went on grass thin, while the latter went on in better flesh. My cattle had a nice sleek coat, similar to corn-fed cattle, and they were nearly as fat.

Now, friends, the above article ought to answer the question, and it ought also to refute the statement that has been made several times in different periodicals, to the effect that sweet clover is of no value to farm stock, or that horses, sheep, and cattle would not eat it. The above explains quite fully why it is that farm stock will at first refuse to eat it. I feel confident that I can in a very little time teach horses, cattle, sheep, and pigs—yes, and poultry too—to eat sweet clover with avidity anywhere in the United States wherever sweet clover will grow.

## Temperance.

### THE ANTI-SALOON LEAGUE IN FLORIDA.

Our temperance meeting last Sunday evening was a "hummer." It was a union meeting of all the churches, and the house was crowded. I opened the meeting with a five-minutes' talk, and then Mr. Lambert, the State Superintendent of the Florida Anti-saloon League, spoke about 40 minutes. They are exceedingly fortunate in getting so bright and wideawake a man for the work. He got them so waked up that every man, woman, and child in the church rose up and voted against the saloon. He *is* a godly man, and at the same time *fearless*, and of remarkable ability. Florida will soon be *all* dry, if he keeps at it.

---

*Dear Friend Root:*—We are glad to welcome you back to Florida. I want to see you this time before you skip out. I suppose you will go to the fair at Tampa next month. Why not plan to be there at a certain time and give notice in GLEANINGS, as many of your friends would likely plan to meet you?

There is one phase of the question we temperance folks are ignoring. Man is a gregarious animal. You and I have our homes, friends, books, papers, a bright light, and a cheerful fire; but many men, and especially the tempted ones, have not these things, and the saloon offers companionship, light warmth, and cheer, and do we wonder they fall in with it?

This wave of temperance in the South does not mean that drinking is at an end; but much of it is through fear of the darkie, and is to keep him from whisky. The gallons and gallons coming by express every day means some one is drinking a lot of rottenness. Well, come and see us, and bring Mrs. Root by all means. We shall be glad to meet her.

Bowling Green, Fla., Jan. 7. IRVING KECK.

I have asked the fair commissioner to appoint a day for bee-keepers, and I will give due notice as soon as I hear from him, and arrange to be on hand. The Florida Anti-saloon League is already after the express companies, and I think something is going to happen soon.

### PARCELS POST, AGAIN.

WITH a few exceptions the entire agricultural press of the United States is a unit on the subject of parcels post. The editors seem to be well aware that the entire opposition to this great improvement originates with the express companies and their friends the railroads. Underneath all this opposition lies the idea that the farmer is a sort of hoosier, peon, or peasant, and that he ought to be very contented with things as they are. They forget he is the great wealth-producer of the nation, and that it is he who supplies most of the exports to pay our indebtedness to other countries. All other goods are a mere fraction of our exports of wheat, cotton, and other farm products. The farmer makes the millionaires.

There is a more important side to the controversy, which is seldom mentioned, namely, the propriety of improving the conditions of the farmer's life. Good roads, free mail delivery, telephones, and, finally, parcels post, would go a long way toward making life on a farm an ideal existence Isolation is not good for any one — certainly not for the farmer's wife nor his children.

With central grammar schools it will soon come to pass that the farmer's children will get as good an education as the banker's child in the city. And why not? But the farmer will have to *fight* for these things.

W. K. M.

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With our very large and complete stock of The A. I. Root Co.'s make of bee-keepers' supplies in connection with our comb-foundation factory we are placed in position to offer you a special inducement to try our comb foundation, as we feel confident that you will use it all the time after you once try it.

**HERE IS OUR OFFER — GOOD UNTIL FEB. 15, 1908:**

Any one who sends in an order for bee-supplies at the regular catalog price, with the cash to the amount of $25 or more, will receive, **absolutely free of charge** with his shipment, 1 lb. of thin super foundation and 1 lb. of light brood foundation as samples When sending in your order you must mention this advertisement in GLEANINGS to entitle you to the 2-lb. sample package of foundation.

Now, please understand your order must be for $25 or more, and no shipment will be entitled to more than 2 lbs. of foundation—no matter how large the order may be. We are glad to give you a 2-lb package to convince a bee-keeper that our foundation made by the Weed New Process, out of our clear southern beeswax, is good foundation. We are doing this to enlarge our trade. We seldom lose any of our customers, as we know how to give the money's worth. We receive many complimentary letters from our customers, such as the following, unsolicited:

*Udo & Max Toepperwein:*—I got the bill of hives, and nearly all are made up. They are the finest hives I nearly ever saw. While we were waiting for the order my wife said: "Where did you order your hives from?" I said they were from The A. I. Root Co.; then she said, "Then we shall get some good hives, for they make the best hives we ever used." She always nails up the hives and frames, so she has a right to know about as much about the hive as I do. We have bought bee-supplies from several different factories, but A. I. Root makes the best goods of any of the factories that we have ever bought from. I have used foundation from several different factories and think your Weed New-process Comb Foundation as good as any I ever used. It is a great pleasure to deal with a firm that ships out the supplies as promptly as you do.

Taft, Texas, Dec. 22, 1907. Yours very truly, S. M. CAMPBELL.

*Udo & Max Toepperwein:*—Are you still in the bee-supply business? If so, please send me one of your descriptive catalogs, as I want to buy all my supplies from you as long as you are in the bee-supply business. Very truly yours,

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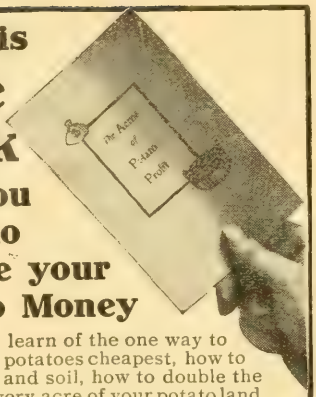


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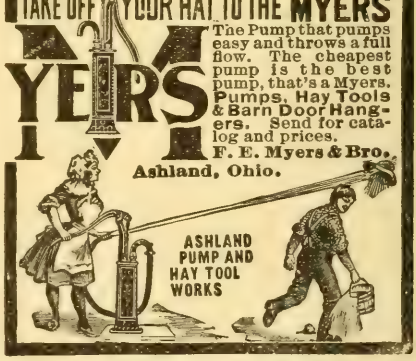


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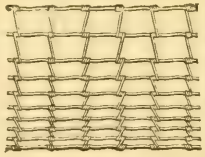

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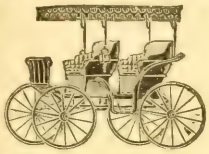

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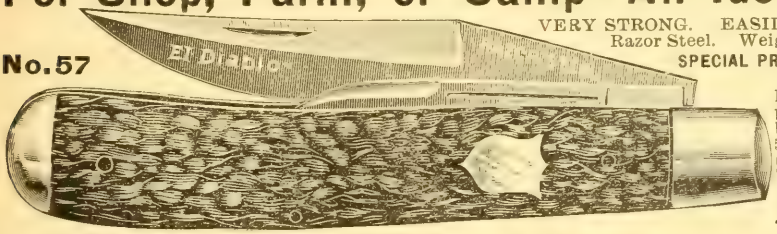

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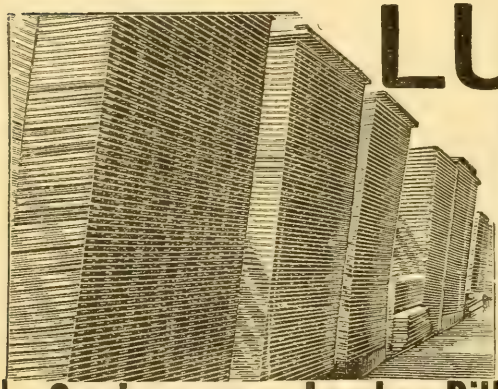

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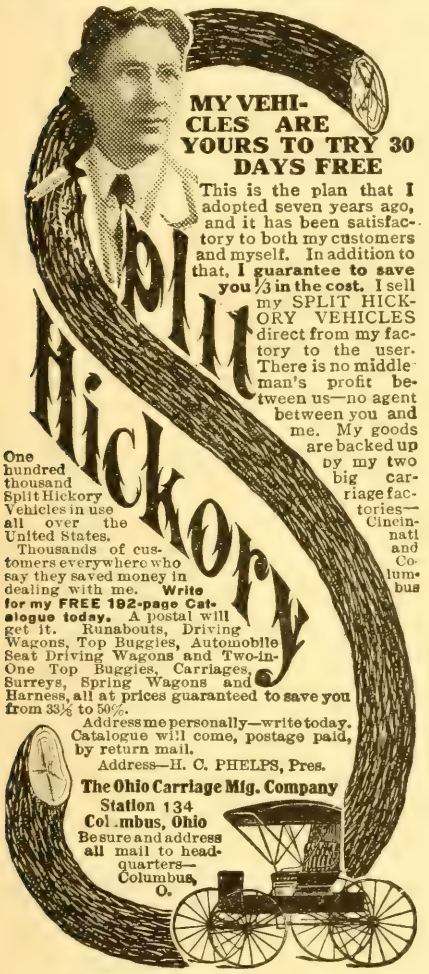
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You can do it with the double-bladed, fast-digging Iwan Post Auger. Bores right into solid clay, sand, gravel or gumbo, no matter how wet or dry the ground. The Iwan Auger is made on a new, successful scientific principle and from the finest tempered steel. Keeps sharp for years. Easiest Auger to unload. Saves twice its cost in one week and lasts forever. Guaranteed to give perfect satisfaction or money promptly refunded.
Digs Wells, too
Our simple and cheap pipe extensions make it easy to dig wells with the Iwan Auger. It's no trouble to get down to depths of 40, 50 and 60 feet with this handy implement.
Free "Easy Digging" Book For You
Send name for "Easy Digging," the interesting booklet, which tells about the low-priced Iwan Post Auger. Write this very day for "Easy Digging." We also make Tiling Spades, Tile Drain Cleaners, Hay Knives, Etc.
IWAN BROS., Dept. R, STREATOR, ILL.

Ten Days' Free Trial
allowed on every bicycle we sell. We Ship on Approval and trial to anyone in U. S. and prepay the freight. If you are not satisfied with bicycle after using it ten days don't pay a cent.
Factory Prices Do not buy a bicycle or a pair of tires from anyone at any price until you receive our latest Art Catalogs of high grade bicycles and sundries and learn our unheard of prices and marvelous new offers.
It Only Costs a cent to write a postal and everything will be sent you FREE by return mail. You will get much valuable information. Do Not Wait; write it Now!
Tires, Coaster Brakes, single wheels, parts, repairs and sundries at half usual prices.
MEAD CYCLE CO., Dept. 3066 Chicago

5 Giant Gloxinias in 5 colors, splendid tubers, only 25 cents. 7 Tuberous Begonias, 7 colors, splendid tubers, only 25 cts.

## Do You Love Flowers?

IF SO write me a letter (*not a postal*) today, and I'll gladly mail you my FLORAL GUIDE, and a Gift Package (5 pkts.) of choicest seeds—**Aster, Petunia, Pansy, Pink and Verbena** (worth 50 cts.), enough for five big beds that will delight yourself and friends all summer. I want to know you, and I want you to know my seeds, which *always grow and please*, and my GUIDE, which teems with new engravings, pronounces the hard floral names, and tells all about germination. Full of good things. Insures success. You will not regret writing me. Tell your friends. ***GEO. W. PARK, B4, LaPark, Pa.***

**STILL MORE.** When writing **why not enclose 10 cents** (stamps) for Park's Big Surprise Mixed Package, 1,000 kinds, for a bed that will show flowers new and novel every day for months; also a year's trial of PARK'S FLORAL MAGAZINE—an original, finely illustrated, entertaining and highly instructive monthly Magazine, all about flowers. 37th year. It visits and brightens 450,000 flower homes every month. ***Why not yours?*** 10 cts. will bring it for a year, also the Surprise Package—alone well worth the money. Club of three 25 cts. Club with friends. Write today.

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## SIX HARDY BLIZZARD BELT EVERGREENS FREE

To prove that our EVERGREENS are HEALTHY, HARDY and Vigorous, we offer to send SIX fine two-year-old trees, entirely FREE OF CHARGE, to every property owner who will answer this advertisement. Mailing expense 5 cts., which send or not, as you please. A postal will bring them and our catalogue which contains many COLORED PLATES of our BLIZZARD BELT FRUITS; SPECIAL BARGAINS and a mine of valuable information for fruit growers. We want to become acquainted with you, and it will pay you to get into touch with our HARDY "BLIZZARD BELT" stock and our liberal manner of doing business. THIRTY-EIGHT years' experience in growing HARDY "BLIZZARD BELT" trees. Write to-day.

**THE GARDNER NURSERY COMPANY,**
**26 Nursery Ave.** **Osage, Iowa.**

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**Over half a century of fair dealing has given our products that prominence which merit deserves. Everything of the best for**

## Orchard, Vineyard, Lawn, Park, Street, Garden and Greenhouse

**Seeds, Bulbs, Plants, Roses, Shrubs, Small Trees, Etc.**

by mail, postpaid—safe arrival and satisfaction guaranteed; larger by express or freight. **Hundreds of car loads of FRUIT AND ORNAMENTAL TREES.** If in want of Fruit or Ornamental Trees, Shrubs, etc., send for Catalogue No. 1, 112 pages. If Seeds, Bulbs, Roses, Palms, Ferns, Geraniums and Greenhouse Plants in general, Catalogue No. 2, 168 pages; both **FREE.** Immense stock of **superb** and **choice CANNAS** — the queen of bedding plants. **PÆONIES** and other perennial hardy plants in large supply. Direct deal will insure you the best and save you money. 54 years. 1200 acres. 44 greenhouses.

**THE STORRS & HARRISON CO., Box 139, Painesville, Ohio.**

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## TWO MONEY MAKERS

**SCARFF'S SMALL FRUITS**

and bees are an ideal combination for bee-keepers or farmers. Order early and plant a generous quantity of these fruits. The bees pollenize them, making them produce in luxurious abundance, and at the same time increase amount and value of honey.

**3 Blackberry Bushes Free.** I want to prove how well-rooted, strong and vigorous my plants are. I will send **free** 3 fine blackberry plants, if you write for my new 1908 free catalog. Some of my customers are making over **$350 an acre** with my plants. With bees you can increase that profit considerably. I sell a large variety of nursery stock, grown on an 800 acre farm. Write me to-day.

**W. N. SCARFF,** **New Carlisle, Ohio**

# BURPEE'S Farm Annual for 1908

"The Leading American Seed Catalog."

**Mailed FREE to all who want the BEST SEEDS that Grow!**

This *Thirty-second Edition* is a bright book of 172 pages and tells the *plain truth.* With Cover and Colored Plates it shows, *painted from nature,* Sixteen Superb Novelties in Beautiful Flowers and Choicest Vegetables of unequalled merit.

**WRITE TO-DAY!**—the very day you read this advertisement. Mention this paper and address

**W. ATLEE BURPEE & CO., Seed Growers, PHILADELPHIA, PA.**

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A MONEY MAKING TRIO

**THREE NEW GARDEN PEAS** from the cold, frosty North. Defiance (early). Bountiful (medium). Petoskey (late). All new this season and full of Northern life and vim. Strong, vigorous growers. Big yielders. Large, handsome pods. Large, sweet, delicious peas.

Send 25c, (stamps or coin,) and we will mail three full-sized packets, one of each kind; our 1908 catalog of **Northern Grown Seeds,** and a coupon good for **50c worth of free seeds.** Don't miss this opportunity of testing the best garden peas ever offered. Catalog alone, mailed free. Write today.

**DARLING & BEAHAN, Box 213, Petoskey, Mich.**

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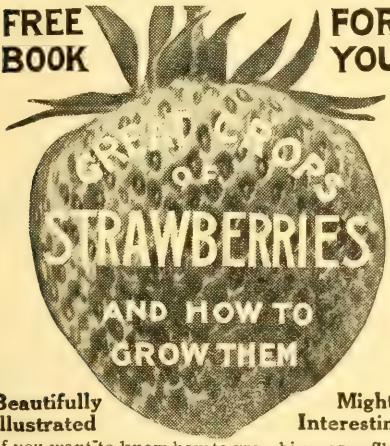
**FREE BOOK FOR YOU**




**Beautifully Illustrated** **Mighty Interesting**

If you want to know how to grow big crops of big red strawberries and to get big prices, send for our 1908 book. It tells all about soil preparation, setting, mating, pruning, cultivating, spraying, mulching, picking, packing and marketing. All of these essential features and many more are explained in such a way that you can't go wrong. It was written right out in the strawberry field by a man who has made a fortune growing strawberries, and he tells you just exactly how he does things. Send your address. That's all. The book is free.

**R. M. Kellogg Co., Box 400, Three Rivers, Mich.**

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**The Sower Has No Second Chance**

Good sense says make the most of the first.

**FERRY'S SEEDS**

have made and kept Ferry's Seed Business the largest in the world—merit tells.

***Ferry's Seed Annual for 1908***

tells the whole Seed Story—sent **FREE** for the asking. Don't sow seeds till you get it.

**D. M. FERRY & CO., DETROIT, MICH.**

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**FRUIT TREES $5**

**Freight Paid, Per 100**

Free from disease; all fumigated before shipping—Apple, Peach, Plum, Pear, Cherry, Carolina Poplar. Order here. Catalog Free.

**RELIANCE NURSERY CO.,**

Box 816, Geneva, N. Y.

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# SEED CORN

**DIAMOND JOE'S BIG WHITE.** Earliest-maturing Big-eared Corn in the world. Made 146 bushels per acre. It costs but 25 cts. per acre for seed. Big illustrated catalog of seed corn and all kinds of Farm and Garden Seeds mailed **FREE** if you mention this paper.

**RATEKIN'S SEED HOUSE, SHENANDOAH, IOWA.**

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# 700,000

**APPLE TREES,** 6 to 7 ft., 14 cts. each; 5 to 6 ft., 10 cts.; 4 to 5 ft., 7 cts.; 3½ to 4 ft., 5 cts.; Boxing free. Also **500,000 PEACHES, 100,000 PEARS, PLUM, CHERRY, QUINCE, APRICOTS.** Shade, and Ornamental Trees. Small Fruits of every description. Liberal discount for early orders. Secure your varieties now; pay in the spring. Our catalog will tell all about it. Send to-day. Free to everybody.

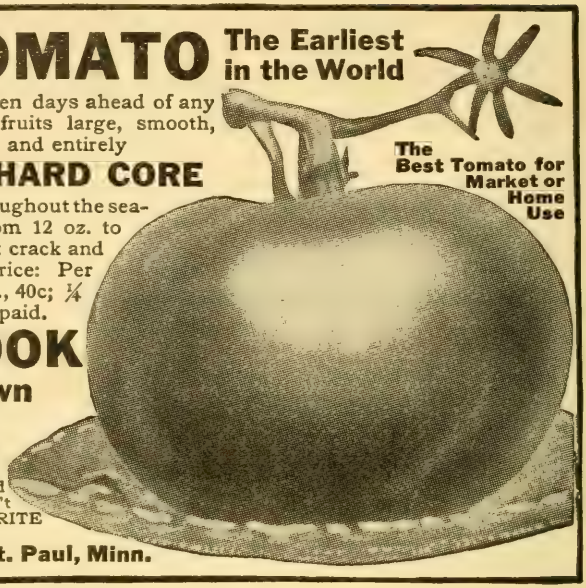
**SHEERIN'S WHOLESALE NURSERIES, DANSVILLE, N. Y**

**MAY'S First of All TOMATO The Earliest in the World**

Matures a week to ten days ahead of any other known variety; fruits large, smooth, bright red; finest flavor and entirely

**FREE FROM HARD CORE**

Bears continuously throughout the season fruits weighing from 12 oz. to one lb. each, and do not crack and rot in wet weather. Price: Per liberal pkt., 10c; per oz., 40c; ¼ lb., $1; pound, $3; postpaid.




**FREE BOOK**

**Northern-Grown SEEDS**

Plants, Bulbs, Fruits and Trees at *right prices.* Don't fail to secure the *Book.* WRITE TODAY.

**L. L. MAY & CO., St. Paul, Minn.**

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**$1 Worth of FLOWERS 35 kinds 25¢ 35 kinds**

**Money back if not satisfied**

Enough choice seeds and bulbs to plant a complete flower-garden — all at a give-away price to induce trial orders, and show the quality of our stock.

**20 Packets Seed**

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| 1 pkt. Alyssum, Little Gem | 1 pkt. Giant Verbena, Mixed |
| " Mary Semple Asters, 4 cols. | " Washington Weeping Palm |
| " Carnation, Marguerite | " Umbrella Plant |
| " Forget-Me-Not, Victoria | " Double Chinese Pink |
| " Hibiscus, Crimson Eye | " California Sweet Pea |
| " Poppy, American Flag | " Bouquet Chrysanthemum |
| " Phlox, Drummondii | " Japan Morning Glory |
| " Pansies, 10 colors mixed | " Petunia Hybrid |
| " Nicotiana Sanderae, New | " Roses, New Climbing |
| " Heliotrope, Mixed | " Lovely Butterfly Flower |

**15 Summer Flowering Bulbs**

1 Spotted Calla; 1 Summer Flowering Hyacinth; 1 Double Pearl Tuberose; 3 Butterfly Gladiolus; 2 Hybrid Gladiolus; 2 Montbretias; 1 Cinnamon Vine; 2 Hardy Wind Flowers; 2 New Pedigree Cannas. **Check worth 25 cents** on your first $1 order, also our 136-page new Illustrated "Floral Guide." All the above for only 25c. Order to-day.

**The Conard & Jones Co.,** Bx. 29A, **West Grove, Pa.**

*Growers of the Best Roses in America.*

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**GOOD SEEDS**

**THE BEST EVER GROWN**

Prices lowest of all. Postage paid.

**A lot of extra packages given free with every order of seeds I fill.** Send name and address for my big catalog. Over 700 engravings of vegetables and flowers. **FREE**

**R. H. SHUMWAY, Rockford, Illinois**

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**850,000 GRAPEVINES**

**69 Varieties.** Also **Small Fruits, Trees, &c.** Best Rooted Stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive price-list free. **Lewis Roesch, Box A, Fredonia, N.Y.**

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**BOOK "More Corn to the Acre" FREE**

if you send names of 5 corn or stock growers and 10c for a year's trial to Farm & Stock, the only monthly devoted to corn and live stock. Regular rate $1, but we make this offer to get list of wide awake growers.

**Farm & Stock, 824 Charles, St. Joseph, Mo.**

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**TWO SUPERB NEW FRUITS**

Send for a FREE Three Months Trial to America's leading fruit paper, The Fruit-Grower, and we will mail booklet telling how to get a tree of Delicious Apple and a vine of Banner Grape, FREE. Two of the best fruits ever introduced, hardy all over the country, finest quality. Delicious Apple sold last season at $6 a box. If you have only a few trees or plants you need this paper. Tells all about fruit—how to plant, cultivate, prune, spray, pack, market. Regular price $1.00 a year, and two new fruits included free, but will make special offer if you answer this ad.

**THE FRUIT-GROWER, Box 307, St. Joseph, Missouri**

Send your paper three months FREE on trial, after which I will notify you to stop or become a subscriber.

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Town _____ State _____

NORTHRUP, KING & CO.'S

STERLING SEEDS

Up in the Northwest is a firm, now 24 years in business, which sells **good seeds.** The Minneapolis Daily Times, Jan. 15, 1905, said editorially:

"It's not too much to say that through the new and improved varieties of seeds introduced by Northrup, King & Co. during the past twenty-one years, **Millions of dollars have been added to the permanent value of Northwestern farm lands.** Of such firms as Northrup, King & Co. it may truly be said, 'They deserve well of the state.'"—(That's how we stand at home.)

**Our Minnesota Grown Grass, Field & Clover Seeds**

produce **larger crops** than seed from any other source. Our **Sterling Brands** represent the highest quality and purest seed obtainable anywhere—at any price. Samples on application. Large magnifying glass to determine quality, **free to purchasers.** See catalog, page 101.

**Vegetable & Flower Seeds**

We send **free** to buyers of $1.00 worth of seeds from our catalog an **extra dollar's** worth of the varieties **we** consider to be the best of their class. See catalog, page 3.

**The Marvelous Perfume Plant**

This is one of the most wonderful plants earth holds for our delight. It opens in the evening and exhales a delicious and far carrying fragrance—perfuming the whole garden. Easily grown in any climate and on any soil.

**For 10 cents we will mail a full size packet of seed of the perfume plant and**

**Our 1908 Catalog**

A seed catalog is a picture of the firm issuing it. Ours is factful, informing and straightforward. That's the kind of business we conduct. Write today and tell us your seed needs—we can supply them. **Send for catalog anyway; it's free.**

TRADE MARK

**NORTHRUP, KING & CO.**
**SEEDSMEN**

**119 Hennepin Ave., Minneapolis, Minn.**

**FIFTY MILLIONS OF**

Hardy Evergreens $4.00 and up per 1,000. 50 wonderful bargain lots for 1908, quality the highest, prices the lowest of all, $1.00 to $10.00 per 100 prepaid. Pedigreed trees, not wild, but **NURSERY GROWN AND GUARANTEED.** Also full line Fruit, Forest, Shade, Ornamental Trees and Shrubs. Get my Free Catalog and Bargain Sheet. Don't buy till you've seen it. A beautiful Red Cedar Tree free with every order.

**D. Hill, Evergreen Specialist, Box 87, Dundee, Ill.**

A beautiful colored plate of our

**New Eaton**

**Red Raspberry**

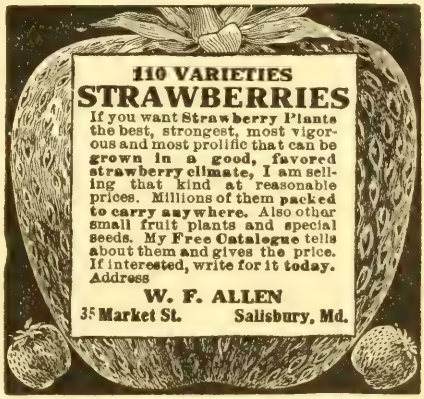
and our strawberry catalog of valuable information about varieties with instructions for beginners. Free to all.

**THE FLANSBURGH & POTTER CO., Leslie, Michigan.**

Seven splendid new varieties hardy Northern grown apples. Specially adapted to the Northwest. Winners of Wilder Medal, highest award in U. S. Rapid growers, big yielders, good keepers and shippers. Money makers for fruit growers. Also,

**NORTHERN GROWN**

shade and ornamental trees for group, specimen, or windbreak planting. Especially for locations where only hardy stock will thrive. For 5c for postage and packing, we will send beautiful Hybrid Perpetual Rose and illustrated catalog with full description and prices free. **Charles City Nursery & Orchard Co., Box 20, Charles City, Ia.**



**110 VARIETIES**

**STRAWBERRIES**

If you want **Strawberry Plants** the best, strongest, most vigorous and most prolific that can be **grown in a good, favored strawberry climate,** I am selling that kind at reasonable prices. Millions of them **packed to carry anywhere.** Also other **small fruit plants and special seeds. My Free Catalogue** tells **about them and gives the price. If interested, write for it today.** Address

**W. F. ALLEN**

**35 Market St. Salisbury, Md.**

**The Best Strawberries**

grow from Farmer's plants. Introducer of "Oswego" strawberry and "Plum Farmer" raspberry. Fruit plants, all kinds. Catalog free. **L. J. Farmer, Box 808, Pulaski, N. Y.**

**A New STRAWBERRY**

We have been growing and selling strawberry plants in this town over thirty years. We introduced Brandywine, Kitty Rice, Senator Dunlap, Wm. Belt, and others of value. . . Now we are bringing out the **Highland** which we expect to take the lead as a **Money-maker**

Let us tell you about it and forty others. It will cost you but a postal card.

**M. Crawford Co., Box 1004, Cuyahoga Falls, Ohio**

**Peach Trees** Large stock; all straight, healthy, well-rooted trees. *Free catalog.* Freight paid. *Agents wanted.* **Special Prices to clear ground.**

**W. T. Mitchell & Son, Beverly, O.**

# Send Your Name to Johnson

INCUBATOR MAN

Right now and get a copy of his new, big, free Incubator Book, describing in detail Johnson's Famous

## "Old Trusty" Incubators & Brooders

"Old Trusty" has been successful in the hands of more inexperienced beginners than any other incubator ever made. Absolutely automatic—takes less oil, and Johnson guarantees you will get 75 per cent hatches, or better.

## Johnson Pays the Freight and Gives 40, 60 or 90 Days' Trial

Write today for his guaranty and low prices, and get his big book—a poultry book by a man who knows. 176 pages and every page a poultry sermon. More than 300 pictures and more good chicken sense than you ever saw before in any book. Send your name to

**Johnson Pays the Freight** **M. M. Johnson, Clay Center, Neb.**

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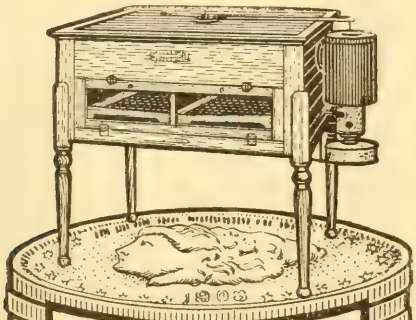

**Model Dollar Makers**

No machines you can buy for your farm will earn as many dollars as

**MODEL Incubators and Brooders**

From its handsome, warmly padded case, and its perfect heating and ventilating systems, its accurate, powerful regulator, the **Model Hatcher** stands unequaled. The **Model Brooders,** with their substantially made cases, their diffusive heating system that imparts a gentle warmth, together with copious ventilation, raise strong, healthy chicks.

Poultry is a profitable crop on farms where **Model** machines are used. If you are not making big money on your chickens, write me today for my book telling how you can. The **Model** equipment and methods assure success.

**MODEL INCUBATOR CO.,** CHAS. A. CYPHERS, Pres. 350 Henry St., **Buffalo, N. Y.**

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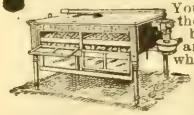
# Incubator Whys

Our new book, telling Whys and Wherefores of Poultry Profits—Why Ertel machines make most for their owners; how hatches are uniformly over ninety per cent with our machines; how we pay freight and why our prices are lowest—will be sent you free.



You owe it to yourself to learn the vast difference in results between Ertel Incubators and others. Please say whether interested in large machines or a small outfit.

**GEORGE ERTEL CO., QUINCY, ILL.**

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# BIGGER POULTRY PROFITS

Our new 128-page Poultry Book teaches the inexperienced and gives the expert many valuable hints. Tells why **"SUCCESSFUL" INCUBATORS AND BROODERS** are best. Offers 14 varieties of fine birds and eggs at low prices. Catalogue free. Booklet on "Proper Care of Chicks, Ducks, Geese and Turkeys," 10 cents. Poultry paper 1 year 10 cents.

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# GET MY LOW PRICES

Before you buy an Incubator. I manufacture in large quantities and sell direct to you.

Miller Pays Freight

## IDEAL Hot-Air and Hot-Water Incubators and Brooders

hatch more chicks and stronger chicks. Send for my big free handsomely illustrated book, **"Poultry for Profit."**

**J. W. MILLER COMPANY, Box 48, FREEPORT, ILL.**

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# Famous Invincible Hatchers From $4.00 Up

**Hot Air or Hot Water**

The safe way to buy an Incubator is on a **Real Free Trial.** Invincible Hatchers are sold that way and results guaranteed. Brooders, Poultry Houses and supplies all at very low prices. **224-page book Free.**

**Write to-day. The United Factories Co., Dept. 138, Cleveland, O.**

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# 125 Egg Incubator and Brooder Both For $10

If ordered together we send both for $10 and pay freight. Hot water, copper tanks, double walls, double glass doors. Our free catalog describes them.

**Wisconsin Incubator Co., Box 97, Racine, Wis.**

# Start Your Wife in the Poultry Business

## Give Her a Sure Hatch Incubator and Let Her Make a Lot of Money Easily at Home

You or your wife fill out the Free Book Certificate and let us send book at once by fast mail, with full information about Making Easy Money with the Sure Hatch. Thousands of other women everywhere spend a few minutes every day in this delightful money-making occupation. Why not give her the opportunity? One hatch pays for the Incubator and leaves a profit. The Sure Hatch never fails. It gets the chicks and they live and grow into dollars quickly, with little care. The Sure Hatch regulates itself and runs itself. Hatches eggs better, quicker, cheaper than hens or other incubators. Guaranteed 5 years. We will ship one to you direct from our nearest warehouse on **Unlimited Trial.** We pay freight. Send Free Book Certificate today or write a postal for the book.

**SURE HATCH INCUBATOR CO.**
**Box 107, Fremont, Neb., or Dept. 107 Indianapolis, Ind.**

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Please send Free Book Telling How to Make Money with the Sure Hatch.

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# $7.15

**Branches**
St. Paul
Buffalo
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**Buys the Best 120-Egg Incubator Ever Made**

**$4.35 Buys the Best 100-Chick Brooder**

Both Incubator and Brooder, ordered together, cost but **$11.00. (Freight Prepaid East of Rockies.)** Incubator is double walled all over, copper tank and boiler, hot-water heat, self regulator, nursery, high legs, glass door. Brooder is the only double walled, hot-water brooder made. No machines at any price are better. Write for our book today, or send the price now under our guarantee and save waiting.

BROODER

**Satisfaction Guaranteed.**

**Belle City Incubator Co. Box 69, Racine, Wis.**

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A Free Book About

# Incubators

We issue the best book ever written on incubators—written by a man who has spent 26 years in perfecting them—by the man who made the Racine. It tells facts that you must know to get the right incubator. Don't buy without reading it, for the book is free. **We Pay the Freight.**

**Racine Hatcher Co., Box 114, Racine, Wis.**
Warehouses: Buffalo, Detroit, Kansas City, St. Paul.

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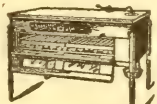

## SUCCESSFUL HATCHES

and healthy, vigorous chicks are always a certainty with

## RELIABLE INCUBATORS

26 years' experience and practical demonstration is crystallized in the **one** perfect machine. Double heating system, double ventilating, economical—all explained in our interesting poultry book. Write today.
**Reliable Incubator & Brooder Co.,** Box B49 Quincy, Ill

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Send for free Catalogue.

**Hatch Chickens by Steam with the EXCELSIOR INCUBATOR Or WOODEN HEN**

Simple, perfect, self-regulating. Hatch every fertile egg. Lowest priced first-class hatchers made.
**GEO. H. STAHL, Quincy, Ill.**

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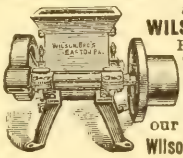
# Make Your Own Fertilizer

at Small Cost with

**WILSON'S PHOSPHATE MILLS**



From 1 to 40 H. P. Also **Bone Cutters,** hand and power for the poultrymen; grit and shell mills, farm feed mills, family grist mills, scrap cake mills. Send for our catalog.

**Wilson Bros., Sole Mfrs., Easton, Pa.**

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## LET ME SHOW YOU

how easy it is for you to build your own Incubators and Brooders with my **Free Plans.** I furnish all parts you can't make. Thousands doing it—not a single failure. Send today for **my free Book of Plans and Catalog.**

**H. M. SHEER CO.,**
**242 Hampshire St., Quincy, Ill.**

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# CHEAP HEN-FOOD

Is green bone fresh cut. Rich in protein and all other egg elements. Its egg producing value is four times that of grain. The eggs are more fertile, chicks more vigorous, fowls heavier. This makes green bone cheap food.

**Mann's Latest Model Bone Cutter.**

Cuts all bone, meat and gristle. Never clogs. **10 DAYS FREE TRIAL.** No money in advance. Cat'lg free.

**F. W. MANN CO., Box 37, MILFORD, MASS.**

"CYPHERS"

You need not waste time and money "experimenting" to make money with poultry now because Cyphers Incubators and Brooders have proved that that's unnecessary, to beginners, experts and Agricultural Experiment Stations. Whether you are an immediate buyer or not, investigate Cyphers patented machines and

MAKE MONEY FROM POULTRY. Our 212-page Free Catalog possesses illustrations of all necessary down-to-date poultry supplies manufactured by us. Write for it. Address nearest office.

CYPHERS INCUBATOR COMPANY, Buffalo, N. Y.

New York; Boston; Chicago; Kansas City; Oakland, Cal.; London, Eng.

$7.50

Complete 50-egg all metal Hatching & Brooding plant for only $7.50. The only machine made that does the work in the natural way. Once filling the lamp hatches the eggs and broods the chicks

METAL MOTHERS

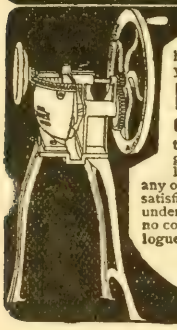
Our new system $1.00 Brooder works to perfection. No danger of fire, overheating or chilling the chickens. Let us tell you about our new way of keeping poultry to get the largest profits. Catalogue free.

Cycle Hatcher Co., 223 Wm. St., Elmira, N. Y.

2 HATCHES FREE
And a 5 Year Guarantee

Most liberal offer ever made. Wholesale price. $3 to $8 saved. Thousands of users recommend Gem Incubators and Brooders as the favorite. Book "Poultry Profit and Proof," tells why. Sent free. THE GEM INCUBATOR CO. Box 53. Trotwood, Ohio.

WINTER EGGS



Feed cut green bone; save half your grain and double your egg yield. The

Humphrey
Green Bone & Vegetable Cutter,

the only open hopper machine, is guaranteed to cut more bone, with less labor and in less time than any other. Money back if you are not satisfied. It's the one hand cutter; feed under operator's control at all times; no complicated parts. Send for catalogue and special Trial Offer.

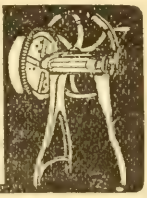
HUMPHREY,
Mine St. Factory,
Joliet, Ill.

$5 AND UP

NO MONEY IN ADVANCE

The "Dandy" is the easiest operated, best built, fastest cutting green bone cutter made. Sold on 15 days free trial with a broad guarantee. If it suits keep it, if not, send it back. Free catalog.

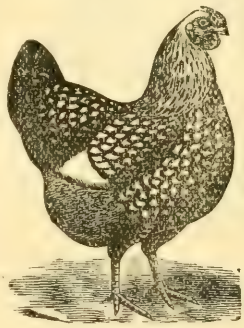
Stratton Mfg. Co. Box 54. Erie, Pa



MAKE GOOD MONEY

In Poultry business. Others do it. Why not you? Our big illustrated book, "Profitable Poultry," tells how to breed, hatch, feed, grow and market to make lots of money. Starts you on the road to success. Describes most wonderful Poultry Farm in the world—32 kinds of fowls. Gives lowest prices on fowls, eggs, Incubators, everything for Poultry. Mailed for 4 cents in postage. Berry's Poultry Farm, Box 53, Clarinda, Iowa.

The INDUSTRIOUS HEN



The Leading

Poultry Journal

of the South.

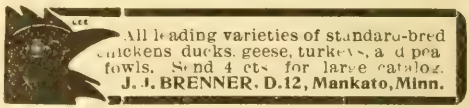
Every Farmer and Chicken-raiser Should Read It.

50c One Year; Three Years, $1.
(Sample Free)

The Industrious Hen Co.,
617 Gay Street. Knoxville, Tenn.

DON'T WORRY OVER MONEY MATTERS but send for sample copy of Inland Poultry Journal and let us tell you how to make money out of poultry. Two full pages in colors, reproductions from oil paintings that cost us $1000.00. They are FREE.

Inland Poultry Journal Company
15 Cord Building, - Indianapolis, Ind



All leading varieties of standard-bred chickens ducks, geese, turkeys, and pea fowls. Send 4 cts for large catalog.

J. J. BRENNER, D.12, Mankato, Minn.

40 BREEDS. Fine pure-bred chickens, ducks, geese, and turkeys. Northern raised, hardy, and very beautiful. Largest poultry farm in the Northwest. Fowls, eggs, and incubators at low prices. Send four cents for fine 76-page 14th Annual Poultry-book.

R. F. NEUBERT, Box 778, Mankato, Minn.

## Classified Advertisements.

Notices will be inserted in these classified columns at 20 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Concrete Molds.

Do you want to increase your income? We have just the thing for all cement-workers, and others who can give all or part of their time. Our molds are designed for concrete burial-vaults, and these vaults are in increasing demand all over the country. Get a set of our molds and secure the business in your vicinity. Our molds are adjustable, making nine sizes of vaults, besides are adapted to a large range of other work, such as watering-troughs, and other articles on the farm or around the place.
Illustrated catalog free.
INDIANA CONCRETE BURIAL VAULT CO.,
442 Board of Trade Building, Indianapolis, Ind.

## Wanted, Situations.

WANTED.—Position in an apiary for season of 1908.
FRED GEO. BANKER, Sleepy Eye, Minn.

WANTED.—Position by a young man of good habits to work with bees. Two years' experience. Western States preferred. ALFRED STRUCK, Webster, N. Y.

WANTED.—Position in apiary for the season of 1908. Seven years' experience; young and temperate
FRANK MORGAN, Elk River, Minn.

WANTED.—Position in apiary; 15 years' experience; up to date, and understands queen-rearing; would like position to work into partnership. State wages, etc.
BEEKEEPER, care of Osborne,
1156 Clement St., San Francisco, Cal.

## Help Wanted.

WANTED.—Middle-aged bee-keeper to work on salary, or part salary and percentage of honey crop. Address with references,
DR GEO. D. MITCHELL & CO., Ogden, Utah.

WANTED.—Honest faithful man to work with bees. But little experience required, but must be willing to work any place. Low wages to begin, but steady work and opportunity to work up for right man.
THE ROCKY MT. BEE CO., Berthoud, Colo.

WANTED.—We should like to secure the services of a young man who wants to learn the comb-honey business in the West. Large experience not necessary, but must be willing to learn and not afraid to hustle.
MOUNTAIN VIEW APIARIES, Platteville, Colo.

WANTED.—To an intelligent, active young man having a little experience with bees, and using neither liquor nor tobacco. I will pay $25 00 a month and board, with as good an opportunity to learn the bee business as can be had in this country. My last year's crop was over 50,000 lbs. Write immediately, with references, to E. F. ATWATER, box 37, Meridian, Idaho.

WANTED.—A cook, near Wasco, Kern Co., Cal., on a ranch. From 8 to 20 men at different seasons of the year, besides the superintendent's family of four or five. A woman preferred, or a man and wife—the woman to cook and the man to work on the ranch. Current wages given. References required. A Christian preferred. J. E. ANDERSON,
Supt. Palm Fruit Co., Wasco, Cal.

## Post Cards.

Send us any picture and we will copy it on one doz post cards, and return with original, for 50 cts., postpaid. ACME POST CARD CO., Medina, Ohio.

Samples of Valentine post cards, comic and fancy, at 15 and 25 cts. per package. Money back if not satisfactory. Order sample early, and you can get more of same kind if you desire. M. T. WRIGHT, Medina, O.

Your photo copied on one dozen postal cards, and photo returned uninjured, with cards 50 cts. Finest black and white; no trashy red or brown finish; guaranteed permanent. Fancy etching of your name on each, 10 cents extra. Groups will be copied at same rate—2½ dozen, $1.00. SANDUSKY ART STUDIO,
Sandusky, W. Va.

## Poultry Offers.

WHITE ROX.—"Fishel's" stock and eggs. Write your wants. DR. C. L. VAN OSDOL, Dillsboro, Ind.

FOR SALE OR EXCHANGE.—Trios of S. C. R. I. Reds. MR. AND MRS. E. G. CROSLEY, Farina, Ill.

FOR SALE.—25 choice Rose Comb White Leghorn cockerels, $1 each. WILBER WOOD, R.2, Rock Elm, Wis.

FOR SALE.—Silverlaced and White Wyandottes. Single and Rose Comb R. I Reds, choice stock, eggs $2.00 per 30. CHAS F. L. CLEMONS, Rt.3 Davenport, Ia.

FOR SALE.—Eggs, White Wyandotte, $1 per 15; $6 per 100. White Holland turkeys, $2 per 9.
FRANK C. PELLETT, R. D. 4, Atlantic, Iowa.

FOR SALE.—White Wyandottes. Egg-record strain: standard-bred, farm-raised, unlimited range; healthy, vigorous, prepotent. Eggs, $1.50 per 15.
F. H. TRENT, Hollybrook Farm, Rockford, Tenn.

## For Sale.

FOR SALE.—A ten-inch Dunham mill for $9.00 or wax. BOX 37 Altamont, N. Y.

FOR SALE.—Opaline honey-jars, all kinds; send for price list. HAROLD E. SHORE, Germantown, Pa.

FOR SALE.—Strawberry-plants. Send for catalog. BUSKIRK BROTHERS' NURSERY, Independence, Ohio.

FOR SALE.—One Root-German steam wax-press, and one Salamanderine automobile boiler.
D. H. MORRIS, Springfield, Ohio.

FOR SALE.—Homestead farm crops in their season, consisting of honey, grapes, pears, apples, etc.
C. J. BALDRIDGE, Kendaia, Seneca County, N. Y.

FOR SALE.—500 second-hand 8-frame L. and Heddon hives in good condition, at 40 cts. each, f. o. b. Sandusky, Mich. H. & W. J. MANLEY, Sandusky, Mich.

FOR SALE.—Beautiful long-haired Angora and Persian kittens, some white and other colors. Prices low. Stamp for description.
MRS. J. F. SKEES, Marion, Ohio.

FOR SALE.—Special sale of half a million of best Wisconsin sections; thousands of shipping-cases; big discounts on all supplies till February 1. Seeds of honey-plants. Write at once. H S. DUBY St. Anne, Ill.

FOR SALE.—Honey-cans used but once, emptied without steam or water, bright and clean; 100 cases or more, per case two cans, 25c; 50 cases, 30c; 25 cases, 32c; less, 35c. E. R. PAHL & CO., Milwaukee, Wis.

FOR SALE.—*Dried Fruit*, California to consumer, direct from where produced; wholesale prices; finest quality, fresh packed. Write for prices.
CALIFORNIA PRODUCTS CO., DEPT. 27, Colton, Cal.

FOR SALE.—One Humphrey bone-cutter, good as new, cost $12.50, price $9.00. One Chas. Cypher's 150-egg Model incubator, bought new last season; price $16.50. HARLEY CONDRA, Seymour, Iowa.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS, (Root's Goods.) Paden City, W. Va.

FOR SALE.—Big stock bee-supplies, small profit. Big discount for the next 60 days, to make room for 1908 stock. Take Root Co.'s and Marshfield Mfg. Co.'s illustrated price list for 1907, if you have one; if not, send for them at once. S. D. BUELL, Union City, Mich.

FOR SALE.—4x5 Premo "Film Plate" camera, 3 plate-holders, film-pack adapter, tripod, Todd's 1st and 2d Steps in Photography. Good condition; cost $30.00; $20.00 takes the outfit. E. F. ATWATER, Box 37, Meridian, Idaho.

FOR SALE.—Cabbage-plants. Early Jersey Wakefield, open-air and field-grown; tied in bunches of 25 each; 12 to 15 days earlier than hot-bed or greenhouse plants; fine and stocky, and well rooted—1 to 5000, $2.25; 6000 and over, $2.00. J. C. CLOYES, R. F. D. 5, Union City, Obion Co., Tenn.

## Bees and Queens.

FOR SALE.—All who intend to buy bees, queens, and hives, should write postal for Charles W. Zweily's 1908 catalog. CHARLES W. ZWEILY, Fremont, Ohio.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. Choice melilotus (white sweet clover) seed for sale at eight cents per pound. W. P. SMITH, Penn, Miss.

EARLY ORDERS booked now for delivery after May 1st. Best Italian bees, $6.00 per colony. Two-frame nucleus, $2.00. Queens, tested, $1.00; doz., $11.00. Untested, 75 cts.; doz., $8.50. Virgins, 40 cts.; doz., $4.50. Cash orders filled first. GEO. H. REA, Reynoldsville, Pa. Rt. 2.

## Real Estate for Bee-keepers.

FOR RENT.—$3.00 per month to bee-keeper; 1½ miles from Burg Hill, Trumbull Co., Ohio. House, barn, and garden. R. F. D., telephone, centralized school. Address R. M. PATTERSON, 315 Bryant Ave., Syracuse, N. Y.

FOR SALE.—Farm of 237 acres, 100 cleared and suitably divided; water in every field; *good* dwelling—$2000.

Farm of 130 acres, 30 good bottom land, 30 upland, tillage, and pasture; timber estimated at 100,000 feet; log house of three rooms—$2000. Bargains at above prices. B. F. AVERILL, Howardsville, Va.

FOR SALE—On easy terms, a nice little poultry-farm of seven acres, with poultry-houses to accommodate 200 to 300 fowls; a five-room house, barn, and other out-buildings, with a carpet-weaving shop 16x20, and a fly-shuttle loom in good order and plenty of work; also 10 or 12 colonies bees with good extractor and other fixtures. Good chance to make money, for the right party who can handle it all successfully. C. P. IMHOFF, Rt. 1, West Salem, O.

## Wants and Exchange.

WANTED.—Refuse from the wax-extractor, old combs, or slumgum. ED YOUNG, Boonville, Mo.

WANTED.—The address of some person who would let his bees on shares—California preferred. State number of colonies, and conditions. PERRIN, 417 S. Flower, Los Angeles, Cal.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—Names of parties having bees to sell in South. Give price. Would like to correspond with bee-keepers on or near the Ohio, Cumberland, and Tennessee rivers. W. W. CRIM, Pekin, Ind.

WANTED.—To trade stock of jewelry for bees. Stock is of watches, clocks, fancy chinaware, rings, and other goods in the jeweler's line; also bench-tools, lathe, gravers. What have you, within shipping distance of Illinois? JOHN H. KOONTZ, Stewardson, Ill.

## Honey and Wax Wanted.

WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 S. Water St., Chicago, Ill.

WANTED.—To buy basswood, clover, and amber extracted honey for cash. Best prices paid. Send sample, and quote price delivered in Preston. M. V. FACEY, Preston, Fillmore Co., Minn.

WANTED.—No. 1 and fancy comb honey; 4x5x1⅜ section preferred. Also light extracted. Must be guaranteed pure. Write, stating grade and how put up, and lowest cash price. C. M. CHURCH, Arnold, Pa.

## Honey and Wax For Sale.

FOR SALE.—2000 lbs. honey at 10 cents per lb. f. o. b. anywhere. B. F. AVERILL, Howardsville, Va.

FOR SALE.—36 cases of comb honey in 4¼ and 4x5 plain sections. Clover and raspberry. E. D. TOWNSEND, Remus, Mich.

FOR SALE.—White-sage honey, case, 125 lbs. net, 9 cts. per lb.; 3 cases at 8½. Light amber, 7 to 8¼. I. J. STRINGHAM, 105 Park Place, New York City.

FOR SALE.—Alfalfa extracted honey in 60-lb. cans, 8 cts. per lb., f. o. b. Kansas City; sample sent upon request. One thousand pounds of beeswax for sale at 27 cts. per lb. C. C. CLEMONS & CO., Kansas City, Mo.

FOR SALE.—Buckwheat and amber comb honey, $3 per case; 12 cases, $2.85; 25 cases at $2.70 per case; 24 sections to case; dark amber extracted at 7½ cts. per pound in 60-lb. cans. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans. ROBT. A. HOLEKAMP & SON, 4263 Virginia Avenue, St. Louis, Mo.

## Bee-keepers' Directory.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa.

QUEENS.—Clover stock. Experience and methods count. Write me. H. G. LARUE, LaRue, Ohio.

ITALIAN queens bred for honey, untested, 75c each. GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Extra honey queens and choice mountain honey. Francis J. Colahan, Bernardo, San Diego Co., Cal.

QUEENS.—Pure Gold, Red-clover, Caucasian, Banat. ROSE LAWN APIARIES, College View, Lincoln, Neb.

ITALIAN QUEENS.—Golden and leather, 60c each; worth $1.00. G. W. BARNES, Box 340, Norwalk, O.

Bee-keepers' supplies, Italian queens. Send for a free catalog. ARTHUR RATTRAY, Almont, Mich.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Neb.

ITALIAN BEES and queens—Red-clover strain imp'd mothers. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIAN BEES, queens, and Root's bee supplies. E. SCOGGIN, Carlsbad, N. M.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES and queens—red-clover and golden strains. E. A. SIMMONS, Greenville, Ala.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list free. B. F. YANCEY & SON, Angleton, Tex.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

FOR SALE.—Golden and red-clover Italian queens. WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

ITALIAN QUEENS by return mail or money refunded. Circular free. D. J. BLOCHER, Pearl City, Ill.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted. W. E. TRIBBETT, Staunton, Va.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

ANGEL is breeding his Golden beauties and bright three-banded Italian queens, but will not offer any for sale this season, on account of not being at home at all times of the season. SAMUEL M. ANGEL, Evansville, Ind.

IMPROVED ITALIAN bees and queens ready in May. Circular and testimonials free; second-hand surplus arrangements for 4¼ sections, also folding cartons, cheap if taken soon, or will exchange. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

# Bee and Poultry Supply House.

We are now in position to offer the bee-keepers of Northern New York a full line of Bee and Poultry Supplies, etc., including Incubators, Brooders, Rochester Spray Pumps, Asphalt Roofing, etc. Catalog on request.

**A. H. REEVES & CO.,**
**411 Main St, Watertown, N. Y.**
**Both Phones.**

Clover seeds are advancing, and prices in our seed catalog no longer hold good. Write for prices if interested. If any one has alsike seed for sale send sample stating quantity and price.

### FLORIDA STATE FAIR.

The Florida State fair will be in progress from Feb. 5 to 22, at Tampa. Mr. A. I. Root expects to be in attendance on the 11th and 18th, and may be found at the Manatee Co. exhibit. He will be pleased to meet any bee-keepers, or readers of GLEANINGS, who may be there on those days.

### CARTONS FOR OUNCE CAKES OF BEESWAX.

We can supply cartons for one-ounce cakes of beeswax, printed with name and address blank, at 35 cts. per 100; 250 for 80 cts.; 500 for $1.50; 1000 for $2.75; by mail, 15 cts. per 100 extra These prices will also include the large carton to contain 32 of the small ones. The complete package weighs 2 lbs., and, when filled, sells to the dealer at $1.00. They retail the cakes at 5 cts. each. Retinned molds for molding ounce cakes cost 35 cts. per dozen; by mail, 40 cts; for two-ounce cakes, 40 cts.; by mail, 50. We do not have cartons to fit the two-ounce cakes. To print your name and address on the cartons will add, 250 or less, 50 cts.; 500, 75 cts.; 1000, $1.00.

### A BARGAIN IN DANZ. SUPERS AND SHIPPING-CASES.

We offer at a special bargain 190 Danzenbaker ten-frame supers, nailed and painted, filled with section-holders, Hyde-Scholl M fences, sections with full sheets of foundation. They have been used, but are nearly new and in good condition. Such supers new are listed in our catalog at $1.75 each, yet we offer this lot crated and on board cars at Floresville, Texas, at 50 cts. each for the lot, and will throw in 1500 4x5 sections to make good any in the lot which may be broken or missing. In lots of not less than ten the price would be 60 cts. each; 50 at 55 cts. each as they are crated and loaded on cars. There are also 500 shipping-cases to hold 20 4x5 sections in the crates as shipped from the factory, which we would sell at $5.00 per crate of 50, or $9.00 per 100 for the lot. That is, $140 cash for goods worth new at carload prices over $340. This surely is a bargain for any one desiring to produce fancy comb honey with equipment that can not be excelled for the purpose. They are not in the right locality for comb-honey production, but should work excellently in some other location. Send your orders here to Medina.

### HOTBED SASH AND GLASS FOR THE SAME.

We have made an improvement in our hotbed sash by adding a round rod of hard wood through the center from side to side midway between the ends. Some bars are inclined to warp, making it more difficult to fit in the glass; also in lifting the sash by the side rail it may spring and loosen the glass. By the addition of the rod, with a nail driven through at each bar, after all are properly spaced, these objections are overcome. We are also making them standard width, 3 ft. 4 in. wide for four rows, 8-inch glass. We can also furnish them 3 ft. wide for three rows of 10-inch glass, or 3 ft. 6 in. for three rows of 12-inch glass on special order. As regularly furnished they are grooved for glass to be butted together, the joint to be closed with liquid putty. We also furnish them rabbeted so the glass may be lapped if so ordered.

Price of regular-size sash, 90 cts. each; $4.25 for 5, or $8.00 for 10, shipped in flat, not put together. If put together not painted, add 10 cts. each. If put together, painted two coats, add 30 cts. each; glazed with 8x10 glass, add $1.00 for each sash at present price of glass. We can offer 8x10 glass at present for $2.40 per box; 5 boxes at $2.30; 10 boxes or more at $2.20 This is a very low price, due to a recent cut in price of glass, and is not guaranteed for any length of time. If in need of sash or glass, send in your orders while the present low price holds good.

THE CELL THAT SELLS AND EXCELS IS FOUND IN

DADANT'S FOUNDATION

DADANT'S FOUNDATION DADANT'S FOUNDATION

and

BEE SUPPLIES

DADANT & SONS.
Hamilton, Ill.

WHILE BEE-KEEPING is almost as old as creation itself, modern apiculture dates back hardly more than fifty years, and the period of greatest activity in the development of our present systems was twenty to thirty years ago. Many of the old writers of those most interesting days are still with us, and they will write special articles for the March number of

The American Bee-keeper

(next month), which is to be an "Old Boys'" number; and the pictures of the writers will also appear in connection with what they have to say in their reminiscent letters. This number will contain forty pages, profusely illustrated and highly educational. THE AMERICAN BEE-KEEPER is in its 18th year. Subscription 50 cents per year, or three years for $1.00 in advance.

The American Bee-keeper, Falconer, N. Y.

# DEEN LOOM

# Flying Shuttle

WHY not put your spare moments to work bringing in extra cash? Some people in your town are waiting for some one to make up their rags into carpets, rugs and portieres.

It's genteel, honest work that any man or woman can do and make good profit at it. Just to prove it, here are the names and addresses of fifteen out of hundreds of people who have woven carpets and rugs at a good profit. They use a **Deen Loom.**

## Good Profits Made At Home

Mrs. C. R. Stover, Bradford, Ohio
Oma Cooper, Dale, Indiana
R. P. McGowan, Piedmont, W. Va.
Mrs. Rob. Record, Seymore, Illinois
Mrs. Henry Clark, St. Anthony, Iowa
Mrs. A. L. Clark, Central Square, N. Y.
Mrs. H. C. Blanahet, New Lathrop, Mich.
Mrs. T. E. Alley, Sylvan Grove, Kansas
Mrs. O. E. Albin, Kearney, Nebraska
Mrs. H. Goebel, West Point, Iowa
Mrs. J. S. Gilbert, Milton Junction, Wis.
Mrs. L. E. Foster, Bedford, Indiana
Mrs. Salanda Gunckel, Osgood, Ohio
Mrs. D. E. Williams, Pickering, Missouri
M. H. Vining, Waterloo, Iowa

Remember these are only fifteen of scores and hundreds who at this moment are hustling out work and getting good money for it.

## You Who Read This

Haven't you often wished for a useful employment by which to make money in your spare hours? No doubt you know of people who would gladly pay you for weaving their rags into carpets and rugs.

It's not only the poorer people that have hand-woven carpets and rugs on their floors, but well-to-do people of city, village and country-side appreciate the handsome and useful products of home-weavers.

By canvassing among your friends you can work up a good business. Profitable, too. Besides, it's done at home with the children, where you can have an eye on everything in house and yard.

## It's Not Hard Work

Weaving with a **Deen Loom** is soon learned. The Loom itself is a simple affair, easily handled, and soon understood. May Vittum, Barclay, Kansas, says:

"I can weave almost twice as much as I could with the old loom. I would not go back to the old one for anything. The new one is faster, easier, and does the best work."

Having a steel frame well-braced, and rigid, it resists the shock and stroke of the shuttle mechanism, remaining solid for years without repairs.

It will accomodate any size rug or carpet demanded.

## What May Be Woven

Any design can be made in any number of colors that taste and fancy may dictate. You can weave rugs, hammocks, all kinds of hand-weaves, carpets, portieres, etc. The materials to use are common carpet warp which can be purchased of any dry goods store; carpet rags, old clothes of any kind, old ingrain and brussels carpets, blankets, or nearly any kind of fabric. Your customers furnish you all material; you do the weaving and get good pay for it.

## A Few Prominent Reasons for Buying

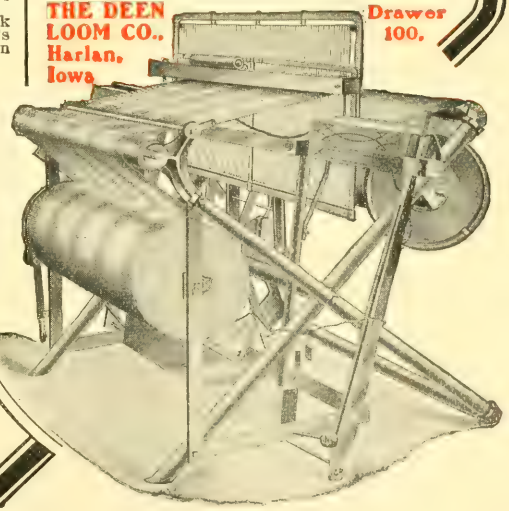
1.—You can make from $2 to $3 a day if you weave 8 hours daily.
2.—You can make from $4 to $10 a week using only part of your time—say evenings after work and an hour in the morning.
3.—We help you personally by letter if you wish. But this is seldom necessary, because we send you simple, detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
4.—The Fly-Shuttle is easily filled, quick to handle, doesn't bother.
5.—The Winding Mechanism and Feed-Governor are new improvements. The latter keeps the warp and weft mechanism within control. It saves much material and prevents hours of thrown-away time used by old-style looms.
6.—It takes up much less room than many other styles. It requires a room but 10 feet square for a complete weaving shop.
7.—We send you everything with the Loom. You can go right to weaving as soon as you get warp and rags.

## You Needn't Pay All At Once

Pay something down. As Loom brings in profits send balance by easy installments.

Fill in the coupon and mail. We'll send our free catalog and a letter about our easy-pay plan.

**THE DEEN LOOM CO., Drawer 100.**
**Harlan, Iowa**



**COUPON**

Deen Loom Co.:— Date.....19....

Please send me your free catalog and detailed explanation of your "Easy Pay Plan" of selling your Deen Loom.

Name.....

Address.....

Town.....State.....

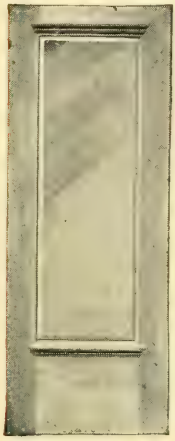
# Build Your House At Half Price.

## Write To-day for Our Grand Free Millwork, Roofing, and Paint Catalogs, and See How You Can Save Half

Why pay double prices for Sash, Doors, Blinds, Mouldings, Interior Finish, Paints, Roofing, and Other Material? *You can buy from Gordon, Van Tine Co. at wholesale prices and build your home at half usual cost.* Every item described in our Free Catalogs is a real bargain—averaging 50 per cent less in price than retail dealers charge. Here are a *few examples* of the big savings on every article offered. *We guarantee that every article we ship is up to the Standard of High Quality required by the Official Grade adopted by the Sash, Door, and Blind Manufacturers' Association of the Northwest.*

Our financial responsibility is well over $300 000 and we enjoy highest credit with Western Financial Institutions. Look us up through your local bank or the Commercial agencies.

We own our own timber lands, saw-mill, and lumber yards. We carry an immense stock and ship promptly, loading directly from warehouse platforms to cars. *Safe delivery guaranteed.* We do the largest millwork business in the country and sell our entire output by mail order—direct to individuals, at half the local dealers' prices, freight included. We sell nothing through dealers.



Westchester Door, $10.75.

### Weschester Door.

**Only**

**$10.75**

The highest art known in fine doormaking. No. R 101 W. P. Size 2-8 x6-8—1¾ in.—Glazed. Polished Bevel Plate Glass, only $10.75. (Dealers' price, $22.00.) We pack carefully. Crate in paper, and ship promptly.

Venus Art Windows, $3.99.

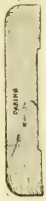
**Venus Art Window, $3.99.** This beautiful Art Window No. R 223 has top glazed with clear leaded crystal sheet; bottom clear, double strength "A" quality glass Size of opening, 3-8x5-0—1¾ in. thick—only $3 99. (Dealers' price, $8 00.) All sizes and styles of Art Windows carried in stock

### Colonial Sash.

**No. R 238½.** 2 light windows—1¾ in. thick. To partistically divided as shown in sketch. Size of glass, 20x24 Size of opening, 2-0⅛x4-6. Glazed Double Strength Price, $2 25. All sizes carried in stock for quick shipment at a saving to you of over 75 per cent.

Colonial Sash, 80c.

**Oak Side Casing. $3.32 per 100 lineal feet.** No. R. 8309 Plain Red Oak Size 13-16x4¼ in.



The most popular design. Used in all modern houses. Price is per 100 lineal feet, in random lengths from 8 to 16 feet.

### Veneered Oak Door.

**$3.36**

Six cross panel—size 2-8x6-8—1¾ in.—$3.36. (Dealers' price $7.00.) Hardwood veneered doors and hardwood trim will add refinement and increase value of your home. **"Finish Your Home in Oak at Small Cost."** Free Catalog quotes correspondingly low prices on Hardwood Trim.

$3.36 Veneered Oak Door.

**Red Oak Stair Newel, $3.10.** (Yellow pine, $2 90.) This handsome newel No. R 336 is hand-smoothed and made from thoroughly kiln-dried stock. Glued lock joint. Height 4 ft. Base 8x8. Shaft, 6x6. Every Newel wrapped in paper and carefully packed. Complete line of high-grade stair and porch work at bargain prices.

Red Oak Newel, $3 10

**Oak Plate Rail No. R. 215.** 7 cts. per foot (Yellow pine, 4c.) Adds beauty to any dining room. Picture Molding underneath Oak finish lends "tone" to any home. We sell "everything in moldings."

**Hardwood Flooring No. R 295 Red Oak.** ¾x1½ inches. **80c per 100 lineal feet.** Makes best possible covering for old floors. Costs no more than a good carpet. No. R. 292 **Plain Red Oak**—13-16x2¼ inches, $57 per 1000 square feet. We polish, end match, tongue and groove and bundle this flooring. Bored for blind nailing. For beauty and style, comfort and economy, nothing equals hardwood flooring. This hardwood flooring outlasts a dozen carpets. We ship every bundle wrapped in paper.

Hardwood flooring, 80c.

Our complete Catalog quotes lowest prices on high grade Hardwood Finish for the finest interiors.

## Millwork, Roofing and Paint Catalogs FREE

Over 5000 wonderful bargains. We want to place in your hands **free copies** of our great money-saving catalogs so you can benefit by our extraordinarily low prices, prompt shipments and absolute guarantee of satisfaction. **Book of Plans FREE,** showing interiors, floor plans, stairways, etc., of city and country homes, also barns and outbuildings of all kinds. All plans drawn to scale. Send 10 cents in stamps to cover cost of packing and postage. Address

## Gordon, Van Tine Co., 674 Case Street, Davenport, Iowa.

# Gleanings in Bee Culture

Apiary of Jas. W. Bain, Marion, Ohio. Mr. Bain in the foreground.

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI February 15, 1908 No. 4

# $500.00 ACCIDENT INSURANCE POLICY FREE!

## FARMERS' INSURANCE THAT REALLY INSURES.

You may have had other chances to buy accident insurance that would protect you in elevators, on steamboats, and automobiles, but this is *the first chance you have ever had* to get real protection in your ordinary work. This NEW $500.00 POLICY was secured from the North American Accident Insurance Company, of Chicago, Ill., (Surplus $331,498.66) the largest company in America handling this class of policies, after long negotiations. It took three months to induce the company to write the special features that were required to make it valuable for rural people. By buying the policies outright in very large quantities, it is now possible to offer it FREE with this remarkable practical combination of magazines.

GLEANINGS IN BEE CULTURE, $1.00
the bee-keepers' favorite paper,

FARM JOURNAL (five years), .75
the standard farm paper of the world,

GARDEN MAGAZINE—FARMING, 1.00
a most beautiful, practical horticultural magazine.

INSURANCE POLICY . . . 1.00

$3.75

**All for $2.**

These magazines, if paid for separately, would cost you $2.75, but we can sell ALL THREE MAGAZINES with the NEW INSURANCE POLICY for ONLY $2.00. This is because the three publishers have combined for a subscription campaign. If each one sent you a separate letter it would cost us just three times as much as where we offer all three together. THE SAVING GOES TO YOU.

If the policy is not wanted we can substitute any of the following: "Designer," "Housekeeper," "Ladies' World," "McCall's Magazine," "Mother's Magazine," or the Garden and Farm Almanac.

## WHY SHOULD YOU HAVE THESE PAPERS?

**BECAUSE** GLEANINGS IN BEE CULTURE is the great paper in America devoted to bees and honey. If you have bees, or are going to get them (and everybody who lives in or near the country should have bees), you need the most reliable and latest information, and you want at the same time the simplest directions possible. You want the bee business in a nutshell, and that is what GLEANINGS will give you. For the beginner or the most expert it is equally valuable.

**BECAUSE** FARM JOURNAL is far and away the foremost farm-paper in the world, a boiled-down, practical, helpful, entertaining monthly, built to make the rural homes of America more happy, prosperous, and contented, and already doing it for more than 500,000 homes. For farmers, villagers, or suburbanites.

**BECAUSE** the most beautiful garden and horticultural publication in the world is the GARDEN MAGAZINE, full of sound sense, beautiful engravings from photographs, and fine printing. It has ten issues at 15 cents each and two at 25 cents each, per year, and the subscriber gets his money's worth twice over. It is a delightful magazine, useful, stimulating, and ornamental.

## WHY SHOULD YOU HAVE THIS INSURANCE?

Because you are in danger, every moment, of an accident which may cripple you for weeks, months, or for life; because the loss of an eye, a hand, or a foot, may mean destitution for yourself and your family; because this protection, for a full year costs you nothing whatever.

**WHAT THE POLICY PAYS:**

| | |
|---|---|
| **For Loss of Life** | $500.00 |
| **For Loss of Both Eyes**, meaning entire and permanent loss of the sight of both eyes | 500.00 |
| **For Loss of Both Hands**, by actual and complete severance at or above the wrist | 500.00 |
| **For Loss of Both Feet**, by actual and complete severance at or above the ankle | 500.00 |
| **For Loss of One Hand and One Foot**, by actual and complete severance at or above the wrist and ankle | 500.00 |
| **For Loss of One Hand**, by actual and complete severance at or above the wrist | 125.00 |
| **For Loss of One Foot**, by actual and complete severance at or above the ankle | 125.00 |
| **For Loss of One Eye**, meaning entire and permanent loss of the sight of one eye | 50.00 |

Provided such loss shall result within thirty days from date of accident, from accidental bodily injuries, solely and independently of all other causes, and covers accidents as follows:

Being thrown from a mower by horses.
Being knocked down in the road by a wagon or automobile.
Being hurt in a bicycle accident or collision.
Being hurt while operating corn-sheller, fodder-cutter, etc.
Being caught in a burning building, house, or barn.
Being hurt in an elevator or any public conveyance—train, trolley, boat, etc.
Being injured in a runaway.
Being frozen or frostbitten.
Being injured by robbers or burglars.

Should the Assured obtain injuries *in the manner specified above*, which shall not prove fatal, but which shall immediately, continuously, and wholly disable and prevent the assured from performing each and every duty pertaining to any business or occupation, the Company will pay the Assured FIVE DOLLARS PER WEEK during the time of such disablement, but not exceeding six consecutive weeks for any one accident.

## NO DELAY OR EXAMINATION.

The insurance goes into effect as soon as you receive the policy and mail back the coupon attached to it. There are no dues, taxes, premiums, or assessments of any kind whatever to be paid by you. We have paid everything in full.

The three papers will begin at once, and will come to you each month till the time expires. THEN THEY WILL STOP, unless you order them renewed.

Send us $2.00 by registered mail, or postoffice or express money-order to-day. Money refunded to any dissatisfied subscriber. Address

**GLEANINGS IN BEE CULTURE, MEDINA, O.**

This Policy does not apply to persons under sixteen or over sixty-five years of age.

# C. H. W. WEBER

**Headquarters for**

# BEE SUPPLIES

**Distributor of Root's Goods Exclusively, at Root's Factory Prices**

GIVE ME YOUR ORDERS for the **Best Goods Made.** You wi be pleased on receipt of them. You will **save money** by ordering from me. My stock is complete; in fact, I keep **every thing** the **bee-keeper** needs. **Cincinnati** is one of the best **shipping-points** in the Union, **particularly in the South,** as all freight now **goes through Cincinnati.** Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly **free of charge.**

## Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

# C. H. W. WEBER

**Office and Salesroom, 2146-2148 Central Ave.**
**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

NEW YORK.—There is but little demand for comb honey, and that for fancy grades only. While there is no overstock, there is a sufficient supply to meet all demands if not more. Off grades of white honey, dark and mixed, are neglected, and very little called for. We quote fancy white, 15; No. 1 white, 14; off grades and dark, 10 to 12, according to quality. The demand is fair for nearly all grades of extracted; but receipts are quite large, and prices are somewhat declining. We quote: White sage, 8½ to 9; light amber, 7½ to 8; dark, 6½ to 7. The market for beeswax is quite dull; very little demand, but prices are declining. We quote from 28 to 30, according to quality.
HILDRETH & SEGELKEN,
Feb. 5. 265 Greenwich St., New York.

ZANESVILLE.—The market for honey continues to be light, though if any difference there is a slight improvement since our last report. Commission men seem to have plenty of comb in stock, especially alfalfa, and are getting from retail grocers $4.00 to $4.25 per case of 24 sections for fancy, or 18 to 19 cents per pound. No. 1 brings about a cent less. The demand for extracted is chiefly in glass packages for the retail trade. I pack two sizes—25 and 10 cent, getting $2.25 and 90 cts. per dozen, respectively, from grocery and drug trade. Beeswax is moving very slowly. We could use a little good yellow at 30 cts. f. o. b. here in exchange for bee-supplies.
EDMUND W. PEIRCE,
Feb. 5. 136 W. Main St., Zanesville, O.

PHILADELPHIA.—The honey market has been slow, both on extracted and comb honey. They are freely offered at the following prices: Fancy white comb, 15 to 16: No. 1, 14 to 15; amber, 12 to 14; extracted white, in cans, 8½ to 9; amber, 7 to 8. Beeswax, 30. We are producers of honey, and do not handle on commission.
W. A. SELSER,
Feb. 8. 10 Vine St., Philadelphia.

INDIANAPOLIS.—Demand for best grade of extracted honey is good, while comb honey is meeting with slow sales. Very little honey is being offered by producers, and jobbers are carrying a very limited stock. Bottled goods in groceries find slow sales, which can be attributed to dull times; but there is another reason—many bottlers are making the mistake of putting out inferior goods. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 16 to 17; extracted white clover, 9 to 10; amber in barrels, slow at 6 to 6½. Beeswax, 28 cents cash or 30 cents in exchange for merchandise. WALTER S. POUDER,
Feb. 5. Indianapolis, Ind.

SAN FRANCISCO.—Practically all the last crop of honey has now moved out of the hands of producers, and stocks held here are slightly greater than last month. The supply, however, is still small, and prices are firmly held, though the movement has not increased to any extent. Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 6½ to 6¾.—*Pacific Rural Press.*
Feb. 1.

BUFFALO.—Demand for all kinds of honey is fair at steady prices. No. 1 to fancy white comb, 16 to 17; No. 2 white comb, 13 to 15; No. 1 buckwheat, comb, 11 to 12½; No. 2 buckwheat, comb, 10 to 11; white clover, extracted, 9 to 11; amber, extracted, 8 to 8½; dark, extracted, 7 to 8; tumblers, 90 to $1.00 per doz. Beeswax, 25 to 28. W. C. TOWNSEND,
Jan. 28. Buffalo, N. Y.

CINCINNATI.—The market on comb honey is exceedingly slow. Prices are no inducement to force sales. No. 1 white comb honey is selling slow, retail, 16. The market on extracted for manufacturing purposes is slow, ranging from 6 to 6½ in barrels. No white clover to offer. White sage is 9½ to 10. Beeswax, fair demand, selling at 32. C. H. W. WEBER,
Feb. 4. Cincinnati, O.

HAVRE.—There is only a small trade in foreign honey at about 5 cts. per lb. at the custom-house. Wax is selling at 33.

NICE.—Local honey is selling at 10 to 12; Reviera at 11 to 13 at the custom-house; Calabria honey (season of 1906), 11 to 12; from Sfax, Mahdia, Sousse, and Monastir, in Tunis, 10; second quality slightly less.

MARSEILLES.—Wax, Madagascar, 30; Algiers, 31; Morocco, 31½; local honey, white, 8; Italian, 8.

BARCELONA.—Wax, Spanish, 30 to 32; foreign, 30 to 33; native honey, 8 to 9 for first quality.
*L'Apiculture Nouvelle.*

BERLIN.—Honey is retailed here at 35 cts. per lb.


THE BUSY BEE-MEN.

It won't be long before the bees
Will need some new abodes.
THE BUSY BEE-MEN sell THE HIVE
MUTH SPECIAL by the loads.

It can't be beat, and costs the same
As any 'in the ring.'
But take a look into our book—
You'll say, "That's JUST THE THING."

Send for our free catalog, and see our MUTH SPECIAL DOVETAILED HIVE illustrated. You can't believe it unless you see it.

THE FRED W. MUTH CO.,
51 WALNUT STREET. The Busy Bee-Men. CINCINNATI, OHIO.
Send for our prices on table honey. We have the finest.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department,

205 La Salle St., Chicago, Illinois.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

**HILDRETH & SEGELKEN,**

265-267 Greenwich St. 82-86 Murray St.

NEW YORK.

**W. H. Laws says,** If there is a queen-breeder who can boast of better stock let him trot out the proof. Testimonials enough to fill this book. Will give you only one. Mr. J. C. King, Washington, D. C., writes, "For two years I have had one of your queens in my apiary. Each season she has given me over 200 lbs. comb honey; last season she actually stored while other colonies starved. I have over twenty strains in my three apiaries, but yours is the best."

Now is the time to get a fine breeding queen; stock up this fall and double your crop of honey the coming season. Single queen, $1.00; 6 for $5.00. Extra select breeders, $5.00. Safe arrival and satisfaction guaranteed.

W H LAWS, Beeville, Bee Co., Texas.

# WESTERN Bee-keepers

.. will ..

SAVE TIME AND FREIGHT

by ordering ROOT'S GOODS from Des Moines, Iowa.

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

**JOS. NYSEWANDER**

565-7.W.7th St., Des Moines, Ia.

# NEW GOODS! BIG STOCK!

New Warehouse Root's Goods
Prompt Shipment Low Freight

EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**

241 BULL ST. SAVANNAH, GA.

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

# Gleanings in Bee Culture

$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.

*Devoted to Bees, Honey, and Home Interests.*

Published by THE A. I. ROOT CO., Medina, Ohio

J. T. CALVERT, Business Manager

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AGENTS. Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

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Foreign subscribers can save time and annoyance by placing their orders for GLEANINGS with any of the following authorized agents, at the prices shown:

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**$53,700**

Made by O-HI-O Cooker Agents in 1905 selling the

# OHIO

combination

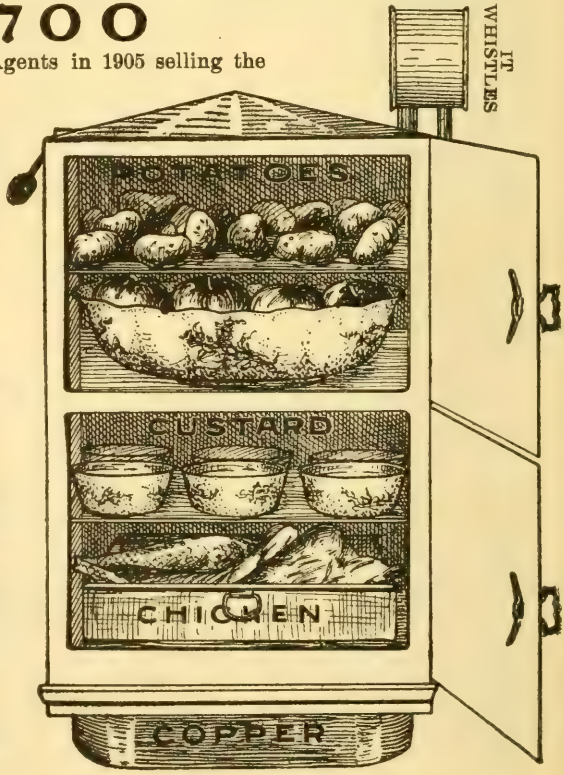
## Steam Cooker-Baker.

We have many agents making $5 to $10 daily. Write us and we will give you names of agents near by who are making at least $5 daily. We can easily prove that the "O-HI-O" is the best money-maker you ever heard of, and will make you more money than any thing you ever sold or are now selling. *Write us at once and we will prove it.*

Guaranteed to save 50 per cent in fuel, labor, time, and provisions. A whole meal cooked over one burner on any style stove. It assures you deliciously cooked hot meals; *30 days' trial.* No intermingling of odors or tastes. Fine for use in summer cottages. A necessity every day of the year. The only healthful way to cook foods and breadstuffs.

*Handsomely illustrated catalog free.*

**"O-HI-O" COOKER CO.**
**908 Jefferson Av., Toledo, O.**



# THE RIPENED FRUIT

If you are not a subscriber to the *Bee-keepers' Review* then it is the

**Fault of the Advertising;**

and I'll admit that no description of an object can quite equal an actual examination.

The *Review* started modestly, quietly put forth its roots, threw out its branches, budded and blossomed, and is now bearing

**Crops of Ripened Fruit.**

This is not simply a fanciful figure of speech. There are reasons for this, which lack of space forbids mentioning; but it is an actual *fact* that the *Review* is going ahead and "doing things" in a way that really astonishes even its editor. Yes, and a competitor like Bro. Root, during a recent visit, generously admitted that the *Review* had never

**"Scintillated"**

(yes, that's the word he used) as it had in the last few months.

Not as a publisher, but as one bee-keeper to another, I say you ought to take the *Review*. Of course it will do me some good, but it will do you *more*.

So sure am I that you would be delighted with the *Review* that I will make this proposition: Send me $1.00 and I'll send you all of the back numbers from January, 1907, and put your name on the list for the rest of this year. When the back numbers come, take time to look them over carefully; and if you are not

**More Than Satisfied,**

if you would not rather have the *Review* keep on coming to the end of the year, than to have the dollar, just drop me a postal and I'll take your name off the list, return the dollar, and you will be welcome to keep the back numbers. I could not make this offer if I did not know how good the *Review* really is—and I want you to know it.

**W. Z. HUTCHINSON, :: :: :: FLINT, MICH.**

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We are not selling enough books. But WE HAVE TO SELL

**ALL THE BEE-BOOKS THAT ARE SOLD IN AMERICA,**

**and until March 1 we are Selling Them at 10 PER CENT DISCOUNT from Publishers' Prices.**

And every book is perfect. We are *are not offering you* seconds or injured books. Not only books, but new and renewal subscriptions to any of the bee-journals are subject to this discount. See what a saving that is. The A B C, the Root book on bees, is sold by other people for $1.50 postpaid; by us for $1.35. Twenty-five cents less by freight or express. Advanced Bee Culture, the finest written, the finest printed and bound, of any of the recent bee-books; the *best* book for one who is already a bee-keeper, is sold by others for $1.00; by us for 99 cts. How to Keep Bees, by Anna B. Comstock, is the book for the suburbanite with a few colonies of bees who never expects to have a large apiary. Price the same as for Advanced Bee Culture. Either of these last books ten cents cheaper by freight or express. Because we are not selling as many of these books as we want to, we are *not only going to give* the discount above mentioned, but we will *send as a present* to the person from each State who is first to answer this advertisement with a book order any dollar bee-book in the English language which may be requested REMEMBER, we can supply you with best quality of comb or extracted honey at fair prices, and fresh-from-the-factory ROOT BEE-SUPPLIES AT FACTORY PRICES.

**C. S. CRAFFAM & BRO., . . . . BANGOR, MAINE.**

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# QUEENS FOR 1908

J. E. HAND, the veteran bee-keeper and EXPERT QUEEN-BREEDER, will devote a part of his time the coming season to the rearing of CHOICE QUEENS from a superior strain of LONG-TONGUE RED-CLOVER ITALIANS that have gained a world-wide reputation for HARDINESS, GENTLENESS, AND SUPERIOR HONEY-GATHERING QUALITIES. Watch for his ad. It will open your eyes to a few points in queen-rearing that will save you dollars.

**HIGHLAND BEE AND POULTRY FARM, J. E. HAND, Proprietor, BIRMINGHAM, ERIE CO., O.**

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# Lewis Bee-supplies at Factory Prices

BEST GOODS. PROMPT SHIPMENTS. FEBRUARY DISCOUNT 3%.
Send for 1908 catalog on new supplies and fire-sale list.

**ARND HONEY & BEE SUPPLY CO., H. M. Arnd, Prop.** *Successors to*
**191-193 E. Superior St., Chicago, Ill.** **York Honey & Bee Supply Company.**

# Gleanings in Bee Culture

E. R. ROOT, Editor — A. I. ROOT, Editor Home Department — H. H. ROOT, Ass't Editor

Department Editors—DR. C. C. MILLER, J. A. GREEN, PROF. A. J. COOK, J. E. CRANE, LOUIS H. SCHOLL, G. M. DOOLITTLE, R. F. HOLTERMANN, "STENOG," W. K MORRISON.

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### KNIVES AND SCISSORS.

If you are on the outlook for a really good pocket-knife we think that the pages of GLEANINGS will be of service to you in finding something durable and satisfactory. If you will turn to the advertisement of Maher & Grosh Co., A street, Toledo, Ohio, you will find advertised a line of cutlery goods. Do not think we advise without knowing the facts, for we sent to them for samples some time ago, and have been trying them right here in the office. The pocket-knife is just to our liking—sharp, well shaped, well bound, and yet not too heavy. We consider it a really good knife. The scissors we have are also satisfactory in every way—close-fitting and sharp. Moreover, we believe that both knife and scissors may be readily sharpened when required. We do not know for a certainty, but we believe the Maher & Grosh Co. would return the money to a dissatisfied customer who returned the goods, as they have been doing a mail-order business for years on the square-deal principle.

### FINE TOOLS FOR THE GARDENER.

In nothing is American mechanical skill more clearly shown than in the designing and construction of agricultural tools. Other countries are so hopelessly far behind that they can not be considered in the race at all. We do not here allude to horse-driven machinery, but rather to hand-power appliances for the gardener and truck-grower, such as is manufactured by the Bateman Mfg. Co., of Grenloch, N. J., who turn out in wholesale fashion an immense number of beautifully constructed gardening-tools. Some of these tools will actually do better work than any person can perform by hand. For example, no man could perform the marvelously accurate work done by one of their "Iron Age" machines for distributing garden seeds. In point of fact, the work of seed-planting is rendered a pleasure instead of a drudgery, as used to be the case in this country in years gone by. The modern truck-grower can not do without these tools. They are fixtures in his business, and he would stop work rather than attempt to do without them. If you are not acquainted with the superior merits of the "Iron Age" line of tools, write for catalog.

**4 PER CENT.**

**There is Nothing Speculative**

about a savings account with The Savings Deposit Bank Company—

It is the one form of investment that does not fluctuate in value—

It is always there when you want it—

It is absolutely sound and secure—

It is the safest, most satisfactory investment your money can find.

Our booklet describes our methods and management, and explains the advantage of our simple banking-by-mail system.

**WRITE FOR THE BOOKLET TO-DAY**

**Established 1892** **A State Bank**

**Assets over $700,000**

**THE SAVINGS DEPOSIT BANK COMPANY**

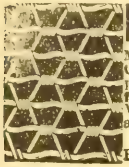
MEDINA, OHIO

# FIX YOUR ROOF

**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

**Roof-Fix** The Perfect Roof Preserver, makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our free roofing book tells all about it. Write for it today.

The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.



**FENCE** *Strongest Made*

Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free.

COILED SPRING FENCE CO.
Box 191 Winchester, Indiana

**DEMING Sprayers**

make money for the users. Best made—solidly constructed. Not injured by chemicals.

Nineteen Eight Catalogue and "Expert Testimony" will interest you.

THE DEMING CO.,
545 Depot St., Salem, O.
Henion & Hubbell,
Agents, Chicago, Ill.

# Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage.

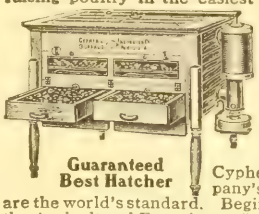
**RAWLINGS IMPLEMENT COMPANY**
9 and 11 W. Pratt St. Baltimore, Md.

**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **Boston**

**H. H. JEPSON,**
182 Friend St. Phone Haymarket 1489-1

**Poultry Experts Show How to Make Money with Poultry and Incubators.**

Every farmer and farmer's wife in this country should consider the great ready cash profits of raising poultry in the easiest and most economical, time-saving way, with incubators and brooders which have for 10 years demonstrated their superiority over the hen.



Guaranteed Best Hatcher

Poultry experts are absolutely agreed that the Cyphers Incubator Company's patented machines are the world's standard. Beginners—Experts and the Agricultural Experiment Stations are using Cyphers machines successfully and recommend them.

It will pay every reader of this paper to get the latest reliable facts on the poultry subject, by writing for the Cyphers Free 212-Page Catalog (8x11 in., larger than a magazine), which is most interesting in the decision of the subject of "How to Make Money with Poultry and Incubators."

The catalog contains hundreds of illustrations, and describes the full line of Cyphers Supplies—everything for the poultry raiser. This, the biggest and best book of its kind, is free to you if you name this paper and send name and address of two acquaintances interested in poultry. Address

Cyphers Incubator Company, Buffalo, New York, Boston, Chicago, Kansas City, Oakland, Cal., or London.

# Poultry Magazine,

Monthly, 50 to 100 pages, its writers are the most successful Poultrymen and women in the United States. It is

**The POULTRY TRIBUNE,**

nicely illustrated, brimful each month of information on How to Care for Fowls and Make the Most Money with them. In fact so good you can't afford to be without it. Price, 50 cents per year. Send at once for free sample and SPECIAL OFFER TO YOU.

# SWINE MAGAZINE

Monthly 24 to 64 pages, best writers and information how to Make Big Money With Hogs. It is

**The NATIONAL SWINE MAGAZINE**

Printed on heavy paper, well illustrated with Prize Winning Animals, Houses, Fixtures, &c. 50 cts. per year. Our Premium Proposition to Agents on these two Magazines enables you to get one or a pair or more of pure bred pedigreed pigs, 4 kinds, absolutely FREE or a big Cash Commission if you choose. Write me today for samples of the two papers and full particulars.

R. R. FISHER, Publisher, Box 50, Freeport, Ill.

**GREIDER'S FINE Poultry Catalogue**

for 1908 is larger and better than ever. Tells all about pure-bred poultry and illustrates 60 varieties. Contains 10 beautiful chromos of leading breeds—pretty enough to frame. Tells of best Louse Killer, how to cure diseases, make money. Only 10c postpaid. Send to-day for a copy.

B. H. GREIDER, Rheems, Pa.

**MAKE MONEY IN POULTRY**

Others do it. You can too. Our big book "Profitable Poultry" tells how. Describes largest successful poultry-farm. 45 varieties of beautiful, hardy, pure bred fowls. Quotes low prices on fowls, incubators, supplies etc. Sent for 4 cents.

Berry's Poultry Farm, Box 253, Clarinda, Ia.

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## Catalogs Received.

Park's Floral Guide, La Park, Pa. A small catalog, but very interesting to the amateur flower-fancier.

Crine's Seed Catalog. This is an excellent list of gardeners' and truck-growers' seeds. R. V. Crine, Morganville, Monmouth Co., N. J.

Crawford's Catalog of Strawberry-plants. This is the annual announcement of celebrated strawberry-growers, the M. Crawford Co., Cuyahoga Falls, O.

Spring catalog of Kevitt's plant-farm, Athenia, N. J. Mainly devoted to strawberries. Well worth sending for by those interested.

Charles City Nursery and Orchard Co. A catalog of fruit-trees, etc.—an excellent catalog of trees adapted to the central West. Address, Charles City, Iowa.

Annual catalog of the Texas Seed and Floral Co., Dallas, Texas—seeds, garden, and poultry supplies. One of the most important catalogs issued in the Southwest.

Olds' Seed Catalog—all sorts of farm seeds. L. L. Olds Seed Co., Clinton, Wis. This is just the thing for farmers in the blizzard States and the Canadian Northwest.

Ratekin's Seed-book, issued by Ratekin's Seed-house, Shenandoah, Iowa. Farmers in the prairie States can not very well overlook Ratekin when ordering seeds.

Three catalogs of D. Hill, evergreen specialist, Dundee, Ill. Many of our readers do not realize the splendid work being done by Mr. Hill. Get his catalog and see for yourself.

The 24th Annual Catalog of Sterling Seeds, by Northrup, King & Co., seedsmen, Minneapolis, Minnesota. This is a fine catalog, which is fully equal to those turned out by any Eastern firm of seed-dealers.

The Storrs & Harrison Painesville Nurseries, Painesville, Ohio. A full general catalog of seeds, rose-bushes, plants, ornamentals, and fruit-trees. This firm is one of the most reliable and satisfactory in the country.

Alneer Bros., Rockford, Ill.; general seed catalog. A good list for those living in central States.

Andorra Nurseries, Chestnut Hill, Philadelphia, Pa.; price list of trees, shrubs, roses, and fruit-trees. One of the finest catalogs of trees issued anywhere.

Carl Sonderegger, Beatrice, Neb.; catalog of the German nurseries and seed-house. All farmers in the Northwest should possess themselves of a copy.

Burpee's Farm Annual for 1908; general catalog of farm and garden seeds. No market-gardener should overlook sending for this fine catalog.

James J. H. Gregory & Son, Marblehead, Mass.; vegetable and flower seeds for 1908. Always to the front with fine pumpkin, squash, melon, and cucumber seeds.

C. C. Abel & Co., 116 Broad St., New York; trade catalog of nursery trees; Pierre Sebire & Son, Ussy, France. Very interesting to those who grow trees for sale.

Geraniums. R. Vincent, Jr., & Son Co., White Marsh, Md., beautiful catalog devoted to geraniums only. If you are a lover of these flowers, this list will interest you.

Seed Catalog of N. L. Willet Seed Co., Augusta, Ga. This is a very complete list of seeds adapted to Southern conditions. Many of the items are not listed by Northern seedsmen.

Everything for the Garden. A very handsome catalog issued by Peter Henderson & Co., 35 Cortlandt St., New York. The Henderson catalog always confers a luster on a great name.

Maule's Seed-book A large catalog of seeds by Wm. Henry Maule, Philadelphia, Pa. This firm has always provided a large and handsome catalog to its patrons, and this year is no exception.

Vaughan's Seed-store Catalog, of 84 and 86 Randolph St., Chicago, Ill. This is a large catalog from one of the world's most extensive seedsmen—a very complete list for farmers and gardeners.

Stokes' Standard Seeds. This is the full title of the annual catalog of Walter P. Stokes, 219 Market St., Philadelphia, whose name is familiar to all market-gardeners and florists in the Eastern, Central, and Southern States.

# MR. ROBEY'S STATEMENT.

When you wish to get the best results from every dollar you invest in advertising your goods whether it is bees, queens, bee-keepers' supplies, honey, or any class of merchandise, you want exclusive evidence that the paper selected has been no disappointment to those who have tried it for a long time.

Mr. L. H. Robey, Worthington, W. Va., is one of the older advertisers in GLEANINGS, having begun about fifteen years ago. In July, 1903, he said: "I have been breeding Italian queens about twelve years, depending almost solely on GLEANINGS to bring me trade, and for the past three seasons I have been flooded with orders continually and have had to return hundreds that I could not fill." Mr. Robey would not have secured and held such patronage if he did not furnish good queens and give prompt service to the readers of GLEANINGS, neither could he secure such large orders were it not that our readers have such implicit confidence in the advertising admitted to our columns. We take pleasure in submitting the following letter from Mr. Robey:

Worthington West. Va. Sept 19-1907
A I Root Co

Answering your letter enclosed here in will say Gleanings has never disapointed me unless it was in bringing me more orders than I expected and could fill. For the last 6 or more years I have been unable to supply the demand made on me for Queens. Part of the time this season I was over two hundred Queens behind on cash orders and at this time I am just 90 Queens behind. Any Queens breeder who will do his part will find Gleanings will do its part every time. I am as well satisfied with the returns from my ad in Gleanings as a man could be Gleanings is a clean bright up to date Journal long may she live

Most truly
L. H. Robey.

P.S. I use no other paper but Gleanings in advertising my business
L H R

If you haven't already placed your order for advertising space, you should do so at once, stating the approximate date when you want it to begin. Early orders secure select positions. Any information given by addressing

**ADVERTISING DEPT. GLEANINGS IN BEE CULTURE, MEDINA, O.**

# OUR 1908 CATALOG

is ready for mailing. We should like to send YOU a copy. It gives prices and description of "ROOT-QUALITY" bee-supplies. These are the goods that thousands of SUCCESSFUL bee-keepers are using. We are the "ROOT-QUALITY" HEADQUARTERS in MICHIGAN. We save you time and freight expense.

On the back outside cover page of our new catalog we make a special offer on GLEANINGS to both new and old subscribers. If you renew soon or wish to subscribe, let us know.

By the way, did you notice the list of goods that we are offering at a SPECIAL rate in Jan. 15 Gleanings? Look it up.

## M. H. HUNT & SON, Redford, Mich.

TO THE

# BEE-KEEPERS

## OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

## E. GRAINGER & COMPANY,

Deer Park,

## Toronto, Ontario, Canada.

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

# APICULTORES

## De Espana, Portugal y Colonies.

Pidan catalogos de las colmenas, extractores, prenzas para cera, ahumadores, zinc perforado, escape de abejas, velos, cuchillos, maquinas para hacer base de panales, y todos otros articulos utiles en apicultura manufacturado por la celeberrima casa de

## A. I. Root Company,

la fabrica la mas importante del mundo. Precios muy modicos a los subagentes por mercancias puestas en nuestros talleres.

## EMILE BONDONNEAU,

Agente Générale

POR TODA EUROPA Y COLONIAS,

142 Faubourg SAINT DENIS, PARIS. 10me.

# $UCCE$$ IN BEE-KEEPING

The man who makes a $ucce$$ in bee-keeping is the one who does things when they should be done.

The time to buy goods is before they are needed; not when the rush comes.

Let us send you our catalog for 1908, so you can make out an order now.

**THE A. I. ROOT COMPANY**

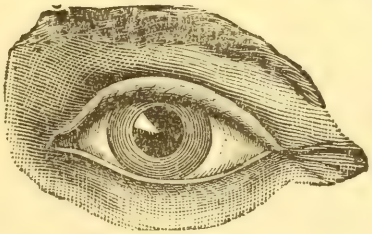
**SYRACUSE, :: :: :: NEW YORK**

# WE DO NOT SELL ROOT'S SUPPLIES

So many advertisers in GLEANINGS IN BEE CULTURE sell supplies bought from the Root Co. that to explain away a false impression we are compelled to state that we are not jobbers, but *manufacturers*. We make all the Bee-supplies we sell. Minneapolis is the largest lumber-distributing point in America. We buy lumber to advantage; we manufacture by water-power; we have lowest freight rates, and we sell on manufacturer's profit basis. **Let us quote you prices.**

**MINNESOTA BEE-KEEPERS' SUPPLY COMPANY**

**DEPT. 22 .. .. .. .. .. MINNEAPOLIS, MINN.**

# Keep your  on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once. For prompt shipments and good service, we are at your command.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO,, MISSOURI.**

# What's the Matter With Hilton?

WHY, HE HAS A LOT OF SUPPLIES HE WANTS TO LET YOU HAVE WITHIN THE NEXT SIXTY DAYS AT A DISCOUNT, TO MAKE ROOM FOR THE NEXT SEASON'S GOODS. JUST SEND A LIST OF WHAT YOU WANT AND GET ESTIMATE. IF YOU HAVEN'T HIS FORTY-PAGE ILLUSTRATED CATALOG, SEND FOR IT AT ONCE.

CASH OR SUPPLIES FOR BEESWAX AT ALL TIMES

**GEORGE E. HILTON**
**FREMONT, :: :: MICHIGAN**

# Bee and Poultry Supply House.

We are now in position to offer the bee-keepers of Northern New York a full line of Bee and Poultry Supplies, etc., including Incubators, Brooders, Rochester Spray Pumps, Asphalt Roofing, etc. Catalog on request.

**A. H. REEVES & CO.,**
**411 Main St, Watertown, N. Y.**
**Both Phones.**

# Eastern Bee-Keepers

We furnish every thing a bee-keeper uses and allow a *liberal discount* for early orders. We keep all supplies in stock, and can ship promptly by any route. Let us quote you on what you want? Catalog free.

**I. J. STRINGHAM,**
Apiaries—Glen Cove, L. I. 105 Park Pl., N. Y. City.

## THE DANZENBAKER SMOKER

PAT. OCT. 3,'05, JUNE 4,'07

**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case,** and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed,** giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot;** no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt,** expensive dies making it **uniformly perfect as possible to devise. We confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

**1884** **1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M. Jenkins**
**Wetumpka, : : Alabama**

# Dittmer's COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

# Hammer Free!

With Every Order of Supplies of $5.00 or Over.

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**

**Dubois, .. Pennsylvania**

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**

H. G. ACKLIN, MANAGER

**1024 Mississippi Street, St. Paul, Minn.**

# At St. Louis

On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

**Root's Bee-supplies**

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**

DEPT. B,

1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

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**SECOND " —10 lbs. Comb Fdn.** **FOURTH " —5 lbs. Comb Fdn.**
**FIFTH PRIZE—5 lbs. Comb Fdn.**

THE ABOVE PRIZES will be given absolutely free to those who will make the largest number of words out of the letters found in the name "Toepperwein." The letters may be used over as many times as desired, but in no single word oftener than found in the name "Toepperwein." Only words found in Webster's dictionary are admitted. The words must all be plainly written in columns, and numbered.

This contest is absolutely free to any one and anywhere. It is a fair contest, and one has the same chance as the other. These contests are very instructive, and just the thing for schoolchildren to pass the evenings. The contest will close May 1, 1908, and all lists with words must then be in, and in May 15th GLEANINGS the results will be published, giving the names of the winners and all the words of the one who wins the first prize. The winners have the privilege of choosing any grade of foundation. We feel confident that the winners will be highly pleased with the prizes, as the comb foundation is as fine and perfect as any machinery can make, and is made right here in our factory out of this clear Southern beeswax.

Now do not lay this aside and put it off until some other time, but begin right now and start the list. Write the words in a little memorandum-book and carry it in your pocket; and every time you think of another word mark it down. There are a great many words to be made out of the name "Toepperwein," and you have just as good a chance as any one else; so do not let any time go by, thinking some one else may have more words. Now, understand you are welcome to enter this contest, no matter whether you own bees or not, nor whether you are old or young, nor where you live. In case any of the winners have even numbers, then the amounts will be equally divided between such winners.

## ROOT'S BEE-SUPPLIES.

We always carry a large and complete stock of The A. I. Root Co.'s make of bee-supplies at Root's factory prices. Write us for illustrated catalog and price list.

## HONEY AND BEESWAX.

We buy honey and beeswax at all times. If you have any to offer, write us stating quantity you have, quality, and your best price delivered at San Antonio. We also work beeswax into comb foundation by the pound at reasonable rates. We should like to have some business from associations in other States who have large quantities to work up. Our capacity is 500 lbs. per day.

We have just received a set of new machinery, and our *Weed New Process Foundation* is perfect and gives perfect satisfaction everywhere.

Whenever you are in San Antonio make our office your headquarters and let us show you through our plant. Stay here a while and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

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**1322 South Flores St.** **SAN ANTONIO, TEXAS.**

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# The Bustling Busy Buzzing Bee.

*By the Bee Crank.*

"For where's the State beneath the firmament,
That doth excell the bees for government?"

So wrote Du Bartas more than 300 years ago, and men are still learning from their miniature teachers. Before you can say "scat," the bee will begin to get busy foraging for you in sublime but, alas! often misplaced confidence because you are not fully prepared to furnish the bees with proper facilities. Order your supplies to-day. I am ready. I haven't a shopworn article in my house. My patrons do not give me a chance to accumulate dead stock. I am still making a specialty of quick shipments; and Indianapolis is so located that they go direct. It's a main line from me to you, regardless of distance. I have comb foundation ready for immediate shipments in exchange for beeswax, on which I allow you 30 cents per pound in trade. I have a big lot of bright new Danzenbaker hives and a complete line of Root's goods at Root's prices. All of them and many other bee requisites are shown in my new 1908 catalog, free for the asking.

*Walter S. Pouder, Indianapolis, Ind.* Macon, Ga., Feb. 3, 1908.
Goods, ordered of you recently, arrived in first-class shape and very promptly. I have frequently had to wait over a month for goods ordered only a couple hundred miles from here. Many thanks for your promptness, and I, too, know where to send when in need of more goods. Respectfully, F. C. RIES, Jr.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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## STRAY STRAWS

by Dr. C. C. MILLER

IF JAY and the "other" two dogs experiment any more as on page 145, please print conclusions only in copy of GLEANINGS sent to me. Circumstantial details are too hard on suspender buttons "in this locality."

ONE OF THE weakest points in the production of comb honey in Quebec has been the production of combs attached only to the bottom and sides of the sections, p. 153. How under the sun do they keep the bees from attaching them at the top?

THE EDITOR of *Canadian Bee Journal* having objected that comb honey was unwholesome because the wax had to be melted in the stomach, D. Anguish comes at him in this wise: "For my part, I think that is where the unhealthy part comes in with your customers — heating them up so hot as to melt the wax."

A PAIR OF FOWLS valued at $2000 were on exhibition at the Chicago show. An ordinary queen bee sells for about the same as a pair of ordinary fowls. If a queen of great value were rated at $2000 the idea would be hooted. But why should there not be the same difference between the common and the best in bees as in fowls?

G. M. DOOLITTLE, p. 143, grudgingly admits that drones help keep up heat in a hive from which a swarm has issued, when the workers are few. Friend Doolittle, wouldn't drones help just as much to keep up the heat "when the workers are few" in a weak colony in the spring, or at any other time? Oh! "workers are better for that," are they? Then why not after swarming?

AS POSTSCRIPT to hot-air liquefying, p. 145, which I suppose is valuable because of its slowness, let me advise those with only a small quantity to liquefy, to set it on the reservoir of the cook-stove, where it may take three or four days to liquefy, but can never be overheated. [Yes, the reservoir on the back of the stove is the handiest place; but, unfortunately, only a very small quantity of honey can be reliquefied there.—ED.]

"LABELING THE WEIGHT," p 141. Does that Nebraska law really demand putting the weight on a section of honey? Does it not refer to packages already put up? If a grocer weighs a pound of coffee, and wraps it up, is he obliged to label it? Does a section of honey come under the head of "package of food," if not previously wrapped up? [We do not see any thing in the exact wording of the law, page 141, that warrants your conclusion. When the law is not specific it is wise to err on the safe side.—ED.]

WHAT GOOD REASON is there for having more than ¼ in. space between bottom-bars? [We suppose you mean ¼ inch on a vertical line between the bottom-bars. Such close spacing would be decidedly objectionable if used in sectional hives; for it is desirable to have bottom-bars narrow enough so that one can look up between the combs when the brood-chamber is lifted up. With wide bottom-bars leaving only ¼-inch space it would be difficult to arrive at any conclusion as to the condition of that particular sectional brood-nest.—ED.]

"WITH THE SYSTEM of lifting up the partly full super and placing the empty one under, one has to be very careful or too much room will be given. In this case the sections will be light weight, and poorly attached to the wood, so they will not stand shipment as they should," *Review*, 13. Before using bottom-starters I had trouble with sections that would not stand shipment; with bottom-starters I can not see how such a thing is possible. One of the first things the bees do is to fasten the two starters together, and, so far as concerns the comb breaking out of the sections, they would ship in perfect safety when less than half filled.

C. P. DADANT, *American Bee Journal*, 15, objects to the attempt to have two queens working in a hive, risking the life of one or

both, and says the only time to make it profitable would be early in the season so as to have a strong force for the harvest. But, friend Dadant, why didn't you go a step further? Early in the season no more brood can be matured than the bees can cover, and at that time there are generally not enough bees to take care of all the eggs one queen can lay; so if ten queens were added how could it increase the force of bees? I have never taken any stock in doubling queens to get strong colonies, but counted it a big thing if we could thus winter extra queens and prevent swarming. If these things fail us we can only sigh over blighted hopes, and start looking for some other thing new and good.

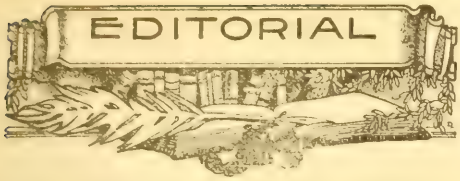
G. M. DOOLITTLE, page 23, says buds for basswood blossoms are formed in June and July in the preceding year, and that we can distinguish these blossom-buds in May; and H. S. Wheeler wants to know if I have found it so, and if the same thing is true as to the grape. I never watched the grape very closely, so I can not say about that, and I do not know exactly how long before blooming I have recognized basswood-buds; but I am quite familiar with blossom-buds on fruit-trees, and can go out any time in the winter and show you the blossom-buds of apple, pear, plum, or cherry. So characteristic are the blossom-buds on apple-trees that I can tell quite often by the look of a bud in January whether it was taken from a Dutchess tree, a Talman Sweet, or some other variety with which I am acquainted. Blossom-buds on cherry-trees are *easily* distinguishable before the leaves fall the preceding summer.

PROHIBITION, nowadays, is all the while cropping out in new places and in new ways. The great mail-order house of Sears, Roebuck & Co., Chicago, handed each of its employees a circular, saying, "Entering any saloon within a certain proscribed district at any hour of the 24 hours of the day is absolutely prohibited. This district is bounded by Jackson Boulevard, West 40th St., 16th St, and California Ave. This prohibition went into effect April 1, 1906, and employees discovered in saloons in that district will have placed themselves in a position where their services are no longer desirable." The general manager says, Jan. 21. 1908, "This attitude we still rigidly maintain, and we feel that the policy has worked great benefit to our institution as well as to the employees themselves." [The action of the railroad companies and other industrial concerns along the same line only goes to show that the liquor-traffic has got to step down and out very soon.—ED.]

MR. EDITOR, you say, p. 140, that if supers with the Miller escape are piled distant from hives you don't see how it is possible for young bees to get back to their hives; but if placed near the entrance they might crawl in. Why, man alive, they fly—why shouldn't they? I suspect you have in mind that some are so young that they have not yet flown, and so do not know the way home. I wonder if bees ever leave the brood-combs before their first flight; at any rate, in the hundreds of times we have used Miller escapes I have yet to see the bee so young that it didn't come out and fly away—somewhere. Don't you think it would go to its own hive? Even if it should go to some other hive, what harm? [This whole question hinges on whether young bees leave the brood-combs before they can fly. We would have said that they would, but possibly we are mistaken. If so, we stand corrected. We shall be glad to get expressions from our subscribers on this point—that is, if a pile of supers containing bees, just as they come from the hive, be placed at some point remote from any colony, do all the bees, old and young alike, after passing the escape, go back to their respective hives? or will some of the young bees be lost? It is our impression that, some years ago, when we tried this Miller bee-escape on a pile of supers, there was a lot of young bees clustered around the outside of the pile; and that is why we have always supposed that a bee-escape so placed as to deliver the bees back into the brood-nest whence they came was better than one that delivered them out in the open air.—ED.]

THAT SECTION STRAW, p. 140, looks as if it were footnoted by the Artful Dodger. My five or six questions are utterly ignored, and some talk given that doesn't bear any too much upon the subject. Please go into your secret chamber, Mr. Editor, taking your conscience with you, and answer to yourself the questions I asked, and see if you don't think it better to call a story a story, and not a section. You think the phrase "sectional hive" would not be misunderstood "unless one is woefully ignorant of apicultural terms." Neither do I, for "sectional" has not been in use with regard to sections. But "section"—and that's the word we were talking about—might be misunderstood if used in the two ways. Only this morning I happened upon it in reading, where it was hard to decide which meaning it had; and I am not so "woefully ignorant" as I might be, either. [You have apparently jumped to the conclusion that the editor was arguing against you, when, as a matter of fact, he *thought* he was helping to establish your position, in part. Read the footnote over again and see if you do not come to that conclusion. The footnote in question was based, not on your particular statement, but on all the discussion that had been going on, concerning which your last statement was the "last straw."

We did not say that we sanctioned "section" as referring to a shallow brood-chamber. If our space had not been limited we would have (and hereby do now) tabooed that word in that connection, and shall endeavor hereafter to cross it out when it is used by a correspondent. We are of the opinion that we nearly if not quite agree; but we see no need of coining new terms for "sectional hives," "divisible brood-chambers," "stories," etc., as urged by some.—ED.]




MARYLAND has no pure-food law. The *State Agricultural College Quarterly* says it is time it had one. It is. The bee-keepers will have to stir them, probably, before the law-makers will do any thing.

WINTER is starting out on the first of February snug and cold. We much prefer to have it cold at the right season of the year in order that we may have other seasonable weather in its season. A cold February and March is quite sure to be followed by a mild and early spring; but a warm February and March will be almost sure to be followed by a bad April or May. Nature seems to try to establish a balance of weather.

### HIGH EXPRESS RATES.

THE railroads have steadily reduced their rates for a number of years; but the only move made by the express companies in 18 years has been to raise them, which they did when the United States levied special taxes on account of the Spanish war. They raised their rates to meet these taxes. The taxes have been long since removed, but the rates have not been reduced in the least as they ought to have been. W. K. M.

### THE BAR SINISTER.

ACCORDING to press dispatches from the seat of government, President Roosevelt is very much interested in the controversy with regard to corn syrup vs glucose. One reason for this is because the business of manufacturing glucose is supposed to be in the hands of a trust. Another reason, so it is said, is the fact that the Standard Oil Co. is financially interested in the company controlling the output of glucose. W. K. M.

### SPECIAL ARTICLES IN THIS ISSUE.

THERE are several articles in this issue to which we wish to call special attention. One is a contribution on sweet clover, by Frank Coverdale; another, on the folly of using swarming-cells, by E. W. Alexander; another, on home-made windmills, by T. P. Robinson; and, last, the automatic uncapping-box, by L. E. Mercer, a device by which cappings are melted as fast as they are shaved off the combs. There are other valuable contributions in this issue, all deserving a careful reading.

### ITALIAN BEES FOR JAPAN.

F. JAY LEWIS & SON, of Oak Park, Cal., recently sent two full colonies of Italian bees to Japan, and, according to advices since received, the shipment was entirely successful. It may be asked why it was necessary to send full colonies. The reason is obvious when we remember that the bees of Japan are smaller than ours, and therefore the comb cells are too small to raise our bees in to maturity. Mr. Y. Suminokuru, Tokio, Japan, is now the owner of the two colonies so successfully transported.

W. K. M.

### WAX-MOTHS AND AMERICAN FOUL BROOD.

THE above is the title of a small bulletin issued by the United States Department of Agriculture. As its name indicates, it deals with the relation of the wax-moth to the spread of foul brood. The author, Dr. E. F. Phillips, comes to the conclusion the wax-moth does not prevent the spread of foul brood when it eats up the combs, as the bacteria are still present. There are three plate illustrations. The Superintendent of Documents, Government Printing Office, will supply copies at 5 cts. each. W. K. M.

### CATTLE AND SHEEP VS. BEES.

THE western sheep and cattle men, at least a great many of them, are protesting against the passage of the Burkett bill now before Congress, providing for the leasing of all public grazing lands. So far as bee-keepers are concerned, however, the case is different, because it would provide against overstocking a location with bees Also two of the worst enemies of the bee business would be controlled namely, sheep and goats, which are likely in the end to eat up every flowering tree and shrub on the face of the landscape. This has actually happened in certain localities where the range has been overstocked with sheep, cattle, and goats. The prime objects of the Burkett bill are to provide against overstocking, and against the cattlemen's and sheep-herders' wars.

W. K. M.

### FIVE THOUSAND BASSWOOD SEEDLINGS AT AU SABLE, MICH.

THE following clipping has been sent us, and will explain itself:

BAY CITY, Mich., Dec. 17.—Wm. B. Mershon, speaking of the work along forestry lines being done on the Au Sable forestry farm, said: "We have just contracted with the forestry nursery at Dundee, Ill., for 5000 basswood seedlings These are two years old, and they will be put out as soon as the weather is favorable in the spring. It is an interesting fact to note, that basswood seeds do not germinate the first year of planting, but germinate in the second to the fifth year."

Basswood is now extensively used for packing-boxes, etc. A few years ago it was not used for such purposes; but it has been found to be an excellent substitute for pine, formerly so largely used in that way.

If this plan were to be carried out by other States it would go a long way toward solving our section problem for the future, and at the same time give us the old-fashioned flows of honey from basswood. Of course, it would take years to get results; but it is high time that we were beginning to do something, for the paper and furniture industries alone are cutting annually

enormous quantities of this valuable timber; and unless some effort is made to replace it, coming generations will suffer hardship.

### SWEET CLOVER AS A FORAGE-PLANT FOR CATTLE.

On p. 147 of this issue will be found some very valuable and interesting testimony showing how cattle, *when once educated to it*, will actually ignore timothy and alsike clover—two of the supposedly best forage-plants in the world, and eat sweet clover clean down to the ground. All the more surprising it is that so many State legislatures have declared that sweet clover is a noxious weed, and that, therefore, the road supervisors must keep up an unremitting warfare against it. We hope our readers will seek the ears of their Senators and Representatives, and ask to have the law against noxious weeds amended, eliminating sweet clover from the list.

### A NEGLECTED FIELD.

There is a demand for a method of serving small portions of comb honey at hotels and on dining-cars, without drip or the messing of dishes. Quartering up a section of honey is not entirely satisfactory unless four people are served at one time. What is wanted is a plan for cutting up a sealed comb in an extracting-frame into small portions, washing off the drip and wrapping in waxed or paraffine papers. The problem is, how to do this without too great an expenditure of labor, and yet at the same time have something that is neat and attractive If this can be done in a manner satisfactory to the hotels, restaurants, and dining-car people, a big demand for honey at good prices will be assured. We should be glad to hear from any one who knows how to meet the requirements.

### BEES AND RHEUMATISM.

We notice in the *Youth's Companion* for Feb. 6 that "Dr. Ainley Walker, of University College, Oxford, England, has undertaken to solve the question whether, as popular belief in many countries has long asserted, the poison of bees' stings acts as a prophylactic and a cure in case of rheumatism. As he has recently been able to collect some definite evidence in support of this belief he invites correspondence from all persons having personal knowledge of the subject. Among other facts which he believes to be established is a connection between rheumatic fever and the production of formic acid (the acid of bee poison) in the human body." We hope bee-keepers in a position to give evidence will be kind enough to write Dr. Walker, stating the facts. W. K. M.

### MORE ROMANCE.

Mæterlinck has written a book entitled "The Intelligence of Flowers," "which," *The Independent* says, "is, like 'The Life of the Bee,' a unique combination of fact and fancy, scientific in its statements, humanistic in its interpretation of them, mystical in its philosophy, and poetical in its expression." Our contemporary hits the nail on the head. The features which it characterizes so well are calculated to make any book sell, and in this respect Maurice Mæterlinck is one of the greatest writers of this or any age. No doubt "The Intelligence of Flowers" will be as popular as any of his previous works; but it is a peculiar commentary on our civilization that a book which is not true is far more popular than a strictly truthful one. Some allowance must be made for the fact that the elegance of diction and beautiful ideas are worth something, and in this the great Belgian certainly excels.

W. K. M.

### VERY LITTLE ADULTERATION.

The annual report of the Connecticut Experiment Station relating to the analysis of food products has this to say on the subject of honey adulteration:

> Formerly strained honey was extensively adulterated with glucose, and to some extent with cane sugar. It was also a common practice to feed bees with sugar, which yielded, when stored in the comb, an inferior and flavorless product. At the present time these frauds are not so commonly practiced.
>
> During the present year 45 samples of strained honey were bought and examined, of which only one was adulterated. A description of the adulterated sample follows:
>
> 17997. Label: "Hallett Table Water Co., Bridgeport, Conn. Nonquit Pure Honey. Superior quality. Sparkling, delicious." Dealer: S. Manjoney, 1362 Main St., Bridgeport. Per bottle, 15 cents. Adulterated with glucose.

It seems to us this is a very satisfactory report from the land of wooden nutmegs, and yet it is our opinion that other States can make a showing equally good. Honey adulteration has practically ceased, and consumers are well protected against fraudulent honey. One case in forty-five is a small percentage, and probably that was bottled before the national pure-food law went into effect. W. K. M.

### TOO MUCH BOTTOM VENTILATION IN CELLAR DETRIMENTAL.

It will be remembered that we had last year a large amount of bottom ventilation for our cellar-wintered colonies. Even before the first of the year they were wintering very badly, and before the time of setting them out we had lost nearly 90 per cent, as we afterward learned. This year, in the same cellar, under the same conditions, we put in another lot of bees of about the same strength, but with a narrow contracted entrance, ⅜×8 inches—just the same the bees were having in the late fall outdoors, and, presto! what a change! They are wintering finely.

Last winter, when we lost such a heavy percentage of our bees, there was one colony that, by mistake, was shut up tight during almost all the winter, and it wintered the best of any colony in the cellar. This we considered to be a "pointer" showing that too much ventilation, in some cases at least, is decidedly bad.

With small entrances we have had ideal wintering in our bee-cellar; but when, last year, we gave a large amount of ventilating space under the hives, something "happened." We are not positive, of course; but it looks very much as if too much ventilation for indoor-wintered bees was bad. It seems reasonable that a colony of bees should have a warm hive, even in the cellar. If a third of the bottom is open to cellar air, then they must consume too largely of their stores in order to keep up animal heat. This results in the clogging of the intestines, and then dysentery. If there is a furnace in the cellar this large amount of ventilation would do no harm, because the atmosphere would be reasonably dry and fairly warm.

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### HONEY AS AN ARTICLE OF FOOD AT OUR LEADING HOTELS.

THE editor has been making numerous trips in various directions over the State of Ohio, and he has been gratified to see that honey and maple syrup are now being placed side by side as two standard delicacies and desserts at our leading hotels. The day was when honey was never mentioned; but since the advent of national and State laws the inferior and spurious sweets have been so thoroughly tabood that the leading hotels do not care to recognize them. They take pride in offering only the best in the line.

We wish to offer a suggestion right here to our readers; and that is, that they see to it that the leading hotels in their vicinity are supplied with a first-class article of honey. Do not let them go to the local retailers and get an inferior product.

Traveling men are great advertising mediums. Supply them with good honey, and the demand for the article will increase enormously, as they will introduce it in their homes and talk about it to their patrons.

Our own local hotel-keeper of the American House finds an increasing demand for honey on his table; but he stipulates that his patrons shall have the very best that money can buy. His customers come from all over the United States; and when they arrive at the town where there are so large investments in bees and bee culture, they naturally expect to find the finest and best of honey, and they are not disappointed. We are furnishing to the hotel alfalfa because we have not much else of late. These traveling men are loud in their praises of this honey, even inquiring where it can be obtained, in order that they may keep it in their homes.

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### THE WELLS SYSTEM.

THE present discussion regarding the possibility of retaining more than one queen in a hive brings back memories of the time when the pages of the *British Bee Journal* teemed with references to the Wells hives, which were (and are) worked with two queens. In this hive the queens are separated by a wooden division-board having perforations ⅛ inch in diameter. This does not allow the bees to pass, but allows the same odor to permeate the whole hive. In some cases the bees were allowed to work together on the same sections, the latter being placed above a queen-excluding honey-board. The reason why a wood division-board was used was to allow the bees to form one cluster, one colony clinging to one side of the board, and the other to the opposite side. The division-board gets clogged with propolis, and it is quite a job to clean it; but some hold there is no need of cleaning it very often, as the colonies retain the same odor in any case.

In the years 1893, '94, '95, '96, the *British Bee Journal* gave all due aid and encouragement to the double-queen system; but we see little about it now.

Dzierzon was a strenuous advocate of more than one colony in a hive, twin hives being his favorites, and he also had four-colony hives in his apiary. He did not advocate these hives to be worked as single colonies, but merely from the increased warmth and comfort engendered by the bees being associated together under one roof.

Some experimenters with the Wells system actually kept as many as four queens—two above the zinc and two below—the two upper ones being young queens to take the place of those below.

In one instance, at least, a swarm issued from a Wells hive which weighed 14 pounds. It does not follow, because the Wells system did not succeed in establishing itself, that the underlying idea should be discarded. The two-queen system requires rather skillful management, and for that reason it appeals more to the specialist than any one else. W. K. M.

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### "ARE BEES REFLEX MACHINES?"

DON'T be scared at the title. It is not so "reflex" or, rather, complex, as it may seem. The title means, in other words, Are bees purposive or reasoning machines, or do they act automatically and unconsciously through instinct? We may say that scientific men are not agreed as to where instinct ends and reason begins in animals. This whole question is discussed in a masterly way; and so far from being dry scientific reading it is intensely interesting.

It has been some time since we promised to begin the publication of this valuable work; but we have been delayed by one thing and another until some of our readers began to wonder whether we were going to make our promise good. This, it will be noted, we are doing in this issue on p. 223.

Dr. von Buttel-Reepen (whose picture appears on p. 222), the author of the paper, is not only a practical bee-keeper, but a man of science. His deductions and conclusions, therefore, on the natural history and habits of the honey-bee will be read with more than ordinary interest. He strikes on a number of interesting problems, viewing them not only from the standpoint of science but from practical every-day work. He does not claim to be infallible, for, in fact, he leaves his readers to do some of their own thinking, placing before them a collection

of interesting data on which he himself draws certain conclusions which the reader may accept or reject as he prefers.

Instead of only a page or two at a time we are placing before our readers whole chapters, and these will be given in every fourth or fifth issue of this journal in order that the reader may have opportunity in the mean time to think over and digest some of the leading points.

So valuable is this paper that we have already printed it in pamphlet form, consisting of 48 pages, which will be furnished for 35 cts. per copy postpaid.

We may say that the work was originally published in German, and caused a great deal of comment in Europe. Dr. E. F. Phillips, of the United States Department of Agriculture, in charge of apiculture, was so much pleased with it that he strongly urged us to publish it in English. After going over the translation we were delighted with it, and now take pleasure in placing it before our readers.

Dr Phillips has read carefully every page of this, comparing carefully the translation with the original German; and it will be observed that he has made in some places a few comments of his own.

As will be noted in the preface the author has carefully revised the old edition, adding some new matter gleaned from his later experience. Taking it all in all, we believe we are offering to our American readers a gold-mine of interesting information on the natural history of the honey-bee, and practical also, because it will enable the bee-keeper to earn more dollars from his bees.

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### BEES VS. SMELTER SMOKE; A SERIOUS CONDITION OF AFFAIRS.

GLEANINGS alluded, p. 616, May 1, to the total extinction of the bee industry in the Jordan Valley country in Utah, and to the successful efforts of the Utah Bee-keepers' Association in compelling the smelter-owners to compensate the apiarists for the loss of their bees and hives. No compensation was made or offered for the loss of the annual income which would naturally arise from the industry. The locality was particularly good for bees; and as the number of colonies it would naturally support is somewhere near 20,000, it follows the annual income lost to the State is between $100,000 and $200,000. This looks like a serious loss to the State.

But this is not all. Other industries are being affected by the presence of the smelters; and Mr. E. S. Lovesy, President of the U. B. K. A., returns to the charge in the Dec. 21st issue of the *Deseret Farmer*. He shows the situation is quite serious. He states, "Even now many are complaining of weakness, indigestion, head dizziness, sore eyes, etc.; and in order to try to obtain better health many people have moved from their homes. With these facts staring us in the face, and also the fact that the soil itself is being destroyed for agricultural purposes, we think that something should be done."

It certainly looks as if something should be done, and GLEANINGS is willing to do all it can to help in the good work; and we are decidedly of the opinion the whole fraternity of bee-keepers would lend a helping hand in a great struggle. United, we stand; divided, we fall.

The smelters can find many localities in Utah where there is no agriculture, and where their presence would do no harm. Public opinion alone will force the smelting-works to move, and we respectfully suggest to our Utah friends to commence at once creating a sentiment against these smelters being permitted to destroy the agriculture of one of the most beautiful valleys in the West. The law of priority certainly applies here with great force; and with the strong backing of public opinion the farmers ought to win. W. K. M.

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### BEE-KEEPING IN THE HAWAIIAN ISLANDS; IS THERE A POSSIBILITY THAT HAWAIIAN HONEY MAY COMPETE WITH AMERICAN HONEY?

IT is not generally known, perhaps, that big syndicates are keeping bees in the Hawaiian Islands, and that the business is said to be very profitable; but, unfortunately for them, their honey does not conform to the United States standards, and therefore must be sold as honey-dew honey, which it greatly resembles. So great are the bee-keeping interests of Hawaii that the United States government is about to send Dr. E. F. Phillips, in charge of apiculture at the Department of Agriculture, to investigate conditions there, and to give the results of his findings in a bulletin which, doubtless, will be issued later. He expects to sail for Honolulu on the 20th of February, on the trans-Pacific transport Crook, of the War Department, returning after a sojourn of some weeks on the islands.

The fact that our dear Uncle Sam (or, more exactly speaking, Dr. L. O. Howard) is sending one of his employees to investigate bee-keeping conditions in our Pacific possessions shows how much interest he is taking in bee-keeping in general. We certainly appreciate the many services he has rendered us already, and especially his interest in this matter. Whether Hawaiian honey will ever be a serious competitor to the American product, we can not say. Cuban honey, at least of late years, has not proven so.

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### LEASING THE PUBLIC LAND.

DESPITE considerable opposition in certain quarters, the proposal of President Roosevelt to lease the land belonging to the federal government is gaining friends rapidly. Buffalo Bill is reported to be strongly in favor of the move. This means a good deal to bee-keepers whose bees graze on government land, for under the new system it would be possible to get exclusive rights to a bee-range, either at a nominal figure or no charge at all, as is now the case on forest reserves. W. K. M.

KEEPING 1500 COLONIES FROM SWARMING.

"My name is O. B. Metcalfe, and I should like to have you tell me how to keep my 1500 colonies of Italian and hybrid bees from swarming next spring. Here in New Mexico I can get no skilled help, with the exception, perhaps, of one man who knows something of bees, so I shall have to do most of the work myself. Can you refer me to some good treatise on the control of swarming?"

"I know of no plan for controlling swarming which has been put into treatise form, and I am not sure that any one in the world knows of any plan which will do away with *all* swarming under *all* circumstances, or during all seasons and in all localities."

"Then you do not think that I shall be able to keep my 1500 colonies from swarming?"

"I do not think that there is a person in the United States who could keep *all* those colonies from swarming in a season conducive to excessive swarming; but I do think that, in seasons where the desire to swarm is only ordinary, swarming can be nearly prevented, and also reduced considerably in a year when the tendency is toward excessive swarming. However, allow me to say that *one* man would have better prospects of accomplishing what he desires along the line of swarm control with 500 colonies than he would with 1500."

"I presume that is right; but in the absence of help to be depended on, I must do the best I can alone, or with what little help I can get. I had thought of making a nucleus from every strong colony, something after the plan you gave on page 1433 of the November 15th issue, 1907; but I wish you would tell me what would be the result if the expected harvest did not come."

"The result would be very nearly the same as it would be in following any similar plan when the crop fails; that is, we should have all of our labor for nothing, or very nearly so."

"But might it not be worse than this? Might not our colonies be better off if we had not touched them if no honey-flow happens to come?"

"Possibly. But I can hardly foresee how this could happen here in Central New York. Tell me what you are driving at."

"Last spring our colonies were storing from one to three pounds a day according to the scale-hive, just prior to May 21; but on the night of that day it froze both the mesquite and the willow, and nothing bloomed to do any good for a month."

"Whew! I thought our late frosts here in New York were bad enough; but we have had no frost so proportionally late in the season. It is rare that we have to make any effort at stopping swarming here before June 5 to 15; and after that date I have never known a frost to kill any thing except some tender plant close to the ground, on some very low land subject to a white frost on the least provocation. This would not injure any of our nectar-producing flora."

"Well, suppose you did have such a frost just after you had formed your one-frame nucleus with the queen, and one comb of brood and bees taken from a strong colony to keep it from swarming. What would have been the effect on such a nucleus?"

"If such a frost should come the first night after the nucleus was made, it would be injured if many of the bees had returned to their old home; but as the most of the bees so separated will remain with their old queen when she is with them, I should not expect any great loss of brood in the nucleus. If cold freezing weather held on for three or four days the loss of brood might be greater; but, generally, after one of our late frosts it warms up the next day, or the day after, and, during such a short spell of cold weather, the bees 'burn' honey enough to keep up the necessary heat to protect their brood, so no material loss is noticed."

"But what if, on the second day, the bees had killed all the drones just before the young queens went out on their wedding-flight?"

"I never knew of such a thing in all my forty years' experience, and I doubt if such could have been known even in New Mexico — not but that I think your bees did kill their drones, but I do not think they would had you been following the plan as given on the page of GLEANINGS referred to. If I mistake not, your drones were killed while the old queen was in the hive, so it was not necessary for the bees to keep the drones; but *with queens just ready to mate*, drones to such a colony are as a bank account to a man in time of famine, and would be as carefully preserved. In fact, the bees would preserve the drones just as carefully as they would the queen, for just at this time drones would be of as much value toward the future welfare of the colony as the queen."

"Possibly you are right. But how about the ripe queen-cells? I noted that the freeze put a stop to the swarming in 48 hours, and that every queen-cell was destroyed."

"If you raised your queen-cells from your *very best* breeder, the colonies rearing such queens would either be queenless or the cells would be kept away from the laying queen by queen-excluding metal; and, so far as I ever knew, the bees would preserve them through any cold spell at this stage of the season. I have known of queen-cells being destroyed, drones killed off, and swarming postponed indefinitely during such a cold spell in the swarming season; but I never knew of drones being killed in any colony with a young queen just ready to mate, nor of queen-cells being destroyed in

a queenless colony, nor in a colony where the queen was kept away by an excluder during the swarming season. Late in the fall I have had queen-cells destroyed to a greater or less extent above a queen-excluder."

"I see there are some things which I had not taken fully into consideration. I had supposed that, if I had been in the midst of making nuclei to stop swarming, the effect would have been disastrous in a season like the last."

"Of course, such a state of affairs as came through your freeze would put a blue aspect over all apicultural affairs; but I do not see why it would have been any more blue, had you been trying to prevent swarming, than it was when you were allowing the bees to take their own course. It seems the freeze stopped all prospects of swarming, as well as all of the nectar-flow, and changed the tide of affairs generally. Such things as these come to us once in a while; but they should not deter us from striving to do the best we can. We should lay our plans with an expectancy of a good season. You remember the old question, 'What if the flowers never bloomed for fear of the storm?'"

"One more question: What kind of queens would I get, if, instead of going around ten days after the old queen was removed, and, cutting the cells the bees had reared, and giving a different cell, I just let them go on and hatch their own?"

"The first thought just here is not what kind of queens you would get, but what kind of swarming *rumpus* you would have. It would be ten times better not to try to stop swarming than to allow the bees to keep those cells they would rear after the queen was taken away. I know you could *try* to cut all the queen-cells but one; but it would be far easier to go through the hive in a hurry, cutting *all* cells, and then giving a cell from your best queen. This would save hunting some perfect cell the bees had reared In shaking the bees off the combs so as to find *all* the cells, always remember that *not one single cell* which has been so shaken can be depended on to give a perfect queen; therefore, unless you clip off the one cell before you shake the frame, you have no business trying to save any queen-cells from that hive."

"But if I should see fit to clip off the cells before shaking, and ignore the question of breeding up to a higher standard of bees, would not such queens be good prolific ones of their kind?"

"If you selected the most perfect of the cells, they would probably give you fairly good queens; but you would have no assurance just when the young queens from these cells would emerge; while, as a rule, such queens tend toward a deterioration of stock rather than an uplifting of it. I do not see where any thing is to be gained by saving such cells promiscuously reared, either in time or honey; but I do see a great amount of uncertainty which will be entirely avoided by rearing your queens from your best stock, and having them ripen just at the time you will be likely to need them for use."

While you are making money at keeping bees why not make all you can? It can be done. Better bees, good management, short cuts, profitable marketing, etc., will help to do it.

Supplies are too high in price to tolerate poor colonies in expensive hives. The remedy is hardly "cheaper" hives but better bees. A poor colony in a "cheap" hive will not give as profitable results as a rousing one in a good hive.

The handling of combs individually, and brushing off the bees, is a thing of the past with me. I can accomplish ten times more in a given time by using shallow supers when removing honey from the hives than by taking out and brushing each comb.

With the increasing demand for pure honey, and the many localities that are proving "no more good" for honey production, on account of the clearing of the timbered land, and cultivation, there need be no fear of an overproduction of honey. In addition to this the pure-food laws will help wonderfully in increasing the demand for pure honey, and there will never be produced enough honey if it is rightly distributed. Hence it is also easily perceivable that the prices will be still better in the future. Prospects were never brighter for bee-keeping than now. It is up to the bee-keepers, however, to make the best out of it.

It pays the bee-keeper to go visiting occasionally. Whenever occasion offers, take a trip around to other bee-keepers, and a short stay with them may make you more enthusiastic when at home again. It may also help you to learn many new and valuable kinks that will save you money and trouble or unnecessary labor. There is nothing like "rubbing up against" others of our craft, and it will only make the bee-keeping ties the stronger; for "we be brethren." This may eventually lead to the better organization of bee-keepers throughout the entire country. "In union there is strength." I always feel well repaid after returning home from such trips.

The tendency here in the Southwest is toward the production of more extracted than comb honey. Section comb honey has

been practically a thing of the past for several years; but bulk-comb-honey production has reached vast proportions. There has always been a great demand for this kind of honey. In the first place, the customers knew it was pure honey, and they had the advantage of getting full weight for their money; besides, the price was lower than that of section honey. The disadvantages, however, are the granulation of the contents in the cans later in the season; and as it can not be reliquefied without melting the combs it can not be kept over the season or for better prices, like extracted honey.

### HONEY-LABELS.

Labels on all your honey packages will pay. They help to advertise. That's why all kinds of canned goods and other packages —yes, almost every thing nowadays—are labeled nicely, bearing the name of the contents or the article itself with that of the producer or manufacturer, and often other matter, such as directions for using, or calling attention to its good qualities. Still, thousands upon thousands of packages of honey leave the producers without any label or name on them. Try labels. They make the cans or cases look neater, hence help to sell, and do a lot of advertising, thus repaying for the extra trouble in two ways. Tin pails and cans, if not too large, can be covered entirely with a label, while glass and large packages bear only a smaller label. On the labels that I am using are given directions for reliquefying the honey in case of granulation; and below this in bolder type, "We shall try to keep both comb and extracted honey, also beeswax, on hand the whole season, and solicit your orders." This also has a place on our letter-heads, and we have received many inquiries for prices of our honey, resulting in sales later. For putting the labels on, common wheat flour, mixed with cold water, was more satisfactory than any other pastes that I have tried, besides being the cheapest and most readily made. Labels of this kind are very much like an "ad." in a paper. "It may be bought by one customer, but will be read by a dozen others."

### CUTTING OUT THE MIDDLE-MAN.

There is less use for the "middle-man" as a business is built up for dealing direct from the producer to the consumer. This has been my object for many years, and it has profited me to deal in this way. The producer should strive to cultivate a confidence between himself and the consumer. Then the customers know that they can depend on getting "a square deal," and they are willing to pay a good price for it. Thus the profits are much larger—both the profits from the middle-man to the producer, the profits which would have gone from the consumer to the middle-man, and generally, also, a little more than this, that the consumer has been willing to pay the producer, all going into the bee-keeper's pockets.

Instead of selling my crop to one or more large dealers I have preferred to sell to a greater number of people in smaller quantities. As stated before, the extra profits pay me well for this; and, besides, it gives me a wider range of customers. I become more directly acquainted with them, and from these to others, so that the chances for disposing of my annual crop at good prices increase from year to year. If my crop is dumped into the hands of a dealer, a lower price is obtained for it, and that is the last of it. Where it goes and what is done with it after that I never know. On the other hand, I do know, and price lists can be mailed when the new crop is ready. Generally such customers buy year after year, and I avoid the danger of finding the middle-man already stocked with honey from somebody else.

### EXHIBITING GRANULATED HONEY.

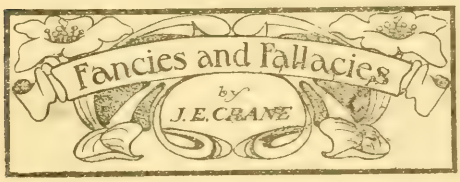
One of the most important features in our apiarian exhibits the past season has been the education of the public in regard to the granulation of honey. The exhibits contained large quantities of honey in the granulated state, and right beside it was the extracted honey in the liquid form. The contrast caught the eyes of the visitors, and no question was oftener asked than "Please can you tell us why *that* honey looks so white?" My answer was always a frank one—"Why, we have this here just on purpose to have you all ask such questions." Then, taking a small jar of each, one of the granulated and one liquid extra, kept handy for the purpose, I would proceed to explain. "You see, this is nice and liquid, just as it came from the hive. Now, that *white* honey here is exactly the same thing that this liquid honey is. Cool weather has caused it to turn hard—it has granulated. Nearly all pure honey does this as soon as cold weather comes, and it is, indeed, one of the best proofs of its purity. If you want to be sure that you are buying pure honey, buy it in this granulated state. Many people prefer it in this way; but those who do not can easily reliquefy it by simply setting the vessel containing the honey on some small pieces of wood in another vessel with water, and heating it until all the honey has melted. It must not get too hot, however, as that spoils its flavor. Hence you see again that this liquid honey in this jar is the same as that white or granulated honey; for we have done exactly what I have told you—reliquefied granulated honey so we could exhibit it in the liquid state, because all of our honey has been granulated for over a month. So you see it is a mistake to suppose that honey is not pure because it has granulated; and then it is very easy to restore it to its liquid state again."

This was harped over again and again, each time bringing out a similar response—"Why, *we* never did know that, and we are so glad you told us. We'll know next time what to do with it when some granulates again. We certainly appreciate your explanation, and thank you many times for the information."

Then the next lot of persons received the same "treatment." As soon as I began to "explain" to one or more persons others would crowd closer so that one talk served a lot at a time. As soon as this dispersed, another crowd congregated, and so on.

This is given here to show how such an important subject can be handled at our fairs. Others should do the same at their fairs. It is very easy, and the sooner the general public becomes familiar with granulated honey the better for it and the producers of extracted honey. Of course, it makes a person hoarse to talk all day long; but I have often thought I could keep up with the fakirs who made their share by talking; and while doing this I used a good deal of the granulated honey for my throat. It is good for that purpose also.

In addition to talking on the subject it is well to have printed matter for the visitors to take home with them. Many will then read over again some of the things they have learned, and remember them better. This was done at both our State fairs at Dallas and the International fair at San Antonio.




I did not suppose it was any thing so very unusual for bees to store honey under their brood as J. E. Hand would have us think. Why, I have had them build comb and store honey outside their hives and below the entrance when crowded inside.

Dr. Miller's method of supplying bees with water is not only novel, but I believe the most practical of any that has been heretofore described. Those who have never given their bees water have little idea how much they will take when it is convenient to the apiary in a sheltered place.

"How long does it take a colony to discover the loss of a queen?" Stray Straw, Dec. 1. Dadant says, "After within an hour," and the editor's opinion is that it seldom takes longer. Yet I have had one or more cases where a queen was taken away, and, so far as I could judge, the colony did not discover its loss till the brood was too old to rear another, and this in the spring of the year.

I am much interested in ventilation of bee-cellars. Last winter my cellar was for a considerable time up to 60°, but with a large opening into a chimney with a good draft. Most colonies came out strong. This winter so far the temperature has been up to 55° most of the time. Only once have I seen it as low as 45°, and then for only a short time. This morning, with a temperature outside at 4°, the thermometer in the bee-cellar stands at 48°. I have a feeling that it is not very objectionable to have the temperature rather high the fore part of the winter.

The statement of the Chicago *Record-Herald* in regard to the present status of the liquor-traffic is of interest. *Harper's Weekly* estimates that at present one-half of the territory of the United States is under prohibitory law, either through State or local-option laws. Prohibition a failure in Maine! So it was claimed for Vermont, so that, after nearly or quite fifty years of prohibition, our State changed to local option; and although most of the towns of Vermont refused to license this infernal traffic, yet for the first four years under local option crime has been more than twice what it was the last four years under prohibition.

I am glad GLEANINGS calls attention to the danger to our country from the destruction of our forests. The American people are a reading people; and if all our papers, magazines, and trade journals call attention to the danger ahead it would seem as though the evil might to some extent be averted. A bee-keeper in a nearby town has bought a large tract of forest land near his home to preserve the basswood for his bees. I believe the investment is a good one. By gradually cutting out undesirable varieties of trees, and allowing the young seedling basswoods to grow, in time he would have not alone good pasturage for his bees, but also a fortune in his hundred acres of basswood forest.

Professor Cook, in his interesting enumeration of the enemies of bees, Dec. 1st, speaks of that very little bee-moth with a very great name, "*Ephestia interpunctella*," saying it will be little feared by any bee-keeper worth the name. Well, it isn't so bad as it might be; but where, after a bad season and heavy losses, such as sometimes occur, and we try to keep the combs over for two or three years, and these little scamps get into them, they are likely to do a good deal of harm. One of the worst counts I have against them is that the larvæ seem capable of withstanding almost any amount of cold without harm, while the larger moth larvæ are always killed in our bee-houses during the winter.

I believe Mr. H. A. Sackett's idea of covering sections of honey with transparent paper is a new idea of more than usual value. For more than half a century the New York markets have been partial to honey put up in glass, while in Boston it must, to bring highest prices, be in paper cartons. Now, here we have a compromise—honey in paper, but transparent, and which answers for glass. It also keeps honey from dripping, which alone should recommend it. I wonder if tinted paper would make honey look as

attractive as tinted mosquito-netting improves a basket of peaches when spread over them.

R. F. Holtermann says, p. 1494, "If I had honey-dew once outside of a hive I would keep it there." Hold a moment, my friend. I want to tell you something. That honey-dew is worthless—yes, worse than worthless—to sell for honey for food. I should not want to sell it even to the bakers; and as to making vinegar, it will be honey-dew vinegar, and you had better not sell that. Some twelve or fifteen years ago we had a season here in which the bees the last of August and early September filled their hives almost solid with honey-dew (insect) honey. Of course, I lost heavily the following winter, and had the next spring thousands of pounds of this dreadful honey-dew out of their hives. What did I do with it? Why, I just saved it carefully and fed it in spring for several years to colonies that were short of stores, or for stimulating brood-rearing. I don't see but it was worth as much as other honey for that purpose.

All honor to Gov. Frank Hanly, A. I. Root, and a host of men and women who are fighting to overthrow the liquor-traffic. For many years they have been the butt of ridicule for politicians, saloon-keepers, and fools; but the tide has turned, and now half of our country is under wholesome prohibitive laws. Soon it will be very respectable to be on the side of temperance. Already saloon-keepers are tolling bells as they close their saloons for good, and I have read of one who actually committed suicide, as the outlook for his business was so bad. The strongholds of the enemy are falling thick and fast.

Well, what has all this to do with bee-keeping? Just this: When the hundreds of thouands or millions of women and children who now go hungry because of this wicked traffic shall have bread enough to supply their wants they will want honey to go with it, and there will be money enough to buy it. There will then be no lack of market for all the honey we can produce, and at good prices too. Shall we not discern the signs of the times?

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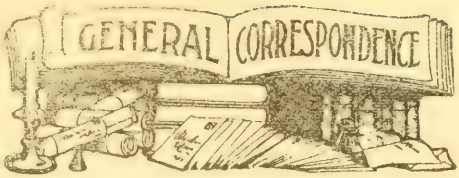
ANOTHER BEE-PRESERVE.

PRESIDENT ROOSEVELT has just signed a proclamation which will have the effect of creating the Verde National Forest. It is situated in Maricopa and Yavapai Counties, Arizona, on the west side of the Verde River. It has been deemed wise to set aside this land with a view to protecting the flow of water in the Verde River. It has been indorsed by the Reclamation Service. The "trees" are said to be valueless by lumbermen; but bee-keepers are probably well satisfied with them, seeing they are mostly nectar-yielders of no mean order. It is also probable some valuable timber tree will be found to thrive there, very likely one of the eucalypts. W. K. M.




## QUEEN-REARING.

**Should the Honey producer Rear his Queens or Buy them? Using Extra Cells from Colonies that Cast Swarms only Perpetuates the Swarming Tendency.**

BY E. W. ALEXANDER.

Frequently I am asked whether it pays a producer to rear his own queens. This is a rather hard question to answer, for so much depends on the ability of that producer, and on his experience in rearing good queens. Many circumstances also have a bearing on the subject, such as the number of queens required annually, the kind of honey produced, whether comb or extracted, the time the surplus is secured, and the liability of the young queens mating with undesirable drones. All these circumstances and many more should be well considered before the producer decides to rear his queens. If he has but few colonies, and is anxious to learn all he can about bee-keeping, without any regard to the amount of surplus he may secure, then I would advise him to purchase a good breeding-queen and learn as soon as possible how to rear choice queens. In that way his experience will be worth much to him as long as he continues to keep bees.

One of the worst troubles in rearing a large number of choice early queens here at the North is our cold backward spring weather. We use about 400 young queens a year in our apiary, and have tried many times to rear them during the latter part of May and fore part of June, so as to have them laying about June 10; but it is almost impossible to rear so many good queens at that season of the year. If we wait till the latter part of June to rear them, then the bees from these queens are of but little use as honey-gatherers until after the best of the harvest is over. So we find it much better to pay considerable money each year for our queens instead of trying to rear them.

About the first of December we gave a noted queen breeder our order for 400 queens, to be sent us between the 1st and 20th of June next. It requires time, bees, skill, and honey to rear good queens; and when they can be bought for from $65 to $75 per hundred, and extracted honey is worth 7 and 8 cents per lb. by the carload, it does not pay to sacrifice much surplus in order to rear queens.

When the ordinary honey-producer attempts to rear his queens he is very apt to make some serious mistakes, partly through ignorance and partly through a lack of time

to give this part of his business the close attention it requires.

If he would procure a good breeding-queen and rear all his queens from her, then weed out and destroy all small inferior queens as soon as they hatch, he might have choice queens without much expense except for a part of his time, and a certain per cent of his surplus. There is quite a difference of opinion as to the necessary amount of bees it requires to rear choice cells and queens. Some claim it can be done with but few bees; others want strong colonies to produce choice cells. I know we could never rear queens that would suit us unless we used so many bees in rearing our cells that it would make a sad inroad on our surplus honey.

The most common and the worst mistake that can be made in rearing queens is saving the natural cells and virgin queens from colonies that have cast natural swarms. I have heard this method recommended by men who were considered quite good authority, and it seemed as if I could not keep still and listen to them. We spend valuable time at our conventions in discussing various ways for preventing natural swarming, and we frequently see long articles in our journals from noted writers recommending certain methods to prevent it. Almost daily during the summer season we see bad results in our apiaries from excessive swarming, and then so many will do the very thing of all things that will perpetuate the desire to swarm, by saving cells and virgins from the colonies that are the first to swarm; and invariably when this objectionable method has been practiced a few years a strain of bees will be developed that is ready to swarm both in season and out of season. Nor is this all; for a great step backward is taken, and the bees from the first will begin to degenerate, and part of their yellow color will be lost; and the bees themselves being crosser and more irritable, they fail to gather as much surplus, and they become more nervous in winter. In a few years the apiary will have degenerated until it is of but little value. It must then be built up again with good stock.

In view of these facts do not take such a step backward as will bring only loss, trouble, and disappointment. When a colony has many valuable traits, send its queen to your queen-breeder, and write him, describing all those good points, and request him to rear the queens from her unless he may have a still better breeding-queen. In this way the choicest of queens may be reared from the best stock, and improvement can be made along the lines most desired.

As I look back I find that the seasons when we received our largest surplus have been, without a single exception, the ones following the year when we reared our queens from some special queen whose colony had given us an unusual amount of surplus the previous summer. It requires only four or five years of careful selection to make a great change in bees in their honey-gathering qualities, and in their disposition, until they seem like a different race of bees. The color is one of the quickest of all points to show improvement, and the tendency to swarm can be reduced to a surprising extent; but special care must be taken to select the best standard. Nor is this all. The drone-mothers must be just as choice as the queen-mothers. You must rear all drones from as choice queens as you rear your queens from. In other words, drones must be developed the same as the queens. This may seem like an unnecessary amount of trouble; but there is little of value in this world that does not cost labor to acquire.

There are many bee-keepers who might make great improvements in their bees if they would only start in the right way. They seem to think that, if they buy a breeding-queen once in a year or two, it is about all that is necessary; and if her colony swarms they will try to save some of the queen-cells, and then think they are improving their bees. Such a line of management is no improvement; and if that is the best that can be done, then it would be better to buy all the queens from some one who is doing better. The whole subject turns on this point: The best queens, bought or home-reared, are none too good, and the aim should be to make them still better with each succeeding generation.

Delanson, N. Y.

[This question of using swarming-cells for the rearing of queens for the production of honey is a very important one. If it is fact, that the practice accentuates the swarming tendency in our bees, we may well stop and ask the question, Does it pay? We should be glad to hear from our subscribers who may have been gathering data on the proposition.—Ed.]

## THE SIBBALD WAX-PRESS.

### A Combination of the Hatch and Hershiser Principles; a Description and How to Operate.

BY R. F. HOLTERMANN.

At the annual meeting of the Ontario Bee-keepers' Association in Toronto, and by special request at the Brant District Bee-keepers' convention, Mr. H. G. Sibbald, Claude, Ontario, gave a description of a wax-press which was considered valuable by those present.

It would be necessary to go through all the stages of wax-rendering and to recount all the thoughts, time, and material that have been expended upon improving the methods of rendering wax, to parallel in magnitude the enormous amount of wax and the sums of money which have been and are being thrown away in the imperfect rendering of old comb, cappings, and the like. This amount is, perhaps, more than doubled by money which has been worse than thrown away by allowing the wax-moth to destroy comb upon which the bees have perished.

Let us profit by the past, and at least use some of the most up-to-date methods obtainable.

For even a small bee-keeper, a press of some kind, as over the old methods, will soon pay for itself. There is practically no economic method of rendering without it. Machines defective in one locality or under one condition may answer well in another.

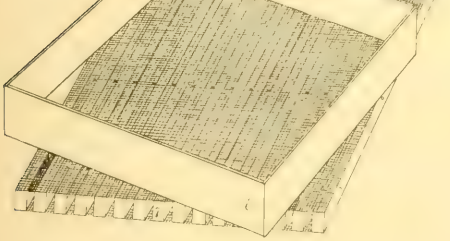
For instance, in a hot climate, or where wax-rendering can conveniently be left until hot weather, the method of heating the wax in a vessel on the stove and then pressing in a machine not being heated on the stove, is perhaps the cheapest machine and the most rapid and economic method, and will answer well. But where the spare time is in the winter, and the operating-room can not be kept at a very high temperature, the wax at any exposed part or among the cloth itself soon gets cold, and the wax thus confined results in loss.

In the Hershiser wax-press we have a machine which remains on the stove and has heat applied to it while in operation, and it can, therefore, be operated in a comparatively cold room; but it takes considerable time to heat the machine and its contents. From my experience each of the above machines will do good work, and, on the other hand, with them, as with any machine, wasteful work can be done.

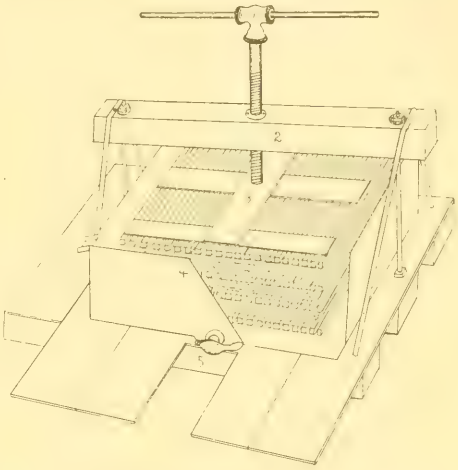
Mr. Sibbald, who was for two years president of the Ontario Bee-keepers' Association, and who is a successful, intelligent, and extensive honey-producer, and who has in the neighborhood of four hundred colonies of bees, and is a prize-winner in both comb and extracted honey, and who is one of the six foul-brood inspectors of the province, stated that he had designed the press, availing himself of the best thoughts of other inventors. He had arranged the machine so that any one who had a Hatch-Gemmell press could use the most expensive part of it in the new design.

In describing the machine, Mr. Sibbald states:

"The sketch makes the principle of the press pretty clear. To operate, a common stove and boiler may be used for melting the



old combs or slumgum, which, when thoroughly melted and about to boil, is dipped or skimmed off, and poured into form 6, which has already been placed upon the bottom set of slats, and is covered by a cheese-cloth. When a depth of about two inches has been filled in the cheese-cloth the latter is folded over and pinned. The form is then taken out and another set of slats placed upon the cheese-cloth and contents just prepared. The form is again placed on the slats; a cheese-cloth is again spread over the form, and two inches deep again filled into the form, when the cloth is folded over and pinned as before. Form 6 is again taken out and the operation again repeated, and the last cheese is made and the form removed, when a top set of slats is put upon the pile.




The tank (4) is then pushed back until under the screw, which is then tightened. The hot water from which the melted combs or slumgum has been skimmed is then poured into the tank (4), filling it up to within half an inch of the overflow lip, and so as quite to overflow the slats and cheeses. The tank is covered by means of two boards so as to keep all warm, and the screw is given a few turns down. This is left for a few minutes while the boiler is again filled. Continue the turning-down of the screw every few minutes; loosen it occasionally, and allow hot water to soak back into the cheeses and thereby wash out the wax, when the screw is again tightened.

By the time the next boilerful of old comb is nearing the boiling-point the wax is overflowed or skimmed off by either adding more hot water from a second boiler or by tipping up the opposite side until the wax which is, of course, on top, is all run off.

The water is next let off from the top in front, and used for the next boilerful. Being still quite hot, time and heat are saved. Now loosen the screw, draw the tank forward until clear of the top-bar (2); take out the three top sets of slats and refuse. Put in form (6); spread a cheese-cloth over the form as before, and proceed to refill the machine.

It will be seen that the system of gravitating the beeswax away from the material pressed, and away from grates, etc., can readily be applied to some machines in use I might add that, in heating old comb, cappings from comb, or the like, if there is any honey slightly fermented among it, the

boiler or other vessel will boil over very readily, and may result in the destruction of the building. Where such is not the case the heated mass will not boil over so readily; but just the same, *never leave a stove unattended that has such material upon it* that is boiling or may come to the boiling-point at any moment. I have known of at least two buildings being destroyed by fire in this way.

Brantford, Canada.

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## THICK SYRUP VERSUS THIN FOR WINTER STORES.

### Why a Thick Syrup is to be Preferred.

BY ALLAN LATHAM.

I have been requested to express my views upon the subject of feeding thick syrup late in the fall after I have first read Mr. Alexander's article on page 29.

There is scarcely a statement in that entire article which does not meet my unqualified approval, there being but one thing which I should wish to modify. I question the wisdom of feeding so large an amount as 14 lbs. of dry sugar to each colony unless the combs are very empty.

As eight or ten pounds of stores will carry a colony to the time of frequent spring flights, it seems scarcely warrantable for us to put an unnecessary amount of this foreign feed into our hives and thereby lay ourselves more open to the charge of sugar-fed honey. We can truthfully say that a colony of bees will, beyond all doubt, take care of ten pounds of sugar syrup which is fed late in the fall, even though they have abundance of honey beyond this; but there is too much likelihood of syrup becoming a part of future surplus from a colony which has at the time of the feeding a large store of honey, if more than about ten pounds be fed. Let us err on the right side rather than on the wrong side, if we are to err.

I believe in feeding thick syrup to bees for their winter stores, rather than thin, and feeding this syrup late. Why? Well, for two or three reasons — reasons which the editor has suggested in part in his footnote to the article of Mr. Alexander's. To feed thin syrup means a loss of both syrup and bee energy. The thinner the syrup, the greater the loss. Even with the proportion mentioned by Mr. Alexander there is a loss; and instead of there being 21 pounds of thick syrup in the combs as stores after feeding 14 pounds of sugar made into the 2-to-1 syrup, there will be but 17 (or at the most 18) pounds of syrup. If these same 14 pounds of sugar be fed in the form of a thin syrup, the resulting stores will not exceed 14 lbs of thick cured syrup, and they may fall even below 14.

When a thin syrup is fed, the bees get greatly excited, and will consume much syrup in the generation of useless heat; at the same time they will use up much of the life energy which they possess

It is my honest belief that the idea that bees must have an inverted sugar for their winter feed is sheer nonsense. The fact that bees invert sugar when fed to them thin led to the belief that the inversion was essential before the syrup was fit food for the mature bee. Where, may I ask, is the proof, or even logical demand for such a conclusion? Too many times have many of us utterly disproved that conclusion. My experience in the wintering of baby nuclei has offered me abundance of proof, for my best success has always attended the feeding of thick syrup late in the fall. The absurdity of the claim is seen again when we consider that one of the best of winter feeds for safety is a cake of sugar laid over the frames. This cake of sugar must be of the non-inverted kind, too, for otherwise it is likely to get thin and run down upon the bees to their ruin.

That the need of using an acid for the purpose of inverting the sugar fed is lacking so far as rendering the syrup fit food for the bees I have no doubt; that it is entirely lacking as regards the rendering of the syrup proof against crystallization I feel less certain. Personally, during all the years I have kept bees, and with all the winter feeding which I have practiced, I can not now recall one single instance in which the syrup crystallized in the combs. If it did so, it was to such a small extent as to escape my notice. I never use cream of tartar or other acid.

I have, however, never done much feeding of syrup as thick as 2 to 1. I have always found the bees little inclined to take care of syrup thus thick. Fed as Mr. Alexander advises—warm, and right under the cluster—it may go all right; but fed in nine-tenths of the various forms of feeders would result in only about one-tenth of the syrup being taken by the bees before the syrup got cold. After it was cold they would pay about as much attention to that syrup late in the fall as they would to ice-water. It is so thick when cold that the bee can scarcely draw it through its tongue, and it has no patience to stay away from the warm cluster long enough to get a load of syrup. No enthusiasm is aroused, and the feeding lags. If fed a trifle thinner, the bee loads up more quickly, and just enough enthusiasm is aroused to warm up the hive and make that syrup go into the combs with a rush. I find that a 5-to-3 proportion brings about such a result.

If fed 2 to 1, unless the bees take the syrup up immediately there will be more or less crystallization over the surface and along the edges, resulting in loss and bother. My method of feeding is by means of an atmospheric feeder, simply a fruit-jar or tin can inverted full of syrup upon a piece of thin board, and a wire nail placed under the edge of the can — a method too fussy in a large apiary, but excellent in a small one. Four quarts thus arranged in an empty super right over the brood nest will go over night, or before the next four quarts are fed the following night. Twelve and a half pounds of sugar made into 20 pounds of syrup will be taken in two feeds, and will result in about 15 pounds of ripened stores. If fed

right after the last brood is out of the cells this syrup will be mostly stored right where it will do the most good—that is, right about the brood-nest and within it. It will be the feed of the bees till spring arrives with its days of frequent flights. Less than that amount is enough unless the hives are very light.

There can be no question that we can winter our bees better upon sugar than we can upon ordinary honey. I had that proved last winter when my observatory hive which I had kept bees in continuously for nearly four years became depopulated. In the fall of 1906 it got enough honey to winter on, and I did not feed it with syrup as usual. The honey killed those bees, or, rather, the pollen in and about the honey. The winter was not severe, whereas three winters ago that little colony wintered through one of the hardest winters we have had for many years —the winter when there was such a frightful bee-mortality. Sugar syrup took them safely through.

Yet I feel that we should be slow in advocating this feeding of syrup except as a necessity. In a locality of mild winters, where bees have occasional flights, it is doubtful wisdom to go to the labor of substituting syrup for honey in our hives—especially as it will be difficult to defend the practice upon the ground of necessity, and we shall lay ourselves liable to a serious misunderstanding. It is difficult to convince the public that we are honest so long as we open up a chance for the public to spy a possibility of dishonesty.

For our Canadian friends, and also those in the far north of our own country, to use syrup as a regular winter food is an act so easy to defend upon the ground of necessity that no one should condemn it. Possibly for others of us further south to feed a few pounds of sugar just to get the bees through the first of the winter, or even to early spring, might be easily defended; but for one of us to go to a hive which has already 20 or 30 pounds of honey in it, and stuff that hive with nearly as much syrup, is decidedly wrong. We are tampering with honesty there, or at least playing with fire Except in this one particular, as I stated above, I can agree with nearly every word in the article on page 29.

Though it may not be according to the teachings of years, late feeding of thick syrup is the thing, and not early feeding of thin syrup, if it be simply a matter of furnishing the colony with winter stores. If the purpose be other than to furnish winter stores, then it's another story, and that story I will not tell here.

Norwich, Conn., Jan. 8.

[In these days of the effective working of our national and State laws against all forms of adulteration of food stuffs, we have no fear that any syrup will be fed for any other purpose than to supply a winter food or to stimulate brood-rearing in the flying season. Sugar syrup, even if fed thin, and inverted, is, by our modern methods of analysis, very easily detected, and no one, even if he be disposed to be dishonest, would dare take any chances. Bee-keepers are glad that it is so, for their product (honey) is of such superior merit that they do not need to cheapen it by the addition of an inferior sweet

The question of a thick *versus* a thin syrup is still open for discussion. We should be pleased to hear from a good many who are in position to offer facts.—Ed ]

## HOW SWARMS CHOOSE A LOCATION.

### More Observations Confirming Those of G. C. Greiner.

BY J. C. BALCH.

The article by G. C. Greiner, page 1507, of the Dec. 1st issue, is in line with my experience. I remember that, in the winter of 1895, in Kansas, I lost quite a few colonies of bees. The combs were cleaned of dead bees, and the hives left on the stands with the entrance open. In the swarming season there were five swarms that came and took possession of empty hives in the apiary, and I know they came from parts unknown, because my bees were Italians, and those were blacks. The swarms all came in the forenoon, between 9 and 11 o'clock. I would see a few bees going in and out of a hive the day before they came, and the quantity of bees increased in the afternoon till there would be almost a pint of them around the hive, very restless, and busy going in and out, and, I think, going to and from the hive to the swarm and bringing other bees with them; then when night came they all went away; and the next day, as soon as the dew went off, and it began to get warm, the swarm came and went right in at the entrance. They did not stop to cluster, but just tumbled over each other in getting into the hive.

I once noticed some bees working busily around an empty hive all day. The next morning a neighbor came to my house a little after sunrise, and said he had found a swarm of bees. I went with him and hived them for him. They were about 30 rods from the apiary; and after hiving the swarm there were no more bees working around that empty hive. I am satisfied that, had he not found them, they would have hived themselves that forenoon in my hive.

Two years before that, there were three stray swarms that came to my apiary and went into empty hives in the same way. They always go into hives with combs in them the first year. It was into my extracting-supers they went. I had set them out in the apiary, preparatory to putting them on the hives. There was a pile of five or six supers. They were not set up perfectly true, and so left an entrance so the bees got in. Absconding swarms seldom go into a new hive unless there are three or four empty combs in it.

Ferndale, Wash., Dec. 11.

## WINTERING IN A SLIGHTLY DAMP CELLAR.

### A Good Record; Disturbances Seem to Do no Harm.

BY WM. L. COOPER.

Having read with much interest Mr. Alexander's article on the necessity of quiet in an ideal bee-cellar, I think that a short account of the successful wintering of bees in a cellar which is by no means ideal may be of interest to some readers of Gleanings. My bee-cellar, which has been in use for that purpose for six years, is beneath a two-room dwelling-house. I never thought it a particularly damp cellar; but as roots do not dry out in it, it would not come under the definition of a dry cellar as lately given in Gleanings. Every day in the course of the winter, and often several times in the day, I am down in the cellar with a lantern, getting roots for the cattle. At least once every day the root-pulper is at work there—a thing not conducive to quiet. I admit that I was very nervous as to the effect of the pulper on the bees, but the results have proved satisfactory.

Last year seventy colonies went into winter quarters here, and the same number came out, apparently nearly as strong as they went in. Of nine colonies weighed, the lowest honey consumption was 5 lbs.; the highest, 14 lbs.; the average, rather over 8. The year before, 42 colonies were wintered without loss. In the six years, I have lost four colonies in this cellar, in every case from want of stores. The temperature varies from 42 to 47. There are three outside ventilators, and a pipe which passes through the floor into the stovepipe of the room above. One or more of the outside ventilators are closed in intensely cold weather, say from 30 to 40 below zero, especially if there is a high wind. These ventilators are wooden pipes four inches by eight; the one into the stovepipe is a four-inch galvanized-iron pipe.

The hives have their summer entrances, and are raised from the bottom-board at the back by two ⅜-inch blocks. In bringing bees up from the yard, a piece of lumber is put in the entrance to prevent bees flying. On two occasions I forgot to remove this from a hive, but they seemed to winter about the same, so I suppose so much ventilation is not essential.

Apparently it is universally agreed among bee-keepers that brood-raising in the cellar is detrimental. My general rule is to set bees out on the first suitable day after April 15, and I generally look over every colony as soon as possible. I should say that, out of every ten colonies at this date, one will have a good deal of sealed brood and a few young bees; two will have a little sealed brood; five will have more or less unsealed brood, and two with eggs. I do not recollect ever finding a queen-right colony without eggs when taken from the cellar. It seems to make no difference what date bees are taken out after April 15, brood in something like the proportion mentioned will always be found. I have been unable to see that the vitality of the colony is seriously affected by this cellar brood-raising.

Just after getting bees out last spring we got a warm day. I had looked over ten colonies when it clouded over, and for two weeks after that it was not fit to open a hive. I was very sorry that I had meddled with those colonies at all. Yet when I next examined the apiary every one of the ten had progressed in brood-raising, proportionately to their strength, more than those which had been left alone. Was this a coincidence, or had the stirring-up actually stimulated them?

#### A FURTHER REPORT ON THE ALEXANDER PLAN FOR WEAK COLONIES.

Last year you published an article by me describing my failure with the Alexander method of building up weak colonies in the spring. The bees did not fight, but the lower colony simply declined to assist the upper, and itself did not do well. This year I tried again. In one case it was a brilliant success, both colonies building up in a way that seemed almost incredible. In four others it failed again, and in three out of these four I have placed the cause of failure—the queen in the weak colony was "no good." With Mr. Alexander's careful and methodical weeding-out of all poor queens this would not occur; but I suspect it accounts for many of the failures reported. Still, the fourth case remains a mystery to me. The lower colony was very strong, and there was no fighting; but two weeks after placing the weak colony on top there were just about as few bees in it as when it was first put there. The lower bees did not even help themselves to the unsealed honey, of which there was quite a lot. I had intended to raise a frame of brood and see if that would draw them up; but, finding a queenless colony, I transferred the top queen to it, and she did excellent work there.

Cannington Manor, Sask., Can.

[The cellar here described we should say is not necessarily a bad place in which to winter bees—quite the contrary. The dampness present is rather in its favor than otherwise. A place that is bone-dry is not as good as one where there is a reasonable amount of moisture. If a pudding is to be judged by the eating of it, this cellar is a good place in which to winter bees.—Ed.]

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#### THE AMERICAN HIVE SYSTEM IN EUROPE.

One of the best bee-journals published in Germany is the *Deutsche Illustrierte Bienenzeitung*, published in Leipzig by C. F. W. Fest; yet in the number for January, Pastor Sträuli makes a strong plea for the American hive system. Some of the best bee authorities in Germany write for this journal—for example, the two Kranchers and Weygandt, so it can not be said that it is not representative of the country. In the same issue is an answer by Dr. Kuckuck himself to criticisms of his book on parthenogenesis by Dr. Buttel-Reepen, of Oldenburg. W. K. M.

## MAKING HIVES BY WIND POWER.

### A Home-made Windmill and Saw-table Constructed Wholly of House-building Material.

BY T. P. ROBINSON.

I never intended to be a bee-man. I began to keep bees when I was 16, caring for father's bees because they always stung him so fearfully. I was as poor as a church mouse when I was 21, and I began to keep bees for the money there is in them. Now I market many thousands of pounds of honey annually, although the business with me is but a side issue.

When my apiaries, in recent years, amounted to hundreds of colonies I found that, to buy factory-made hives, was a fearful drain on my bank account. Being a born mechanic, and a good practitioner of mechanical art, I determined to turn this talent to account in manufacturing my hives. It was a cheap matter to construct the saw and table necessary for making the hives; but the power to turn the saw was quite another thing. It would have been an expensive item in my case to install any of the artificial powers now in vogue. There was no water that could be "harnessed," but I was fortunately located on one of the great prairies of Texas where there is no obstruction to the strong steady winds

I knew that there were hundreds of thousands of horsepower going to waste daily on my premises, which, if "harnessed," would do all the hive-making that I should want.

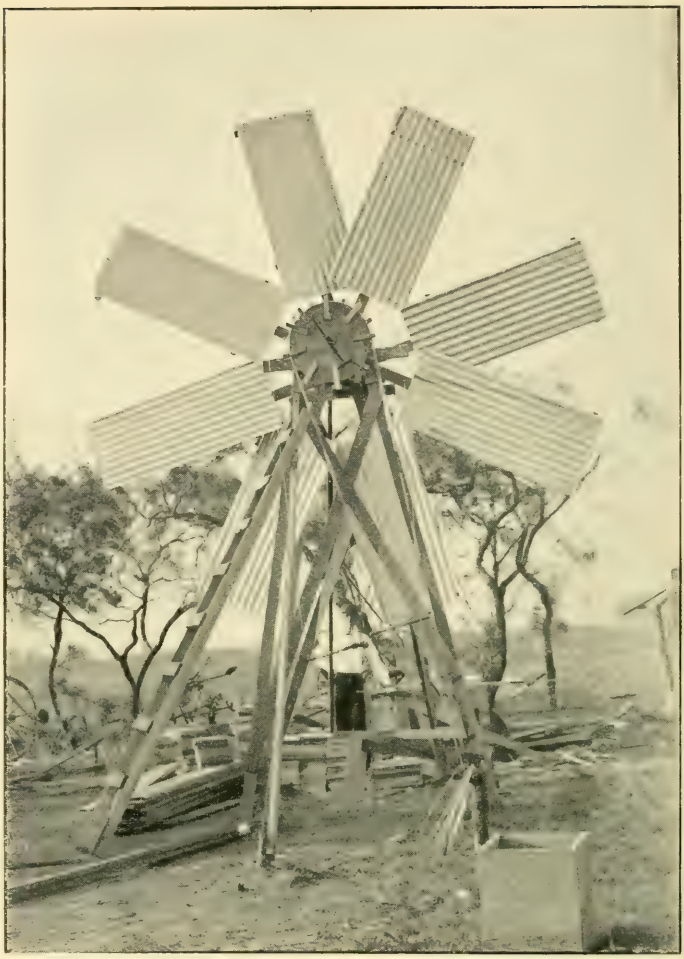
I therefore constructed a windmotor which is a marvel of economy, simplicity, and power. I proposed to construct this out of house-building material, without damaging any of it over 10 per cent for house-building purposes, confining the damage to small items.

I procured a heavy 2½-inch white-metal gas-pipe nearly six feet long for the axle of the big mill. I purchased 8 2×4-inch scantling, 12 feet long, for the trestle and for the spokes of the wheel. The trestle for the mill is stationary, each part being braced with scantling. The horizontal scantling are bolted to posts that are buried deep in the ground. I made iron bearings for the bolsters of the trestles, in which the axle revolves. In the front I put on a two-foot pulley, securing it to the axle by means of a pin. Back of the big windwheel, and out of view, I placed a solid wooden pulley, secured to the axle, which is used for a friction-brake.

The windwheel is of simple construction, as shown by the photograph. I used twelve-foot scantling for the spokes, put two arms across on each end of the scantling. Ten-foot corrugated roofing was cut in two, making sails 5 feet long and 26 in. wide. These I secured to the spokes and arms by means of screws and nails driven into the scantling at the edge, and bent down over the metal.

T. P. ROBINSON, BARTLETT, TEXAS, A BEE KEEPER WHO SAWS LUMBER FOR HIVES ON A HOME-MADE WIND-POWER SAW.

To make the framework more secure, it was guyed to the ground with telephone wire. The mill is nearly 20 feet high to the top of the sails. The power is transmitted by means of a rope belt from the pulley on the main axle to a pulley on an 18-foot ¾-inch gas-pipe used for a line-shaft. On the opposite end of the line-shaft a two-foot pulley is placed under the saw-table, on which a belt 2 inches wide is run to the six-inch saw. The table has a top 3½ ft. by 4 ft., on which is placed a movable top, set perfectly square in every direction with the saw. The top of the table, instead of the lumber, is fed to the saw in much of the work. This guarantees square cuts in every direction. The saw and mill are geared 40 to 1, and I have seen the mill clip off over 100 revolutions per minute, giving a rim speed on the saw of over one mile a minute. At this speed the only trouble the operator has is in getting boards to the saw fast enough.



ROBINSON'S HOME-MADE WINDMILL FOR SAWING HIVE LUMBER.

The whole affair is set north and south so as to utilize the prevailing winds. It fronts south, but it runs just as well with a north wind. Of course, it will run backward; but all the operator has to do is to cross the driving-belt.

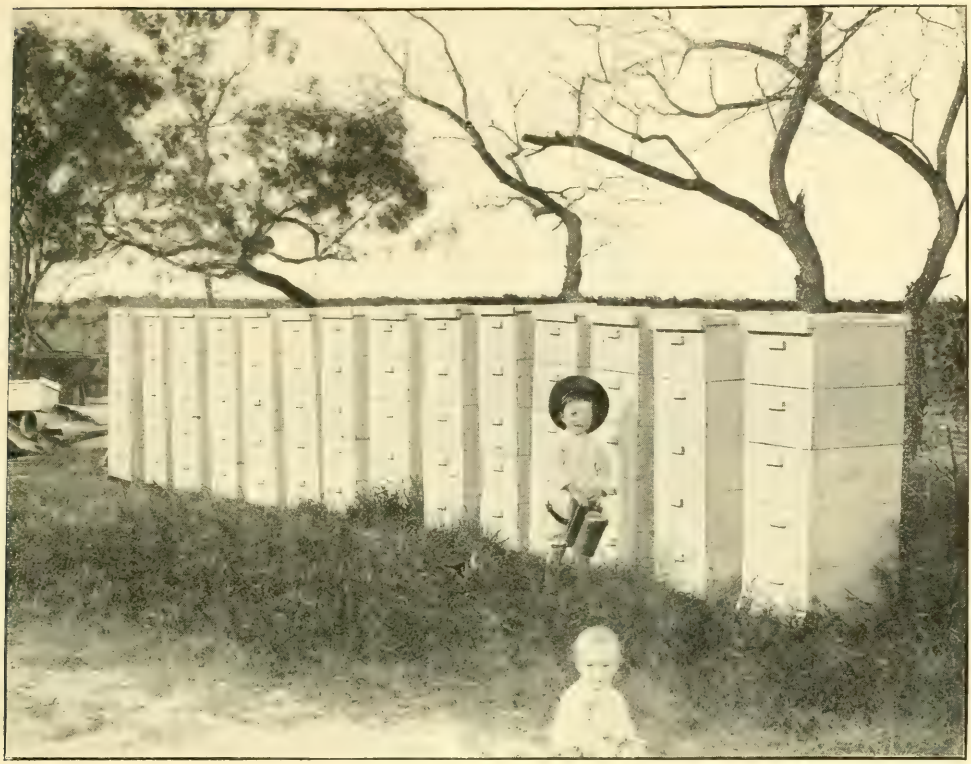
The photograph of the mill shows the piles of cut hives at my feet, showing the results of an hour's run. In another photo are shown a few supers and hives nailed and painted, as a product of this hive-plant. They are good enough for me.

In another engraving is shown a ten-frame hive complete, every bit of the sawing for which was done by the mill. Notice the construction of the lid. It is a little heavy, but will stand the weather. It can not warp, as two separate pieces above and below are clinch-nailed through and through. The frames are not self-spacing, but are of the regular Langstroth dimension, and therefore interchangeable with the Hoffman frames. The ten-frame two-full-story hive complete, with 20 frames for extracted honey, costs about 60 cts. for material.

The mill or hive-plant complete cost about $12.00 for material, all told. I did all the work, made all the pulleys, mandrel for the saw, and all boxes or bearings, etc., here at my shop. The outfit paid for the material the first day it was run. I shall use the material in building as soon as I am done making hives for use. I have no hives or bee-supplies to sell.

Bartlett, Tex., Dec. 4, 1907.

[Any one who has skill enough to make a mill like this will certainly be able to make hives. The whole arrangement is very simple and ingenious, and we see no reason why some of our subscribers of a mechanical turn of mind could not do likewise. The scheme of using corrugated iron for the sails, and then using the material for building afterward, is certainly very unique. We should not have supposed that a mill that could not face the wind squarely at all points of the compass would be a success; but in territory such as our correspondent describes, it evidently does the work.—Ed.]



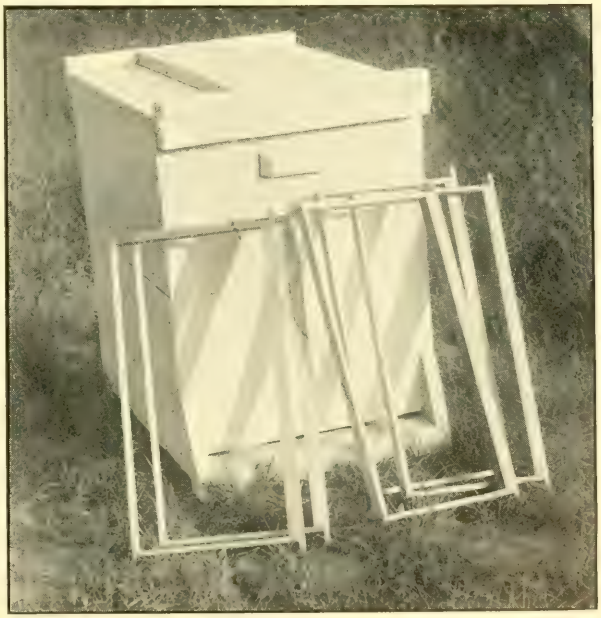
A PILE OF HIVES MADE WITH ROBINSON'S WIND-POWER BUZZ-SAW.

## UNCAPPING-BOXES.

**Melting the Cappings as Fast as they are Sliced from the Combs; a Rapid Method for Separating the Honey and Wax.**

BY H. H. ROOT.

Disposing of the cappings at extracting time is a subject that has been given much thought in the past; but, until recently, the various uncapping-cans and boxes have all been constructed in such a way as to provide means for holding the cappings while the greater part of the honey drained out of them. The dry (?) cappings were afterward melted up for wax. It takes considerable time for even the bulk of the honey to drain out, and so extra boxes, barrels, or cans are invariably pressed into service. Within the last year or two, several producers in California have been devoting their efforts toward an uncapping-box that would melt up the cappings as fast as they are sliced from the



TEN-FRAME HIVE COMPLETE, MADE WITH ROBINSON'S WIND-POWER BUZZ-SAW.

combs, thus permitting the honey and wax to separate readily after being drawn off through a spout into a pail or can. Among those who have been working on the idea may be mentioned M. H. Mendleson, John Y. Peterson, and L. E. Mercer. We intend to present descriptions of the other plans later; but since we have received the engravings of Mr. Mercer's outfit we will describe that first.

Mr. Mercer has been working on this problem for some time, and he has developed an outfit which he has used with a considerable degree of satisfaction. The general plan is shown by the accompanying engravings.

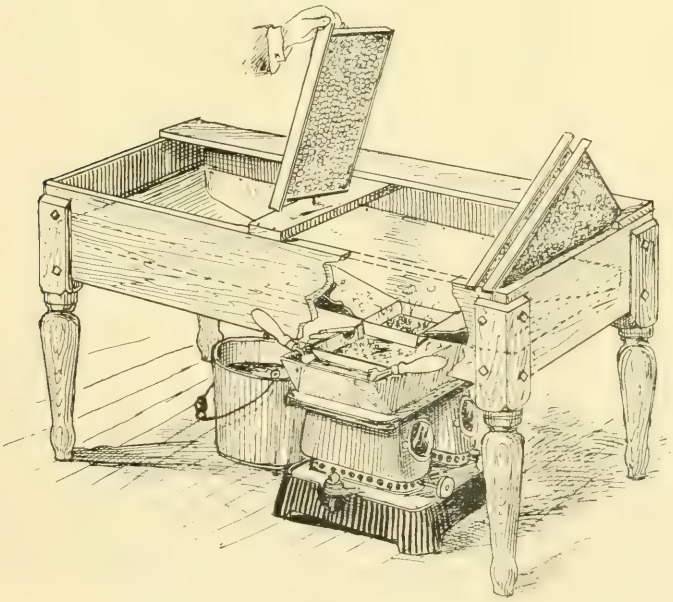
The plan of operation, in brief, is as follows:

The combs are uncapped as in any ordinary uncapping-box; but the cappings, instead of falling on a screen to drain, drop directly on to a tin bottom which slopes down toward an opening near one end. The honey with the cappings furnishes sufficient lubrication to keep them constantly sliding down through this opening into the heated pan beneath. This smaller pan is surrounded by water, which is kept hot by an oil-stove, so that the cappings are immediately melted into wax. The capacity is not limited; for, when the heated pan is full, the honey and wax overflow through the trough into a pail, which is replaced by an empty one when full. When the work is done for the day, the wax cakes may be lifted out of the pail in good condition for market, leaving the honey entirely free from cappings.

The details of construction of the uncapping-box are shown

THE MERCER UNCAPPING-BOX.

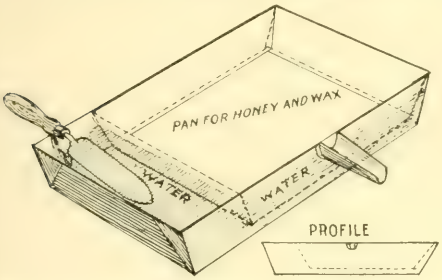
The cappings, as fast as they are sliced from the combs, fall down into a hot pan where they are immediately melted. The honey and wax are thus separated.



THE MERCER UNCAPPING-BOX.

The stove shown would hardly be suitable. A blue-flame wickless kerosene-stove should be used

more clearly in the reproduction from the pen-drawing. The oil-stove shown is not the style that Mr. Mercer uses, for he has found that the blue-flame wickless kerosene-




DETAILS OF THE DOUBLE PAN IN WHICH THE CAPPINGS ARE MELTED.

stoves give the best satisfaction. Asbestos rings take the place of wicks, and these are never moved up or down, the supply of kerosene being regulated by a valve.

The large box is five feet long, two feet wide, and ten inches deep. There is a two-inch slant to the tin bottom, so that the cappings will more easily slide into the hot pan beneath. If, for any reason, the cappings should collect in the box in two great a quantity, an occasional push with a stick would send them down out of the way.

The hot pan is made double—that is, the arrangement is really a pan within a pan. The inside pan, which holds the wax and honey, is, of course, smaller and shallower than the outer one, and the sides are also more flaring. This gives the hot water a chance to surround the inner pan completely, so that the sides, as well as the bottom, are kept hot. Reference to the small illustration of the pan will make this clear. It will be noted that the outer can, which holds the water, is made enough longer to give a space just the right size for holding two uncapping-knives. This means that the blades will always be hot and clean.

The uncapping-box would not need to be so long were it not for the fact that it is a great convenience to have a rack for holding uncapped combs before they are placed in the extractor. By hanging the combs in the box, the honey that drips from them runs down with the cappings so that there are no extra pails or cans to watch.

Little need be said concerning the advantages of this plan. The cappings are never in the way, and no bulky cans to hold them are necessary. The wax cakes are ready for market about as soon as the work is done, and no time is spent in rendering. The most expensive part of the outfit is the stove. A two-burner oil-stove of the style mentioned costs about five dollars; but it is a stove that is needed in every home, any way.

## DRUMMING BEES OUT OF A LOG GUM.

BY FRED J. CARTAN.

I am sending you a photo of a bee-tree that I found and took to my yard and set up. It is six feet long and filled from end to end with comb, and probably honey and brood. It is curved away from the point of view and does not show the entire length, as I wished to show the bees and their entrance into the tree which can be seen at the lower edge of the cluster of bees.

I am of the opinion the bees have occupied this tree over at least one winter. As the hole was and is now at the top of the hive (or,

FRED J. CARTAN AND HIS BEE-TREE.

This bee-tree was found by Mr. Cartan and the section containing the bees was cut out and moved into his own yard.

rather, tree), I do not understand how the bees could retain the heat during cold weather.

I wish to transfer these bees to hives, and am in doubt as to the best plan. The colony is very large, about twice the size of a strong colony in regular hives, and would do good work if in hive and supers. Can I drum them out into the hive I am using as a super shown in the picture, or should I use Porter bee-escapes? There is a hole in the top of the log communicating with the super. I should like to save the queen, and can save most of the brood by putting the combs into supers on top.

My bees have done well this year. I had to feed through April and May to keep up brood-rearing, and at the first alfalfa flow the hives were running over with bees. The best colonies have 100 lbs. of surplus at present.

Medicine Lodge, Kansas.

[There would be no doubt about your drumming the bees up into a modern hive, but you may have to pound pretty hard and continuously for a matter of twenty minutes or longer. If this does not succeed, bore a hole into the bottom of the cavity with an inch auger bit, and with smoke drive the bees upward into the upper box.—ED.]

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A SPADE is a spade, and glucose is glucose, even if it is made from corn starch. If glucose is as good as its makers claim it is, there will be no trouble about selling it under the old name—*glucose*.

## SWEET CLOVER.

### Its Value as Pasturage for Cattle and Bees; Worth Four Dollars an Acre for Honey Alone.

BY FRANK COVERDALE.

[In our last issue, p. 105, we published a report from Mr. Coverdale on the subject of sweet clover. We are glad to place this article also before our readers, since it gives some of his experience in regard to the value of sweet clover from a bee-keeper's standpoint.—ED.]

The steers shown in the illustrations are part of a load shipped to Chicago Aug. 1, bringing $5.75 per 100. During June and July they were fastened into this 35-acre field in which was a pretty good stand of sweet clover. This ground has been sown to this valuable legume for four years, and it seems to thrive better each year. No one who looks at this pasture and sees the cattle eating it and becoming fat has any doubt about its value as a pasture-plant. Most farmers think I am growing a vile weed; but they say it makes good feed for the cattle nevertheless. When I want to get rid of it after getting other fields started, I guess I shall have to plow up the field.

CATTLE FEEDING ON SWEET CLOVER.

Sweet clover is certainly a great honey-plant, and this adds very largely to its value to the keeper of bees. It is also the very best clover to sow where a permanent and first-class grazing-field is wanted for dairy cattle, sheep, and hogs. I have not the least doubt of its permanency, because of its luxurious growth through both wet periods and the drouths. It always furnishes a large quantity of nice green feed until the ground

begins to freeze in the fall. Even after it is frozen the stock do well on it if any is left.

I have 150 colonies of bees near this field, and it is a sight to see it when it is in bloom. The bees keep on filling the supers slowly with the honey, which is water-white, and very agreeable to most people. For me, this clover has yielded honey every season; but the bees do better on it at times. My neighbors keep some bees, so about 200 colonies work on it annually, and yet the field is worth from $3.00 to $5.00 an acre each year for the bees alone. I have made a very close study of this matter.

I think it will not be many years before these bees will have hundreds of acres of sweet clover to work on, and then I expect to see real results. I have seventy acres of sweet clover 20 miles from home, where I never expect to keep bees; for I want only a good rich pasture in this place.

A willow-tree once blew down and broke the fence so that my cattle walked right into my neighbor's hay-field. A ditch extended from my field into his, and the sweet-clover seed had been washed down until it grew along the banks in his field. This neighbor had told me he was afraid it would cover his farm; but my cattle found it that night, and ate it nearly to the ground without touching either the alsike or the timothy.

Maquoketa, Iowa.

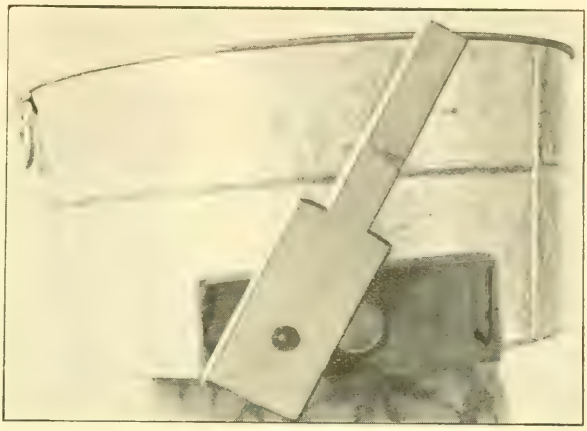
[In a letter written later, to Dr Miller, Mr. Coverdale made the statement that sweet clover is worth $4 an acre for honey, $15 an acre as pasturage for cattle, and $30 an acre for seed, when the seed sells near home for $10 a bushel. This makes a total of $49 an acre,—Ed.]

## A HOME-MADE HONEY-GATE

BY E. F. ATWATER.

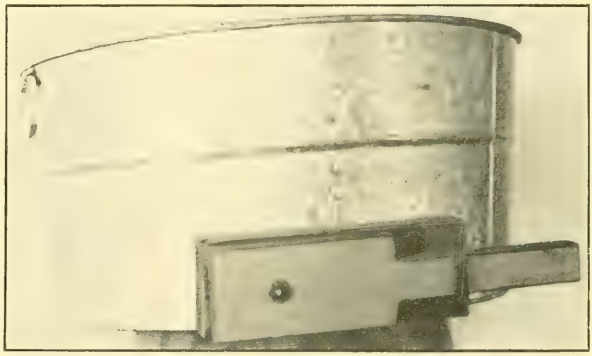
Sometimes we need a honey-gate on very short notice; and, if not near a large supply-house, we hardly know what to do.

One day in September I made a brief call at the home and apiary of F. A. Powers and was at once interested in his home-made honey-gate. The general construction will be clear from the cut. It is made from 1¼-inch lumber, about 4 inches wide. The block next to the tub or tank is cut out accurately to fit, and nailed on from the inside of the tank. On arriving home I needed another strainer-tub; so I made one with a home-made gate, as shown in the cut. While this worked very well on honey at ordinary temperatures it was inclined to leak with hot honey. I then soldered over all the nail-heads and holes inside the tub, made a tin tube to fit snugly in the 2-inch hole, and soldered it neatly on the inside. But even then it is not so good as the regular gate, for *hot* honey; but for cold honey it works as well as one can wish, and will serve very well for temporary purposes, while the cost is next to nothing.



A HOME-MADE HONEY-GATE OPEN.

The block next to the can is securely nailed in position, the heads of the nails then being soldered to prevent leaking. The handle-block is bolted tightly to make a good fit.



HOME-MADE HONEY-GATE CLOSED.

Meridian, Ida.

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We have just received the annual report of the Horticultural College, Kent, England. In this college only women are trained as professional gardeners and bee-keepers. A full bee-keeper's course is provided in connection with fruit culture. This shows very conclusively the close connection between the two industries, and it is true they are practically inseparable to a great extent.

DR. H. V. BUTTEL-REEPEN IN HIS GARDEN.

Dr. Buttel-Reepen is the author of "Are Bees Reflex Machines?" begun in this issue. He is not only a scientific man, but a practical bee-keeper as well. His work will therefore have all the more interest and value.—ED.

# ARE BEES REFLEX MACHINES?

## Experimental Contribution to the Natural History of the Honey-bee by H. v. Buttel-Reepen, Ph. D. Translated by Mary H. Geisler.

### PREFACE TO THE ENGLISH EDITION.

For the English edition some additional references have been made to the important literature which has appeared on the subject since the publications of the German editions. On the whole, our knowledge has not materially changed since then. Modern animal psychology tends to discredit Bethe's reflex theory. Although the contradiction of this theory was taken as a basis for this paper, nevertheless it is concerned chiefly with the statement of experimental contributions to the natural history of the honey-bee; these contributions discuss the life and instincts of the community of bees, and incorporate some of the results gained by practical bee-keeping.

May this little paper gain friends on the other side of the ocean.

May, 1906. BR. H. v. BUTTEL-REEPEN, Oldenburg, i. Gr., Germany.

### INTRODUCTION.

The following observations are submitted after fifteen years' study, and are further to be used for a General Biology of the Honey-bee; but this larger work can not be completed until later, because of the heavy demands on my time at present. It seems desirable to publish this much of the investigation now, however, and I wish specially to consider the most vigorously debated question of the day, that of the psychical faculties of social insects, because of Bethe's[1] interesting study of this question with regard to ants and bees. I shall take up bees only, as there are many scientific observations on ants[2] and as especially the great myrmicologists Aug. Forel[3] and Wasmann[2] have already overthrown many of Bethe's conclusions.

That I do not accept Wasmann's definition of Instinct will be apparent from what follows. I refer to the discussion of instincts in my "Stammes-geschichtlichen Entstehung der Bienenstaates, Leipzig, 1903, as well as to Forel's excellent paper, "Gehirn und Seele," 5. u. 6. Aufl., Bonn, 1899, pp. 34 and following.

As early as 1872, Dohrn[4] recognized that it would benefit science if more biological[5] investigation were carried on, and the results made useful practically. It seems to me that

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[1] Albrecht Bethe, Dürfen wir Ameisen und Bienen psychische Qualitäten zuschreiben? Arch. f. ges. Physiologie, Bd. 70, 1898. (Also appears as a separate with other paging.)

[2] Wasmann, Die psychischen Fähigkeiten der Ameisen. Stuttgart, Erwin Nägele, 1899.

[3] Forel, Fourmis de la Suisse. Nouveaux mémoires de la société Helvétique. Zürich, 1874. Expériences et remarques critiques sur les sensations des Insectes. Rivista di Scienze Biologiche. Como, 1900, 1901. The Psychical Faculties of Ants and some Other Insects. Smithsonian Report for 1903, pp. 587-599. Washington, 1904, etc.

Lubbock. Ants, Bees, and Wasps. International Scientific Series. New York, 1883; German translation, Leipzig, 1883.

Janet. Études sur les Fourmis, les Guêpes, et les Abeilles. Limoges, 1897, etc.

Emery. Die Entstehung und Ausbildung des Arbeiterstandes bei den Ameisen, Ueber Entstehung des Soziallebens bei Hymenopteren. Biol. Centralbl., Bd. XIV., 1894. Le Polymorphisme des Fourmis et l' alimentaire. Compt. rend. III. Congr. internat. d. Zool. Leyden, 1896, etc.

Wm. Morton Wheeler. The Compound and Mixed Nests of American Ants. American Naturalist, Vol. XXXV., 1901. Some Remarks on Temporary Social Parasitism and the Phylogeny of Slavery among Ants. Biolog. Centralbl., 1905. Ethological Observations on an American Ant. Journal für Psychologie und Neurologie. Leipzig, 1903, etc. K. Escherich. Die Ameise. Braunschweig, 1906.

Bethe, l. c.

[4] A. Dohrn. Der gegenwärtige Stand der Zoologie, etc.; XXX. Bd. Preuss. Jahrb., 1872.

[5] The German word *Biologie* refers particularly to the study of life-history and habits rather than to all phases of animal and plant life—the sense in which it is used in English.—E. F. P.

the biological knowledge concerning *Apis mellifica*[6] which has been gained by practical bee-keeping has scarcely entered scientific literature, and, strangely enough, the results are little regarded: it has not passed over into the flesh and blood of science. In proof of this there are the vague, defective assertions which are found in the newest editions of scientific works. Thus in a well-known text-book of zoology we read that a colony of bees contains about 10,000 workers. Such a small colony as that, 1 kilo of bees (5000 generally counted to a half-kilo) is not capable of developing under ordinary circumstances, nor of living over the winter. If a colony of medium strength is considered normal, then a normal colony contains at least 20,000 to 30,000 bees. The following statement also is wrong: "If a young queen emerges from her cell, then the former queen leaves the hive with part of the colony (first swarm) to found a new colony." Normally the swarm has issued by the time the cells containing young queens are sealed. Since it takes 16 or 17 days for the complete development of a queen, and the cell is closed on the ninth day, the hive is without an emerged queen for seven or eight days after the issue of the first swarm. The after-swarm, therefore, normally issues seldom before the ninth day after the issue of the first swarm. In Bechhold's Lexikon der Naturwissenschaften, 1894, there are similar incorrect statements. Among other things, a vigorous colony is said to contain, at most, 30,000 workers. But since strong colonies can sustain swarms of three or four kilos (27,000 to 36,000 bees), it follows that the whole number of inmates may amount to 60,000 or 75,000 and more, for usually a little more than half remain in the hive. Only 9000 swarming bees are counted to the kilo, because the honey-sacs of all are filled. Claus,[8] in a paper which contains many other errors, doubts that bees are able to hear. No zoologist who has done any experimental bee-keeping can have the least doubt that bees have an excellent sense of hearing, since observations yield him hundreds of proofs. The man who is not familiar with biological facts might recognize nothing of the kind with certainty, for up to the present the organ of hearing has not been discovered.

It appears, however, that the work of Otto Schenk indicates an advance in this direction (Schenk: Die antennalen Hautsinnes-organe einiger Lepidopteren und Hymenopteren, Zool. Jahrb., 1902). In this work on antennæ the presence of organs is demonstrated, which, with more probability than has been possible heretofore, may signify organs of hearing. Again, the work of Vitus Graber, "Die Insekten," München, 1879, in picturing the social life of insects, shows a series of errors and incorrect assertions so far as bees are concerned (Part II., 2d half, pp. 232-248). A refutation would take up too much space, and would lead me too far; but I might mention, for example, that Graber declares that the queen normally flies about inside the hive, because she "can not always pass *per pedes* through the vertical paths inside" (l. c., p. 88). Further, Wundt (Vorlesungen über

[6] *Apis mellifica* L., or *Apis mellifera* L.? As is well known, the rule of priority begins as far back as the tenth edition of Linnæus' "Systema Naturae," in 1758. In that year we find the honey-bee designated by Linnæus as *Apis mellifera*. Three years later he named it *Apis mellifica*, probably because he recognized that the name first given was erroneous, for the bee does not carry in honey but nectar, making the honey in the hive. It is, therefore, not a carrier of honey (*mellifera*), but a maker of honey (*mellifica*). Be that as it may, the first author himself undertook the correction after a short time. Then developed an overwhelmingly rich literature concerning *Apis mellifica* (not *mellifera*), which is now inexhaustible, even to the specialists, if the non-scientific literature on bees be included. The bibliography of the late Mr. Edward Drory, of Berlin, relative to the honey-bee alone, embraces, for example, more than 2500 works. In the catalogue "Elenchus Librorum de Apium Cultura," Bibliographia Universale de Apicultura, raccolta per Augusto Keller, 2300 works on *mellifica* are cited.

Under the circumstances Friese (as writer on Apidae for the Tierreich), and I have thought that, in spite of the rule of priority, we would not be justified in reëstablishing the name "*mellifera*," which was recognized as incorrect, and shortly rejected by the first author. This is the result of mature deliberation at various times during many years. Not only were the reasons just mentioned arguments for retaining the name adopted 150 years ago, but also the knowledge that its establishment proves how powerless the regulations of the priority rule itself are in definite cases. They are powerless in spite of the rules for the "Tierreich," in spite of Della-Torre's "Catalogue Hymenopterorum," and even in spite of Friese and others of the originators of the priority rules for each case. For example, for the genus of solitary bees "Anthophora," the name "Podalirius" was introduced, or at least according to the new system an attempt was made to introduce it. But here the case was like that of *mellifica*—the first author himself, for certain valid reasons, changed the name after a short time from "Podalirius" to "Anthophora." Thus the name Podalirius did not prevail. It has not succeeded in becoming established in the lapse of years, and there is not the slightest probability that it will change in the future. I quote this discussion from my work which has just appeared, "Apistica. Beiträge zur Systematik Biologie, sowie zur geschichtlichen und geographischen Verbreitung der Honigbiene (*Apis mellifica*, L.), ihrer Varietäten und der übrigen Apis-Arten." Mitth. d. Kgl. Zoolog. Museums in Berlin, 1906.

[8] Claus, Der Bienenstaat. Part 179 of the collection of scientific papers published by Virchow und Holtzendorf. Hamburg 1873.

die Menschen- und Tierseele, Leipzig, 1892), builds numerous far-reaching theories upon an incorrect biological basis. I shall speak of this in my "Conclusion" to this paper. The foregoing list of errors is not very complete, but let the matter end here.

While the founders[9] of our present knowledge in this sphere depended largely upon the results gained in practice, we see now and then an almost complete ignorance of the rich material which distinguished bee-keepers have laid down in the literature of practical bee-keeping.[10]

As to terminology, I shall not use Bethe's phrase, "psychic qualities" (psychische Qualitäten), since it can be interpreted in various ways. Bethe gives it a definite significance, comprehending under it everything acquired in the life of an individual, and also every capacity for sensation and learning; in short, everything that transcends unperceived reflex activity.[11] He considers ants and bees as mere reflex machines: "It seems to me that these insects have no senses, have no ability to make experiences and modify by it their actions; that all stimuli remain below the threshold of perceptible sensations and perceptions, and that they execute, in a purely mechanical way, all the apparently reasoned actions" (Bethe, l. c., p. 98). Whether this view is warranted, we shall see further on.

The terms "reflex" and "instinct," I shall use in the significance Bethe gives to the word "reflex." Instinct is complicated reflex.[12] He lets pass as reflex the inherent faculties; the course of nervous processes is determined by inherited instincts. That acquired in the life of the individual shows the opposite; here the course of the nervous processes indicates experience, memory, learning, capability for association, etc.[13] I shall restrict myself here to these short statements, but shall add some psychological views in the concluding chapter.

I shall first discuss the "Hive Odor" and reactions resulting from it, then give my experiments and opinions on the capacity for intelligence in bees, and end with my conclusions concerning the homing instinct in bees, or the ability to find the hive, etc.

## THE HIVE ODOR AND THE REACTIONS RESULTING FROM IT.

In the first section of "Investigations on Bees," Bethe (l. c.) treats the question as to how bees recognize the hive, and concludes that the recognition results solely from an odorous chemical compound (Geruchsstoff) which he calls the "hive substance" (Neststoff).[14] He avoids the term "hive odor," because he thinks bees have no sense of smell.

[9] François Huber, Nouvelles observations sur les abeilles. Geneva, 1814; German by G. Kleine, Einbeck, 1856; English editions in 1823 and 1841. This investigator, blind since his twentieth year, could not have carried on his observations without the help of his unusually efficient bee-keeper Burnens.

v. Siebold Wahre Parthenogenesis bei Schmetterlingen und Bienen, Leipzig, 1856, etc.

Leuckart, Zur Kenntnis des Generationswechsels und der Parthenogenesis bei Insekten, 1858, etc. Surely the histological findings of these last-named investigators with regard to the presence of spermatozoa in bee eggs can no longer be esteemed as free from objections. They doubtless depend upon an illusion, for, as I have shown before (Die Befruchtungsvorgänge im Bienenei, Bienenw. Centralblatt Nr. 16, v. 15, August, 1899; further in Aus den Wundern des Bienenstaates, ibid, 1900), according to my investigations, the spermatozoa undergo the transformation into sperm nuclei in about 15 to 20 minutes (cf. Weismann, Vorträge über Deszendenz Theorie, II. Aufl., 1904, p. 250, I. Bd.); while v. Siebold says he has seen living spermatozoa in eggs after 12, 15, and 22 hours. I believe, therefore, that in Blochmann's paper (Ueber die Zahl der Richtungskörper bei befruchteten und unbefruchteten Bieneneiern, Morphol. Jahrb., 15 Bd., p. 85-96, 1889), and in Paulcke's investigations (Zur Frage der parthenog. Entstehung der Drohnen (Apis mellif.,) XVI. Bd., pp. 474-476, Anat. Anzeiger v. 5, October, Jena, 1899, Vorläufige Mitteilung), we have the first safe histological corroborations of the theory of parthenogenesis in the honey-bee. In the meantime Petrunkewitsch has given full confirmation (cf. Petrunkewitsch, Alex., Natural and Artificial Parthenogenesis, Amer. Naturalist, Vol. 39, 1905).

[10] v. Siebold (l. c., p. 57) expressly refers to the findings of bee-keepers as "the most important work."

[11] Bethe drops this expression in "Beer, Bethe, und J. v. Uexküll, Vorschläge zu einer objectivirenden Nomenklatur. Biol. Centralbl., 19 Bd., 1899, Nr. 15, p. 517 (also in Centralblatt für Physiologie, 1899, Nr. 6); further in Bethe's "Noch einmal über die psychischen Qualitäten der Ameisen," Archiv. f. d. ges. Physiologie, Bd. 79, 1900, p. 45.

[12] H. E. Ziegler, Ueber den Begriff des Instinkts. Verhandl. d. deutsch. zoolog. Gesellsch., 1892.

[13] H. E. Ziegler, Theoretisches zur Tierpsychologie und vergleichenden Neurophysiologie. Biol. Centralbl., Bd. XX., Nr. 1, 1900.

[14] According to Bethe we must consider the existence of this "hive substance" as a "family odor." "I believe that these family odors, common to all the members of one family, and differing slightly from those of other families of the same species, play an important part in the life-history of the social hymenoptera. This family difference is due to the varying proportions of the constituent odors" (l. c., p. 31). This "hive substance" must be inherited, as Jäger likewise maintains (Zeitschrift für wissensch. Zoologie, Bd. 27, 1876, p. 327). I might mention here that I find no proof in Jäger's paper that he concludes the "exhalation odor" of a colony to be solely a "family odor" as Bethe does, and still less proof that he considers this common odor to be "inherited," because it is a mixture of many thousands of inherited individual odors.

Bethe includes, under the term "hive substance," two separate substances, one giving the family odor and the other causing the "various reactions toward hive mates and hive strangers." That this conception will not cover all cases, I believe I can demonstrate in the course of my paper.

I use the expressive term "hive odor" (colony odor, exhalation odor), under which I comprehend only the existence of gaseous substances disseminated in a colony, the presence of which is detected by the bees' sense of smell.

I believe that the following odors are present in a colony of bees:

1. The Individual Odor. It can be easily demonstrated that the queen odor (see p. 7) varies with different individuals, and on the same ground (germinal variation), an individual odor should be assigned to the workers.

2. All offspring of one mother (queen) have a common inherited family odor in addition to the individual odors, belonging only to the progeny of one queen.

3. The brood and chyle odor (p. 9).

4. The drone odor (p. 10).

5. The wax odor. Since the wax is a glandular secretion, an exuded product, it may be safely taken for granted that, considered apart from the specific odor of wax, the individual odors of the wax-generators adhere to the honey-comb. Accordingly the wax structures of different colonies have different odors.

6. The honey odor. That the honey of each colony (mixed with a secretion of the salivary glands) has its specific odor is readily seen from the old practice of bee-keepers to which Bethe also alludes. If a queen be daubed with honey from a queenless colony, she will be accepted readily by that colony when inserted.

7. The hive odor (exhalation odor, colony odor). The hive odor is composed normally by a mixture of the preceding odors, or of some of them. Single bees, therefore, besides their individual odors, possess the family odor and especially the common adhering hive odor, which forms the dominant factor in the various actions toward hive mates and hive strangers—that is, in mutual recognition between bees.

If a strange queen is put into a queenless colony in a cage, a confinement of twenty-four hours is usually sufficient for the queen to have received the "hive substance," as Bethe calls it; that is, she has become "scented."[15] The external adherence of the colony odor therefore suffices to make the bees permanently friendly with the foreign queen. If a swarm is made of the bees hanging in front of several hives,[16] which in strong colonies often form great clusters (beards), by scooping them up in a ladle, there will probably be bees from ten, twenty or thirty different hives. If they are put into a hive and given a queen, with the observance of proper precautions, these bees from let us say, thirty different hives, form a peaceful colony in a few hours, which adjusts itself in its new dwelling and takes up the ordinary tasks of the day. Here we have thirty family odors, and about thirty to forty thousand individual odors united into a special hive odor, peculiar to this colony alone, merely by the scooping together. The proof of this can be found in the fact that a queen placed in such a colony can be set free frequently after only twelve to twenty-four hours; she has taken up the hive odor.

We see, therefore, in this case, a colony without a specific family odor conducting itself exactly like colonies which are made up of the offspring of one mother. In each case the hive odor is formed by the union and mixing of individual odors.

Now the question arises: Is this hive odor inherited? No, surely not, for the hive odor, therefore the common odor, that each individual can take up in an external way is something purely exogenous or acquired.

The power of the hive odor seems to me, therefore, to lie not in the inherent family odor nor in the inherited individual odors, but in the exogenous mixture of the two. What Bethe (l. c., p. 43) alleges for compound nests (Schüttelnester), and communicates in his experiments on bees (p. 71), is not a contradiction of this. He says that bees that had been transferred to another hive did attack almost not at all or with only slight enmity their sisters remaining in the mother hive because the common family odor lessened the hostile reaction. This proves merely that the hive odor differs from the family odor. If the latter were the predominant factor, bees of the same family would always be friendly with each other, which is not the case.

[15] Further on I shall show that in many cases the bees very likely become familiar with the odor of the queen, which is a mixture of the queen odor and the hive odor.

[16] G. Dathe, Lehrbuch der Bienenzucht, 5 Aufl. Bensheim, 1892; Bienenzeitung, 7 Jahrg., No. 19.

Further, I can not regard this, the only experiment which Bethe employed (l. c., p. 71), as conclusive, since very many circumstances which have nothing to do with the hive odor effect the friendly or hostile attitude of bees, be they sisters or strangers. The forage, weather, time of year, strength of the colonies, quantity of provisions, etc., all have an influence, as is well known to those who have studied the peculiarities of bees for many years. In my experience, estrangement seems to take place between separated hive mates generally much more quickly than Bethe states, yet I think this is on the whole a secondary matter which does not touch upon the principal point.

### MODIFICATION OF REACTIONS TOWARD THE HIVE ODOR.

It is contested by Bethe that the "various reactions" are based upon hive-mate and hive-stranger modifications.[17] It seems to me that it is hardly possible to grant such a far-reaching conclusion when Bethe's investigations give no striking proof that reactions toward the hive odor are incapable of modification. We learn nothing from the illustration given above. In the critical examination of robbing between colonies, we find that a great number of factors enter, which can be discovered only after years of keen observation and fortunate circumstances. In the manual of bee instruction which I helped to publish[18] (see p. 9), I recommended also fumigation of the hive of the robbing and not of the robbed colony, but that is no proof that the hive stimulus can not be modified. Bethe believes that no psychic elements enter into the actions of a colony and apparently the short time he could devote to bees led him to this view. I submit the following investigations on this question.

### THE SWARMING-OUT OF A QUEENLESS COLONY.

If two hives are placed close together, and the queen and brood are removed from one, it sometimes happens that the entire colony, from which every possibility of rearing a queen has been removed, will enter the queen-right[19] (weiselrichtigen) colony, humming "joyfully." These bees seldom sting, and are received in a friendly manner, although the normal queen-right colony should react hostilely, if it followed a chemical reflex incapable of modification. What causes this swarming-out of the queenless colony we shall see further on.

### INTENSIFYING THE REACTION.

If a colony tolerates robbing without attempting to suppress it, a stimulating food should be given it, such as fermenting buckwheat honey[20] several years old or a mixture of honey and brandy, and the hive should be shaken to arouse the anger of the bees, etc. Then a better defense is made, the irritability of the colony is increased, and robbers are better recognized and repulsed.

The "courage" and the "attention" of the colony are increased, and therefore we have intensified reactions toward hive strangers.[21]

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[17] "It has been thought possible to make the individuals of a hive 'recognize' each other better by fumigating the colony with some strong smelling substance—camphor, naphthaline, baldrian, for instance. If this be done to a colony exposed to frequent plundering it is thought that the bees of this hive will more readily detect the robbers to whom the scent does not adhere. Were this correct, then it would prove that the various reactions toward hive mates and hive strangers could be artificially modified.

"I believe that I can assert positively that such treatment does not increase the reaction toward strange bees in the least, but only that the bees of all strange colonies react more vigorously toward the individuals thus scented. (Therefore if it is desired to defend a colony from robbing, it is the robbing and not the robbed which must be fumigated.)

"We see, therefore, that here, as in ants, the various reactions toward hive mates and hive strangers bring us back to a simple chemical reflex" (Bethe, l. c., p. 71).

[18] G. Dathe, Lehrbuch der Bienenzucht, 5 Aufl., published by R. Dathe and H. Reepen (v. Buttel-Reepen), Bensheim, 1892, p. 181.

[19] There is no word in common use among English-speaking bee-keepers to indicate the normal condition of a colony in the possession of a queen, either mated or unmated. It seems desirable, therefore, to translate the German term literally, although "queen-right" is an undesirable term. It has already been used by some American writers.—E. F. P.

[20] Dathe, l. c., p. 179.

[21] The Lüneburger bee-keepers sometimes employ a particular method for putting a stop to robbing. If the honey-flow is strong, so that the powerful odor of honey issues from the hive-entrance, a general robbing occasionally goes on; but the robbers are hardly noticed by the bees of the hive, apparently the strong odor of honey covering the strange odor of the robbers, or the certain, quiet entrance deceiving the inmates of the robbed colony. In order to call out a stronger reaction, the bee-keepers turn over the skeps so that the wider opening of the skep is turned to the front. One would think that, since the whole honey-comb is now open to the air, robbing could be effected more easily; but this is not the case, for the powerful odor of honey is now easily "dissipated," and the robbers, because of the change in the position of the entrance, are uncertain, and hesitate. Thus the attention of the colony is drawn to the robbing, the fortification is well protected, and every attack is beaten off (cf. G. Lehzen, Hauptstücke der Lüneburger Bienenzucht, 1900, Hannover).

OVERCOMING THE REACTIONS TOWARD HIVE ODOR.

It is interesting that this powerful reaction toward hive odor, though generally acting hostilely, can be subdued and turned in other directions. Thus bees which blunder into the wrong hive, as they return from the fields with filled honey-sacs, are seldom attacked.

The behavior of such "begging" bees is most peculiar. With the abdomen dragging on the flight-board, the proboscis far extended and dealing out the honey to her tormenters, she is trying to insinuate herself into the hive in order to deposit her honey, and in this she often succeeds. (Here and further on I use anthropomorphic terms for better demonstration. It is understood that many of these actions rest upon reflexes and instincts, but it makes the case clearer to use such terms, as "to insinuate" for example.)

The old practice of transposing hives is based on the fact that strange bees, laden with honey, are received in a friendly way. If a weak colony needs improving, it may simply be put in the place of a very strong one, the two hives changing places. This transfer will be successful only on days in which there is a good honey-flow and all flying bees return heavily laden. If the hives have the same outward appearance, and (most important) have their entrances at the same height, almost all bees will fly in as usual. Thus the weak colony will be strengthened from the strong one, and stinging seldom occurs.

Also, if one wishes to prevent swarming, the flying bees may be drawn off in the same way. I can not at this point go into the many modifications of this practice, and must refer to the manuals of instruction.

If a strong colony stands next to a weak one during a rich honey-flow, and succeeds in filling its own chamber to overflowing, it happens now and then that the strong colony, having no further room, will help to fill the hive of the weak one in the most peaceful way. So we see that of two colonies which should react hostilely toward each other, either one or both may be put under peculiar conditions in order to handle both in the same way with a peaceful reaction between them. For example, if two colonies are sprinkled with some strong-smelling liquid, or powdered with meal, they may be united without risk.

If bees are stupefied with saltpeter, chloroform, ether, or puff-ball, the same thing can be done with no danger of mutual stinging, but at the same time the earlier orientation is completely lost. When the bees recover from their stupor they no longer recognize their own colony, and can be united to other colonies at will. What conclusions are to be drawn from this capacity for learning, etc., we shall see later on.

Incidentally, I might mention here a curious aberration of instinct. The literature of bee economics records some cases in which bees showed unaccountable hostile reaction toward their own hive mates. Thus it has been observed some times that a colony will sting a great number of its own flying bees as if they were intruders. This behaviour has been noticed for a long time, and it finally did lead to the destruction of the colony. Possibly here there is a degeneration of that instinct which causes colonies to place bees at the entrance to control the flying in. Perhaps differences of odor come into account, or perhaps both stimuli act together.

It is probable, too, that we may be dealing with defective observations, although errors of instinct in bees are not at all uncommon, and frequently in the spring it can be proven that bees, in an inexplicable mistake, even attack their own queen and ball her. The colony is then in wild confusion, and between the combs or on the bottom-board is the poor queen in the middle of a cluster of bees; she often comes out of the tumult a cripple. Another case of failure in instinct is as follows: As is well known, bees now and then build queen-cells over drone eggs.[22] If a queen-cell is of more than ordinary length it is tolerably sure to contain a drone larva.[23] The too invigorating royal jelly[24] seems to be unwholesome

[22] O. vom Rath, Ueber abnorme Zustände im Bienenvolk. Berichte der Naturf. Ges. Freiburg i. Br., 8. Bd., 1894.

[23] There is also a prevalent idea that such cells are not as rough as normal cells containing queens; some books on bee-keeping even go so far as to try to figure the difference.—E. F. P.

[24] Concerning the varied chemical composition of pabulum for the three kinds of bees, see A. von Planta. "Ueber den Futtersaft der Bienen," and "Nochmals über den Futtersaft der Bienen," Schweiz. Bienenzeitung, 1888-'9; further, A. von Planta, Zeitschrift f. phys. Chemie von Hoppe-Seyler, 1888, Bd. 12, Heft 4, pp. 327-354, and also Bd. 13, Heft 6, pp. 552-561; further, Dathe l. c., p. 24.

for the larva; it falls out from the food because of the abnormal size of the cell, and that is the cause of their always lengthening the cell. Usually the drone dies.

THE ODOR OF THE QUEEN.

The individual odor of the queen is doubtless in many cases a very small part of the odor of the hive, but often may form the dominant factor. The exhalation of the queen is so intense that it can be perceived by man. It is very characteristic and adherent, being somewhat like the odor of thyme. If a queen is crushed on a board, the bees of her colony smell for several days around the place where she was killed. If the bees are allowed to run over the board, they gather there; and, lifting the abdomens, fan their wings in a peculiar way.

It often happens that after-swarms, also swarms with young queens, fly together and unite into a powerful swarm-cluster. The bees in this cluster do not attack each other, in spite of the varied hive odors. The "swarm-dizziness" extinguishes the reactions toward the foreign hive odor, just as it also almost destroys the sense of orientation, so that the impulse to seek the parent colony is lost,[25] at least under normal circumstances. The swarming bees, instead, remain in the home they have taken up; the field bees, which some days before, or immediately before the swarming, have been bringing honey, pollen, and water to the parent colony in the usual way, will, a few hours later, after they have become oriented, bring their burdens into the new hive. Under the proper conditions this can be placed adjoining the old one. The memory of the old birthplace has completely disappeared. I shall speak later on of an exception to this.

If it be wished to separate these united swarms, the whole cluster may be put into a large box containing as many twigs of a tree as there are swarms. Over night the colonies separate of themselves, each hanging on a twig.

It is safe to take for granted that a purely mechanical separation takes place here, and, evidently, according to the various hive odors. I nevertheless believe that a still more powerfully determinative stimulus enters—the odor of the queen. Each colony congregates around its queen;[26] and if the queen is taken away from one swarm it will unite with another possessing a queen, in spite of the hostile hive odor.

It may be thought that here the family odor, the possession of all the offspring of one mother, enters its claim; but I notice that the swarms may be united ingeniously, even if the queen does not originally belong to the colony in question, but comes from a queen-cell taken from a strange colony. In addition, we continually have to do with unfertilized queens in normal after-swarms, therefore we can not speak of the offspring of one mother at all. The queen of an after-swarm is the sister of the workers, if I may so express myself.

It is the queen odor familiar to the bees which acts with the hive odor (to be sure, the reaction toward the latter seems to disappear during the swarming), and perhaps holds the community together, but the queen odor is the dominant factor. This may be seen from the first experiment (p. 5) also, to which I shall now return. The bees of the queenless colony scent the queen in the neighboring hive, and, paying no attention to the foreign hive odor (toward which, under ordinary circumstances, they would react sharply), they go over into the enemy's camp "humming joyfully." Very probably sound perceptions also come into consideration—that is, the reaction toward the humming of the "queen-right" colony (see later).[27]

If the odor of the queen is so powerful, it is clear that this individual odor alone

[25] Bethe, in dealing with the "psychical qualities," has not considered either the act of swarming, which is an all-important factor, or the individual odor of the queen. We shall see presently what interesting bearings swarming has on this question.

[26] Some may take exception to this statement, perhaps, and believe that this gathering together is due to other instincts—the sex instinct or the instinct to swarm which is characteristic of bees; but it must be kept in mind that the bees separate into single colonies only if the queens of the various colonies are present, manifesting their presence by the scent which exhales from them.

[27] In this there might be found an apparent contradiction to the "disregard of the queen" (p. 14). The finding of the queen in the next hive is not by scenting from hive to hive, for the distance is too great. The agitated queenless bees run searching over the front wall of their hive and also over the front wall of the one standing next. In this way some come to the entrance of the neighboring hive, where the odor of the queen and the sound of contented humming are issuing forth. At once they begin to lift the abdomens, and fan with their wings. Their mates near by take up the humming, and soon the whole colony enters the queen-right hive in order, with lifted abdomens and fanning wings.

determines the special character of the hive substance, especially when this is particularly strong. This would happen in the spring during the increased sexual activity[28] which is demonstrated by the enormous number of eggs laid (2000 to 3500 and more in twenty-four hours). That it is not always the determining factor, follows from the fact that there remains a hive substance capable of causing reaction, even if the queen is taken out and kept at a distance.

At such a season, during the strongest breeding period, the bees care for the queen with special zeal. It may not be the very "sympathetic" odor[29] alone which causes them at this time to surround her in a close cluster, for her increased need of nourishment[30] increases the constant care of the bees around her. Nevertheless, the singular pleasure that bees take in the strong mint-like exhalation from the queen is shown in the attachment of the "court," this affection being demonstrated by the single "courtiers," who from time to time lick the abdomen or thorax most zealously, humming continually in a characteristic "contented" way.[31]

The bees wish to sniff the odor, so to speak. A queen in an observation hive can be seen constantly surrounded by a circle of brood nurses who continually turn the head to her. If she advances slowly, the bees yield the way, moving backward. From time to time the "caressing," licking, and feeding go on. It can be easily understood how this attitude has often been interpreted as the expression of a peculiar reverence toward the "ruler of the community." The "respectful" walking backward, the "tender" licking, the irreproachable service (as the queen never leaves the hive, she is forced to deposit her fæces in the hive, and the "courtiers" immediately clean away all traces) closely approach anthropomorphic appearances. But perhaps it might be proven that the individuality of the queen is the dominant factor. A foreign queen with the same strong odor of mint would be stung in spite of the pleasure in the smell.

In autumn and winter, also early in the spring, the bees concern themselves relatively very little with the queen, and still less with a young virgin. The lessened exhalation (it is as yet very weak) may explain this phenomenon in part.

It seems to me that if the odor of the queen is extremely penetrating and adherent,[32] as it doubtless is, the view (mentioned also by Bethe) that the queen takes on the hive odor of the queenless colony in which she is placed in a cage, is not correct in all cases, for the colony is "scented" by the strong odor of the queen, which is distinctly perceptible to our sense of smell. Very rightly, therefore, O. vom Rath[33] says that "the workers first accustom themselves to the odor of the queen." The stronger, then, the exhalation from the queen, the more easily must be her acceptance or, the scenting of the colony proceed; and consequently the mutual friendliness also. I find from many investigations that a mated queen heavily laden with eggs is more easily accepted than an unfertilized one. The following rules[34] of bee-keeping harmonize with this statement: 1. "An unfertilized queen is not accepted by many colonies if formerly they have had a fertilized one." 2. "The older a queen is, the more readily is she accepted." 3. "Weak colonies accept queens more easily than strong ones." 4. "Queens of the same kind are accepted with less difficulty than those of different varieties; as for example, Italians, Caucasians, Cyprians, etc." Here in every case the different odor of each variety plays its part.

It may seem obvious that it is easier to demonstrate this scenting, whether it be on only one side or mutual, with a weak colony, but here other instincts come into consideration too, as we shall see further on.

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[28] Jaeger, Ueber die Bedeutung des Geschmacks- und Geruchsstoffes. Zeitschrift f. wissensch. Zoologie, Bd. 27, p. 327, 1876.

[29] In order to keep a swarm in the hive, the hive may be rubbed with thyme.

[30] As is well known, the queen can eat only honey independently; but the probosces of the workers are necessary to feed her with nitrogenous food.

[31] I might say again that anthropomorphic designations are chosen for purposes of clearer demonstration.

[32] I took the queen from a strong colony, put her in a cage, and after a few minutes removed her. Fifteen minutes later I placed the empty cage upon the flightboard of the colony concerned. Immediately the bees scented the odor, and alighted fluttering upon the cage, which they had completely ignored before (see also p. 7).

[33] O. vom Rath, Ueber abnorme Zustände im Bienenvolk, Berichte der Naturf. Ges. Freiburg i. Br., 8 Bd., 1894.

[34] Dathe, l. c., p. 211.

THE BROOD ODOR.

It is highly probable that it is not only the odor of the queen at all times which causes a queenless colony to enter a hostile camp (see p. 5), but during the months of greatest increase, from March to June or July, a powerful constituent of the hive odor is the odor of the brood, a warm characteristic vapor exhaling from the thousands of brood-cells. The chemical processes going on at this time in the cells, for the development of the larvæ, are of so intense a nature that a temperature of 28 to 32° C. is maintained in the brood-chamber. On spring days this exhalation from the brood, which smells like freshly baked bread, may be perceived some distance away in the direction of the wind. Very probably this strong odor sets free the same reaction in queenless and broodless colonies as the queen odor does; but as such colonies always go over to the queen-right colony, even if there is no brood at all or only a minimum amount, so in spite of this vapor from brood and pabulum (the larvæ swim in food), it is very likely the queen odor and the humming of the queen-right colony which are of first importance.[35]

But, on the other hand, the attachment of the bees to the brood is very strong, as may be seen from the fact that an unruly swarm, which has already withdrawn from one unaccepted hive, will certainly remain if a frame of brood is hung in it. Again, swarms can often be enticed from an undesirable place for capturing them (the middle of a hedge, for example), by means of a frame of brood.[36]

THE INDIFFERNT ODOR OF YOUNG BEES.

Young bees, particularly those just emerging, have an apparently faint and indifferent odor, and they are, therefore, not attacked in a strange colony; the same thing is true of young queens. In cutting out queen-cells, it happens repeatedly that the young queens which are entirely or nearly "ripe" free themselves from their compartments. If such a queen is immediately allowed to run through the entrance of a queenless colony, the queening is usually successful. This depends, perhaps, upon the fact that, as described, the individual odor is not yet developed, analogous to the similar indifferent "infant odor," and that the common reaction-loosing hive odor has adhered but little so far. It is curious that there are colonies which will not allow themselves to be requeened;[37] then all artifices are in vain.

However, in the winter months, when the bodily functions which determine the intensity of the individual odor are for the most part quiet or weakened, the strength of the individual odor decreases. In consequence of this we have prompt friendliness with strangers, since the lessened odor of the hive excites only a weak reaction. Therefore a union of colonies can be undertaken in early spring without observing the precautions otherwise necessary.

I noticed one day a change in two hives standing close to each other, which was totally unintelligible to me. Colony "A," in which a vigorous increase was to be expected, showed a constant diminishing of numbers, while colony "B" strengthened in a surprisingly short time. By good fortune colony "A" was of the native brown variety, and colony "B," a yellow Italian hybrid. This color distinction of the varieties, which has helped to solve so many mysteries of the domestic economy of bees, brought the explanation in this case. I was soon sure that colony "B" was taking up the young from the other hive, and I found out how after long observation. A passage through possible crevices could not take place, nor could the crossing be from one alighting-board to the other; therefore only the flying bees had to be taken into consideration. I noticed after some time that the young Italian bees always took their flights of orientation earlier than their neighbors. Now, when a thick cloud of these young bees, humming loudly, would be flying in front of colony "B," the native colony would gradually begin to send out bees for orientation, but its mass of humming bees was always considerably smaller. This was because many bees, attracted by the loud buzzing, immediately plunged into the neighboring tumult, there oriented themselves, and accordingly entered colony "B" thereafter. There they were

[35] The "constancy" of bees to their queen, which is always the dominant instinct, manifests itself in a starving colony by the fact that the queen is always the last to die; she is fed to the end by the dying bees. In order to confirm this, I put a queen with a few bees and very little food into a box covered with wire gauze. After forty-eight hours the bees were very weak; two days later only four were still alive; the next day but one was living, while the queen was apparently as vigorous as ever. The last surviving worker lay on its side unable to crawl; but when the hungry queen approached demanding food, it tried feebly to join its proboscis to that of the queen in a vain attempt to give her food. Finally the queen turned away; and when I looked again, half an hour later, the last worker was dead, but the queen showed no sign of weakness. I then put her back in the colony.

[36] Dathe, l. c., p. 225 and 230.

[37] Bienenwirtsch. Centralblatt, Jahrg. 28, Heft 19, p. 298, 1892.

accepted on account of their indifferent odor, and chiefly, perhaps, because of their entirely "harmless" conduct.

FAILURE OF THE HIVE-ODOR REACTIONS IN QUEENS AND DRONES.

It is of interest that the hive odor of a strange colony causes no reaction at all in a queen. Queens never react either peacefully or hostilely toward strangers or toward bees belonging to the hive. They demand nourishment from every bee, and may maintain themselves even in the most hostile colony as long as it is queenless. Even the "angrily" buzzing bees which besiege the queen-cage in a solid mass, and which try to bite and sting the queen through the wire cloth, put the required food into the extended proboscis of the queen. In this manner a queenless colony will often feed ten or twenty confined queens; but if one should accidentally free herself and be accepted by the colony, then the bees will let the rest starve.

The queen recognizes as an enemy only her "rival," even if reared in the same colony (daughter or sister), and who, therefore, must have the same family and hive odor. If two queens come upon each other, only one will remain on the battlefield.[38]

If the queen is pleasing to every bee in every colony, the same thing may be said of the drones, who are extremely cosmopolitan, and who loaf about from hive to hive, and in consequence, apparently, of their specific odor, they are received peacefully everywhere, provided, of course, that the killing of the drones has not yet begun. At no time do they display the smallest response of any kind toward other bees, except when they accomplish the object of their existence in the mating-flight.

ABNORMAL HIVE ODOR.

It is worthy of note that drone-producing (fertile worker) colonies, that is, colonies in which the workers take to egg-laying because a queen is lacking, and on account of lack of brood, are not only difficult to requeen, but also equally difficult to unite with queen-right colonies. This is doubtless in consequence of the peculiar hive odor called forth by the presence of so many egg-layers whose number increases the longer this abnormal condition lasts. According to the investigations of Döhnhoff, almost all the bees finally lay eggs without conducting themselves differently from the usual non-laying bees.[39] A true queen odor does not seem to develop, and I have observed that drone-laying queens are never rendered the "homage" which a normal queen receives. As long as she is unfertilized, she seems to be unnoticed by the inmates of the hive; but as soon as she begins laying eggs she has around her constantly a ring of "courtiers" (see p. 7). Other colonies very frequently may be united without special precautionary measures, but not so with fertile-worker colonies, which can be joined successfully only by the application of very special precautions.[40] We therefore have here an abnormal hive odor of a peculiar kind.[41]

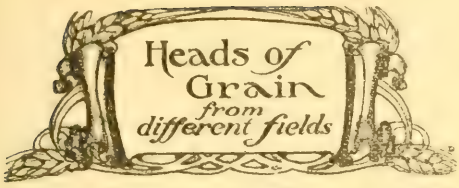
In any case it is evident from the foregoing that the hive odor is exceedingly complicated—much more so than would appear from Bethe's account; and the idea of a simple chemical substance and a chemical reflex, incapable of modification, is not enough to clear up the proceedings which are involved.

[38] The queen is normally the absolute "monarch" in the colony; but in spite of that we not seldom find cases where there are two egg-laying queens. Here we have the successor encroaching upon the old decrepit queen before the latter dies. But under such circumstances there are always two brood-nests—the queens do not come together. The following observation stands alone, and is the more remarkable because it has to do, not only with two queens, but with two of different varieties. "Since I had the opportunity," writes one Mr. Breuer, in the Rheinischen Bienenzeitung, "to obtain a purely mated Carniolan queen, I took out the old queen on July 17th, and put in the Carniolan. She was accepted without delay and immediately began laying. Another queen was positively not present in the colony. The brood developed quickly, but I kept noticing among the young bees Germans as well as Carniolans. When I revisited the hive I found upon the same frame, hardly five centimeters apart, two magnificent queens, peacefully together—one German, the other Carniolan. The brood-nest was not divided, but just as normal as if the eggs had all been laid by one queen." (See reference in Bienenw. Centralblatt, No. 22, 1899. Hannover.)

[39] Bienenzeitung, XIII. Jahrg., No. 20. In passing, I might submit the following: It has been shown experimentally that, as in the circumstances cited, the workers (normally sterile) take up egg-laying. I shall here mention only one such investigation, and shall not take up the various anthropomorphic explanations which are usually given. There is a wide-spread view among bee-keepers that the larvæ of workers which are located nearest to the queen-cell are fed occasionally on royal jelly by mistake; on account of this exceptional nourishment, it is believed that a better development of the ovaries may take place. This view is held also by v. Siebold and Huber. (The ovaries of workers normally consist of about twenty to thirty egg-tubes, whereas those of the queen contain about four hundred.) Parallel with and partly qualified, by this view is the incorrect idea that there is only one or a few egg-laying bees in a drone-producing colony; but if one realizes that almost all workers in such a colony lay eggs, this view is already weakened. In my opinion we here have to do with the same reflexes which induce a colony to produce a young queen during the lifetime of an old weakened queen that is laying eggs in insufficient numbers. What "prudence" and "deliberation" on the part of the bees this suggests to the ordinary observer! Again the same reflexes impel a colony to erect queen-cells if the queen is kept confined for a long time (see p. 14). It is, I believe, for the greater part an unsatisfied instinct for feeding. In the first case we have the pabulum, which is produced in great quantity, and which is not reaching its natural destiny, acting to produce a hypernutrition of the bees, and consequently the stimulation of organs which normally are not stimulated at all.

[40] Dathe, l. c., p. 161.

[41] I shall not consider further the special abnormal hive odors generated by disease (dysentery, foul brood, etc.), nor through the irritability over the lack of the queen.




### THAT MYSTERIOUS TROUBLE; THE HONEY GATHERED DURING CERTAIN ATMOSPHERIC CONDITIONS WAS THE CAUSE.

On page 1568, Dec. 15, I read Mr. Youngman's article on the loss of his bees. Twice during 43 years my bees gathered honey in the fore part of June that did not agree with them; and if it had not been for a sudden change for the better in the weather conditions my colonies would have gone down as Mr. Youngman's did.

In the summer of 1906, while on my rounds through the province inspecting apiaries I found many apiaries affected just like Mr. Youngman's, only not so bad. For a time sick bees could be seen on the grass in front of the colonies, crawling away to die; and when I examined the colonies I found a good many dead larvæ here and there all through the brood-chamber.

Mr. Youngman asks if this trouble will return. No, not if the atmospheric conditions are right when your bees are gathering honey, and they are generally right then.

Woodburn, Ont. WM. MCEVOY.

### GERMINATING BASSWOOD SEED.

I have tried to germinate basswood seed in all kinds of ways, and have never yet been able to make more than a very few grow. H. W. HYSER.

Austerlitz, Mich.

[It is very difficult indeed to germinate basswood seed. We manage the problem, however, very satisfactorily by taking up the little plants under the basswood-trees every spring. Nature does better than we can. Evidently basswood seeds require considerable freezing and thawing before they will germinate. At all events, the young trees will spring up very numerously under a thrifty basswood providing there is not too heavy an underbrush nor too many dead leaves. If the soil is not too heavily covered with grass the young trees will come up in large numbers. These can then be transplanted.—ED.]

### MEETING OF THE LEBANON COUNTY, PA., ASSOCIATION.

The Lebanon County Bee-keepers' Association held a meeting Dec. 29 at the queen-rearing apiaries of S. K. Snyder, Lebanon, Pa., to elect officers for 1908, and transact other important business. A feature of the meeting was a display of wax, ranging through all shades from almost pure white to black, showing the results of careful rendering from clean combs, and carelessly from old dirty and pollen-clogged combs. There was also a display of fancy comb honey by various members.

The Association holds quarterly meetings at the home of some member, where they display their products, have social chats, tell of their success or failure as the case may be, and try to outdo each other in the production of fancy honey and wax. Much interest is taken in those meetings, and they are looked forward to with pleasure.

The financial condition of the association is good. It has 25 members on the roll, with prospects of a good many more.

E. L. BROWN, Sec.

### LIQUEFYING HONEY BY EXPOSURE TO HOT AIR, OR OVER A STEAM-COIL.

In your footnote to Mr. Townsend's article, page 1575, Dec. 15, you say, "The novice should clearly understand that honey should never be heated except over a body of water." Are you sure that this is strictly correct? A few years ago the question of using dry heat to liquefy granulated honey was discussed in our State convention at Madison. Mr. Geo. W. York, of Chicago, said that he placed a 60-pound can of honey on his steam-register, and it was nicely liquefied without injuring the honey. Since that time I have liquefied tons over an asbestos mat placed on the top of a stove-drum over a soft-coal stove, and always without any detrimental effect.

I have seen the plan of placing the cans over an ordinary hot-air register, in any home or building where a furnace is used, put to the test with like good results. I believe that dry heat is all right, only it is slower than the hot-water plan. But in many cases it is very handy, and the element of time may make no difference. The main point is to heat the honey to a temperature not high enough to injure the flavor. The dry heat can be gauged as readily as the other, and is a safe method if properly applied.

HARRY LATHROP.

Bridgeport, Wis., Jan. 25.

[There is not the slightest objection to liquefying honey on a coil of steam-pipes or furnace register; but many do not have these. To heat a can of honey on an ordinary stove-mat we should say would be attended with a great deal of risk, to say the least. You, as an old veteran in the business, would have no trouble, but to advise a novice to attempt that method would be unwise. We still believe that the average person should melt his honey over water unless he has steam-coils or a furnace-register at his disposal; and even then the hot water would be quicker.—ED.]

### A REPORT FROM AN AUSTRALIAN BEE-KEEPER.

It may interest some of your readers to know how we are progressing in this part of the world. We are having a very dry spring. The outlook for a honey crop is not at all bright. The bees wintered well, but would not build up except by feeding. I have 130

hives of bees, half of them are strong, and the other half fair; but I have been feeding for about six weeks to keep them in good condition should the weather break. I find the articles written by E. W. Alexander, Doolittle, and Dr. Miller very interesting—in fact, some of the kinks we get from the pens of these men are worth dollars to us, which we may never find out in a lifetime by our own experience. F. C. GOLDER.

Pittsworth, Queensland.

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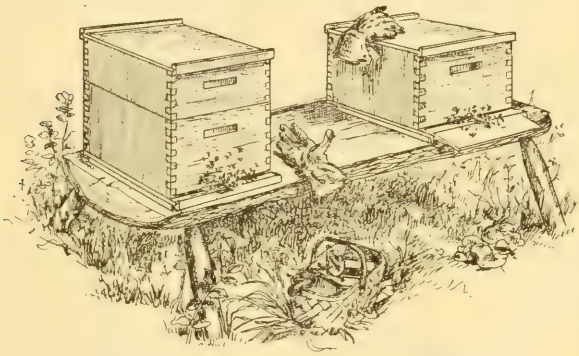
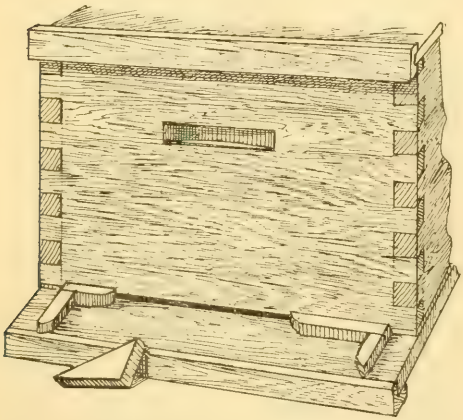
### A DURABLE HIVE-STAND.

The hive-stand for me is a bench made of slabs from a saw-mill, cut long enough for two hives. Bore two holes in each end for the legs. If for a hill-side, make the front legs longer to even up the grade. I use locust or red cedar for legs, and they last a long time. Few men will ever live to use the second set. Such a stand is cheap, and handy to move, and better than cement to save the hive-bottom.



HIVE-STAND MADE FROM A SAW-MILL SLAB.

For contracting the entrance to the hive, make a letter L of two strips one inch square. One of these should be three inches long, the other two inches. By reversing we have a small or medium entrance, said letter L to lie on the alighting-board. A corner may be sawed from a board as shown, and I like such a block better, only it costs more if the lumber has to be bought.



Blairstown, N. J. W. E. CONKLIN.

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### TOP AND BOTTOM STARTERS; A REASON WHY COMBS ARE SOMETIMES IRREGULAR; HOW TO CORRECT THE OCCASIONAL DEFORMITIES.

I have just read W. A. Pryal's trouble with bottom starters in sections, and Dr. Miller's ideas in regard to his failure. I have had the same deformed comb as shown in GLEANINGS, but not more than one in two or three hundred when I used full sheets of foundation.

I use the Hubbard section-press and Daisy foundation-fastener, and the tall Ideal plain section. I cut the starters as wide as they will work well between the walls of the section. My explanation of the cause of the deformity, or not connecting of top and bottom starters, is this: Occasionally a section will not stay square as it leaves the press. When the foundation starter is put in the top, the reëntering side of the section crowds the foundation to the obtuse angle, and, later, when it is placed in the super and squared up, the side of the section next to the obtuse angle strikes the foundation and presses it out of plumb at the opposite lower corner so far that the bees fail to connect it with the bottom starter, but fasten it to the fence, even when I have carefully leveled the hive-stand with a spirit-level. Sometimes the starter is broken loose from the top entirely.

For these reasons I cut sheets of foundation in two, and used only half-sheets for the top and about a ⅛-inch piece at the bottom. This practically overcame the trouble. I have seen the two combs meet half way, but I never saw the lower one tip over to one side. The only combs fastened to the fence was where the upper starter fell down.

After following this plan for several years, getting straight combs, with only the fault that there might be creep-holes on the sides in case of a light honey-flow, I tried again with full sheets at the top of the section, and the lower starter not as wide as usual. I watched those sections that were not square, and corrected their shape till I saw them properly placed in the super. In this way I have reduced the number of deformed ones to a minimum, and believe it pays to use full sheets of foundation in sections, with a bottom starter. A. D. HOPPS.

LaMoille, Ill.

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### INCREASING THE CAPACITY OF THE ALEXANDER FEEDER BY THE ATMOSPHERIC PRINCIPLE.

Ever since the Alexander feeder has been on the market I have been watching for somebody to say something about a Board-

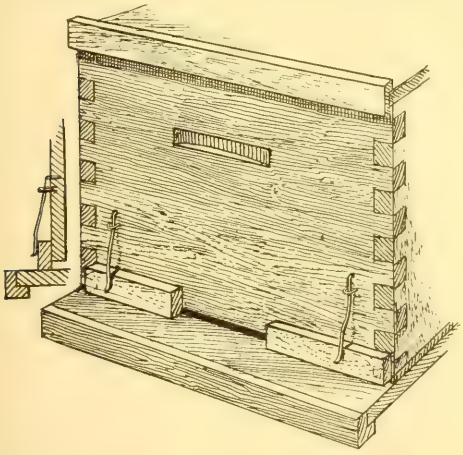
man-Alexander feeder. Take a board about ¼ in. thick and 4¼ wide. Bore a three-inch hole through it and nail it on the top at one end of an Alexander feeder. You can use either quart or one-half-gallon Mason fruit-jars. It can be used either with or without the jar, according to the amount you want to feed. The jar should project down in the feeder about ½ inch or more. I make my feeders out of 2×4 material, boring them out with an expansive bit. No special cap is needed. Just punch some holes in a fruit-jar lid. HARLEY CONDRA.

Seymour, Iowa.

[This feeder was illustrated on page 151 of our last issue.—ED.]

### SPRINGS TO HOLD THE ENTRANCE-BLOCKS IN PLACE.

I have a very simple device to use for keeping the entrance-blocks in place. I have found the blocks so often moved, and perhaps a weak colony robbed out, that I tried the plan I now use, and find it works perfectly. I use a spring for each block, made from a piece of No. 9 steel wire, 8 in. long, with ½ in. at one end bent at right angles. The short end is driven into the front of the hive about 2½ in. from the side, and high enough so that the lower end is just above



the bottom. A small staple straddles the spring an inch from the top, leaving about 6 in. clear. The entrance-block (⅝×1½ on edge) slips between the free end of the spring and the front of the hive. The springs are perpendicular when in place.

McAlpine, Ont., Can. E. H. CLARE.

### LATE FALL FEEDING AS ADVOCATED BY E. W. ALEXANDER.

I wish to say I most heartily indorse what Mr. E. W. Alexander says in regard to late fall feeding of bees. Jan. 1, page 29. I have experimented along that line for several years, and I have found where fed heavily with sugar syrup, owing to climatic changes, or weather, or some other way, possibly the conditions of the colony, the stores fed would granulate unless there was added 5 lbs. of honey to every 20 lbs. of sugar used. If tartaric acid was used instead, I have never lost a single colony fed this way, and packed five or six inches on sides and back end of hive, 10 to 12 inches of buckwheat chaff on the top, with the cover of the hive slightly raised at the back end of the hive, then closed after zero weather is past. My bees have been always in fine condition in the spring.

Dushor, Pa. C. W. RUMSEY.

### THE ACTION OF THE NEW NATIONAL PURE-FOOD LAW WITH REFERENCE TO HONEY PUT UP IN TIN.

Please tell me if extracted in tin packages is subject to the food and drug law.

North Creek, Ohio. F. J. KRUMM.

[Honey put up in tin, especially original packages, does not necessarily require labels; but all such honey, when shipped from one State to another, must be exactly as billed; that is to say, it must conform entirely to the representations of the seller to buyer. If labels are used they must exactly represent the contents.—ED.]

### PIE-PLATES FOR HOLDING FEED WHEN COLONIES ARE SHORT OF STORES IN COLD WEATHER.

Last fall I bought a lot of bees that had been worked for extracted honey. The one who worked them left enough honey to feed the bees until the next season. But as it was late in the season I concluded not to feed until needed, or to defer feeding until spring if possible; but early in the winter the children where the bees were located moved the lids and cloths on the hives so the stores that they had were robbed and wasted.

After saving the remnants I saw that I would have to feed. After the first attempt at making candy in greased pans I was somewhat disgusted with all the bother and fuss. Then I remembered that some one told me, or I read it or dreamed it, that the prepared hot candy could be poured into pasteboard box lids and bodies cut down to the proper depth.

As I was fussing with this plan and now then expressing my disgust, a friend who was living with me gave me an idea. The next few minutes found me riding as fast as I could to the nearest bakery; and, after arriving home, all the fuss and bother was over, as all I had to do was to pour the hot candy into the paper pie-plates that I purchased, and set them away to cool, after which they were given to the bees.

Before my friend mentioned the pie-plates the different books and papers I had read put loaf sugar in my mind; but I think my friend's plates saved me money, and the bees received the required feed with less difficulty, as I found a few with liquid feed near the cluster, and only a little granulated honey in the hive.

It seems to me as though the editor and some others did a little experimenting on this line last winter, but too late to help me; and as I never read or heard of the paper

plates I thought I would tell the whole thing, even if some things were retold.

Ft. Collins, Colo. R. L. PENNELL

[In our issue for Jan. 15, page 96, we gave some experiments on feeding candy in winter. Perhaps it is this to which you refer.

Candy made of sugar and honey mixed into a soft dough should never be given to a colony of bees *unless* it be given in paper pie-plates, or wooden butter-dishes, or some sort of receptacle to prevent the candy, when it becomes warm or moist, from running over the frames and killing the bees.—ED.]

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THE LOSS DUE TO EVAPORATION IN THE FEEDING OF SUGAR SYRUP.

I see you and Mr. U. H. Bowen overlooked two very important points regarding his experiments in feeding bees, as recorded on page 1599, Dec. 15. 1. The bees had not yet completed evaporating that syrup when he did the last weighing, as will be seen by comparing weights at the different dates. From the 15th to the 17th, out of the 6 lbs. previously fed, there was a loss of 4 lbs During the next two days the loss was but 2½ lbs., while it should have been as much as during the previous interval. Probably damper or colder weather made the difference. If he had weighed the hive each day for a week longer he would have found them losing all this time more than was necessary for their subsistence, probably causing a shrinkage of 5 lbs. more, reducing his 19 to 14 lbs.

2. When the bees had completed evaporating that syrup in cool damp weather it still contained at least 25 per cent of water, still reducing the amount to 11½ lbs., or 55 per cent of the sugar fed. When the bees had this "honey" capped, the amount was still more reduced.

I am very glad to get his report, as I had contemplated feeding syrup next fall for winter feed, because I thought it cheaper than honey. I think Mr. Alexander loses too much by extracting and feeding back; and his plan evidently unduly excites and wears out his bees, and he can sufficiently stimulate breeding in a way that will save stores and not be so hard on the bees.

Lander, Wyoming. I. W. BECKWITH.

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HOW TO FASTEN FOUNDATION TO HORIZONTAL WIRES.

On a cool morning place your frame upside down on the table. Slip the foundation clear down into the groove, but in such a way that every second wire will be on the opposite side. It is easy when the wax is cool. Leave it that way till the day gets warm and the wax soft; then press in the wedge strips; lay the frame down; spur the wire down, first on one side and then the other. A. BRUHN.

Enumclaw, Wash., Dec. 29.

[Your plan is perfectly feasible; in fact, we believe it is the only right way for the wedge-top frames and horizontal wires.—ED ]

TUBERCULOSIS AS A DISEASE OF THE MASSES.

Oh how I do love good books! and I love the good men and women who give the world good books at reasonable prices. You know I have had considerable to say of late in regard to the "great white plague" (probably because of the dear sister who has been thus afflicted*), and that is why I have been so eagerly watching for reports regarding the efforts of our great doctors to combat it. Well, one of my "happy surprises" was to get hold of Dr. Knopf's prize essay. It is published by Fred P Flori, 514 East 82d St., New York, and much credit is due Mr. Flori for giving the world such a beautiful book for only 25 cts. paper, 50 cts. cloth. There are 104 pages and 30 illustrations, some of them beautiful half-tones, and I rejoice to learn that the book has *already* been translated into 21 different languages.

The motto of the book, given on the cover, is "To combat consumption, as a disease of the masses, successfully, requires the combined action of a wise government, well-trained physicians, and an intelligent people." The book should be read by everybody, and everybody will be pretty sure to read it after getting once well started. It should be read by all, because the ways of living that stamp out consumption will stamp out a hundred other ailments as well. It is along the lines T. B. Terry and myself have been urging for some time past. Plenty of air, and cool outdoor air at that, is the great theme. I told you last winter and spring, or tried to tell you, that the best place for *chickens* was not an *apartment* warmed up by steam-pipes, and I felt then and feel now that God was revealing it to me that *human beings* should not be warmed by warm apartments. If you can not do any better, perhaps it is better to be warmed thus than to suffer with the cold. If *obliged* to sleep in a warm room, fix something so you can sleep with your head out of the window or on the window-sill with the window up.

The book contains several pictures of arrangements of this kind. A large part of the book (and several illustrations) is devoted to doing away with indiscriminate spitting on the floors and sidewalks, and *pocket spittoons* for consumptive people are described and illustrated. Humidifiers for correcting too dry an atmosphere indoors are described and illustrated. Here we have "Terry" again.

The matter of diet is fully discussed by the

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*I am extremely happy to inform all inquiring friends that this sister (Mrs. C. D. Gardner, Manistee, Mich.) is *very much* better, and she has just written me that she doesn't seem to mind the winter weather at all, so far, and that she weighs more than for a number of years.

most able physicians of the world, and the whole book, in fact, as I understand it, is the result of a *congress* of the best medical talent of the world. I am sure great good would come from using this book as a textbook in schools; and if the world were compelled to read it and *live by it* I think it would do more to lessen sickness, pain, and death, than any one thing that has ever been done since the world began. It is a significant fact, and one that points plainly to the trend of the times, that *no medicine* is recommended at all. A tremendous protest is made against liquor, tobacco, and stimulants of every kind.

Reader, if you are a friend of humanity help Fred Flori to put this book in the hands of a suffering world, and *do it quick.*

I submit, in closing, some clippings from different pages:

There is no doubt that alcoholism must be considered the greatest enemy of the welfare of a nation, the most frequent destroyer of family happiness, the ruination of mind, body, and soul, and certainly the most active coöperator of the deadly tubercle bacillus or germ of tuberculosis (consumption).

In families in which there is a fear of hereditary transmission of the desire for strong drink, even the mildest alcoholic drinks should be absolutely avoided. It would also be best if all people so predisposed, or who may have acquired only the occasional desire for drink, would never smoke, for experience has taught that attacks of dipsomania (periodical sprees) are often caused by an excessive use of tobacco.

The love of nature and life in the open air should be more cultivated. In the proportion in which this is done, tuberculosis will decrease.

At the International Tuberculosis Congress which convened in Paris in 1905, the American medical profession was represented by an official delegation appointed by the President of the United States, composed of Drs. Beyer, Flick, Jacobs, and Kropf. There were also delegates from the various medical centers, among whom were such men as Brannan, of New York; Lowman, of Cleveland; McCarthy, of Philadelphia; Pottenger, of Los Angeles, etc.

At the closing session of this congress an invitation was given to have the next Tuberculosis Congress meet in Washington in the fall of 1908. That will be the first time that this distinguished body will honor our country by its presence; and the American medical profession as well as the public at large should rejoice in the distinction and the prospect of having the greatest minds engaged in the combat against the white plague gathered at our national capital.

The first executive order with a view to preventing the spread of tuberculosis among the employees of the government by a president of the United States was issued by Theodore Roosevelt, Feb. 28, 1906.

A sanatorium should not only be a place where a patient becomes cured, but also a place where he should learn some lessons for the future. All that he will have learned from the rules and regulations, and the advice of the physician concerning how to protect himself and others from contracting the disease, how not to take cold, and how not to lose what he has gained, are precious lessons which he will take home with him.

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## MY 1908 CHICKEN STORY.

Now, dear friends, even if this is to be a "chicken story," and perhaps a good deal of it specially for the children who read GLEANINGS, I think it may pay you all to read it, for in it I shall tell you a good deal about Florida, touching on it as a place for invalids, tuberculosis, lettuce-growing, and perhaps automobiles, and, may be, *flying-machines* also.

On page 63, Feb. 15, 1907, I told you about a White Leghorn hen that would not only lay eggs and hatch chickens the year round, winter and summer, but that it was her regular habit to commence laying again when the chicks were only two or three weeks old; and by the time she had a nest full she weaned her chicks and commenced to set again. If I didn't tell you this last part, it is because I neglected to do so. I tried to buy this remarkable hen, but she was not for sale; but I told you how I did succeed in buying five of her pullets, because they *persisted* in flying over the fence and getting out of the yard. I told you last winter of my plan to develop this valuable trait in watching the five pullets and their progeny. With the cheap incubator and sitting hens, I secured something like 100 chickens; but a large part were roosters, and many of the pullets were more or less colored; and as I wanted my new strain to be all white I asked Mr. Shumard to send me only the white pullets. He therefore shipped me 26 pullets and 2 roosters. On p. 44, Jan. 1 this year, you will see a report of *one* of these five white hens. Sure enough, she began to cluck almost as soon as she was let out with the other 25; but she kept on clucking (probably because she was separated from her 20 chicks before it was time to wean them), even while she laid an egg every day. Now please turn to p. 498, April 1, 1907, and read the article about "fighting mothers." I soon found, by her leg band, this hen that clucked every day while she laid was the fighting mother of last winter, and I soon found, also, that she was the acknowledged boss of the ranch. Young or old roosters included, cleared the way when she came along. This winter I have a 66-egg Cyphers incubator, besides the old cheap one; and as our people in Ohio had shipped me a new brooder they wanted me to try in Florida, I made no provision for my chicks.

When the chicks began to hatch, the brooder hadn't reached here, and I had been unable to coax a single one of my 26 hens to get broody. The day *after* the chicks were out, this "fighting mother" I have been writing about was on her nest when I went to gather the eggs. She not only "flatly *refused*" to vacate, but came so near taking several "mouthfuls" out of the back of my hand that I thought I should have to back out. She stayed on the nest over night—just *one* night, mind you. When I spoke of giving her some of the chickens from the incubators Mrs. Root (and the neighbors whom we consulted) said she would kill them, *sure.* I suppose you all know there has been a lot said and written about introducing queens. Well, I think I can tell you something about introducing "day-old chicks." I took one chick first, the one that first broke the shell. I tossed him up against the hen; but as she paid no attention to him he soon traveled back out of the barrel where she was sitting. Just about sundown I tried again. I took a dozen chicks and tossed them one after another over behind her; but she apparently paid no attention to the poor motherless waifs. Mrs. Root said, "There! didn't I tell

you that no hen would take chickens when she has been sitting only one night?"

Right here something happened. Let me digress a little. In some one of the States a law was passed requiring that not only should automobiles stop when horses seem fractious, but that the driver should say "soothing words" to the frightened animal. One of the automobile journals had a good deal of merriment about the "soothing words," and suggested the law-givers should furnish some samples of the words to be used. Well, that Leghorn hen, after considering the matter a little time (as any *good* and *wise* mother should), evidently decided in her wise little head to adopt the newcomers, even if the whole thing was rather premature. She uttered a few "soothing words" to those poor "orphlings" that had never seen a hen before nor heard a cluck. The effect was electrical. They responded in a shout of joy. Of course, it was a very small shout; but the language on both sides was the method of communication that came straight from the great God above. There were 73 in the two incubators, and we gave her about half, that night, and the rest the next day. It is now the wonder of the neighborhood to see her march about with her flock. The second night it was so cold there was ice on the boards; but she cared for them all without a loss. They huddle under and over her, and around her, and keep the whole inside of the barrel at nearly brooder temperature. Mr. Rood looked into the barrel one evening and declared we must have a "flashlight" photograph of the happy family. As nearly as I can make out, they keep slowly changing places during a cold night, much as the bees in a cluster change places. Those that get too warm come out in front and let the chilly ones go back.

Owing to the unusually fine weather and abundant rains, lettuce has been rather a drug in the northern markets, and Mr. Rood has almost a quarter of an acre of the finest "Big Boston" head lettuce I ever saw, with no market for it. As fast as the heads threaten to burst I am taking them by the wheelbarrowful and giving them to my 25 laying hens. Yesterday I got 19 eggs and 20 to-day. A barrowful lasts them hardly two days; and not only is their ration of grain greatly decreased, but as long as they have plenty of lettuce all other garden stuff is unmolested. You can throw open the gate to the poultryyard and let them have free range, thus saving expensive fences of netting if you give them plenty of grain and water, and all the *lettuce* they want. With eggs at 35 cts. per dozen I am inclined to think it will pay to grow lettuce for poultry. My flock of 70, a week old, will consume two good-sized heads a day. I slash it with a sharp caseknife across two ways and then across the top, so as to shred it small enough for them to swallow, and they seem to thrive on it with all the "baby-chick food" they will take.

OUTDOOR AIR FOR CHICKENS AND PEOPLE.

¶ Before I knew I had a sitting hen I prepared a home-made brooder by covering a square five-gallon can with old clothing and filling it with hot water. It was placed on its side a few inches over the floor, and curtains put around it in my incubator cellar. The cellar keeps pretty near 70 degrees day and night, with a pretty good supply of fresh air, and the chicks did very well until I gave them to the hen. Mrs. Root protested, however. She said they wanted the outdoor sunshine, and, above all, they needed a *mother*. She doesn't believe very much in lamp-heated brooders. Now listen a minute. Cyphers "Hints" says the temperature of the brooder should be about 95 the first week; 90 by the end, and 85 the second week, and so on. The chicks in that barrel were running all over the dooryard when the temperature was below 50, and they were less than a week old. Some of them would scud out when it was only 40 early mornings, and then back under the hen, or into the "cluster" in front of her, until they warmed up for another trip. I wish you could all see my outdoor chicks, and then take a look at those in the best artificially warmed poultry establishments. You may recall that I visited several of them around New York city last April. If a sitting hen can "handle" 70 chicks in Florida in *January*, what does anybody want of a brooder? Another thing: The "books" tell us gravely, "Chicks should be kept in the brooder 6 or 8 weeks," according to the weather.

Now, dear reader, we come to something of more importance than the chicken business of the whole world, even if it *is* the most important rural occupation. Thousands of human beings are kept in palatial "brooders," warmed by artificial heat, and breathing bad air, when there isn't a shadow of an excuse for it. Elsewhere I have made editorial notice of a wonderful book on tuberculosis by Dr. S. A. Knopf. Some of the beautiful pictures of the way they cure consumptives (outdoors in the pine woods) brought vividly to mind the picture of those 70 chicks around the mouth of their barrel. The multitude of bright little eyes, and the happy contented "cheep, cheep" (even with a temperature of 40 outside), are never found in brooders warmed with a lamp at a temperature of 85 to 95—that is, unless I am very much mistaken.

While I was watching and enjoying my busy mother with her flock of 70, Mrs. Root said, "There is a fine automobile coming up the road; don't you want to stop and see it?" Please bear in mind it was not so *very* long ago that automobiles were my latest hobby. I considered a minute, and then replied, "Sue, to tell the truth, *just now* I would not trade my 'fighting mother' hen, with her brood of 70, for their whole outfit—that is, for my own personal use."

In conclusion, if other hens can not be made to do what this hen does, then we should "get busy" and develop a strain of fowls that will lay and sit, and take charge of large broods from the incubator, and work cheaper and *do better work* than any artificial mother ever did, or ever can do. Veritable "Florida flying-machines" they will be.

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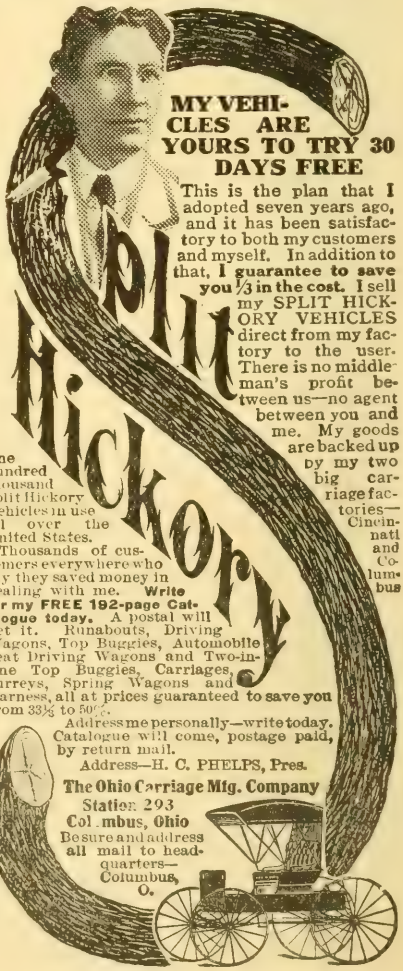


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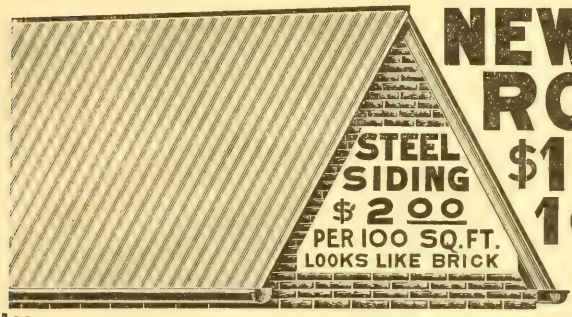


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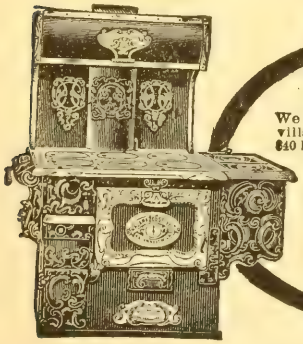

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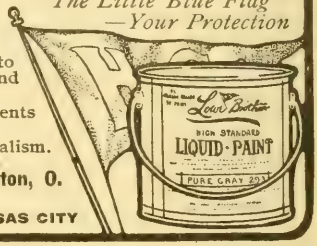


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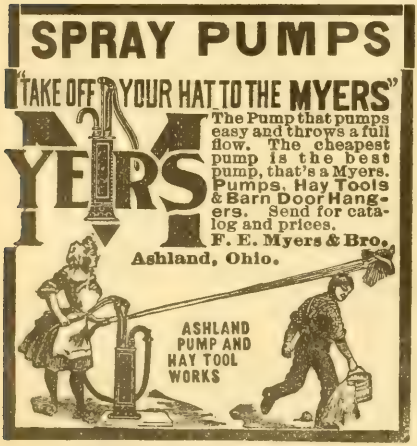


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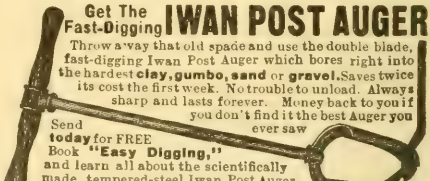

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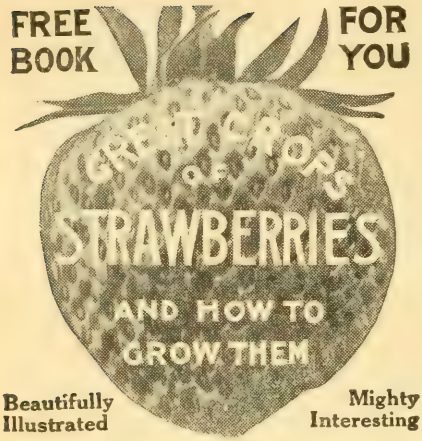


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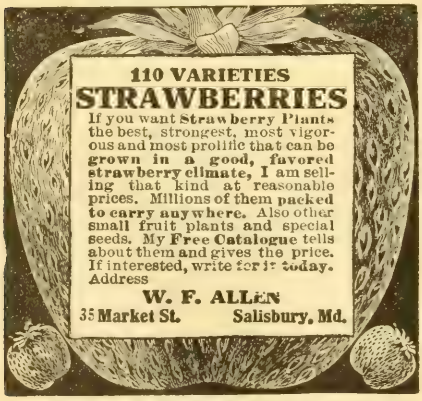


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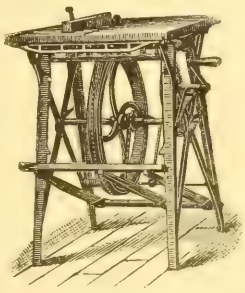

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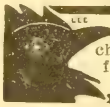

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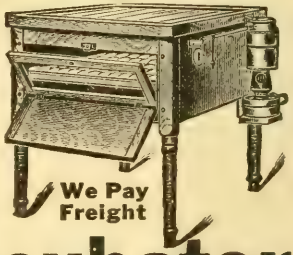


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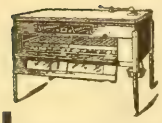

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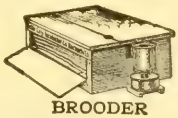

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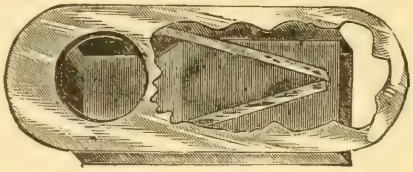

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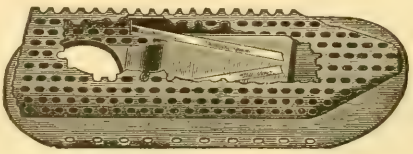

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H. A. BUSHBY, Rydal, Kan.

FOR SALE.—A fine lot of magnolia-trees. These are beautiful evergreens, and excellent honey-plants. Sometimes we get a 60-days' honey-flow from our trees. There is nothing more beautiful than a magnolia. Trees, 20 cts.; three for 50 cts., postpaid.
R. H. MANLY, Riverton, La.

FOR SALE.—*Dried Fruit*, California to consumer, direct from where produced; wholesale prices; finest quality, fresh packed. Write for prices.
CALIFORNIA PRODUCTS CO., DEPT. 27, Colton, Cal.

FOR SALE.—A perfectly equipped apiary in foothills, 30 miles from coast; 150 colonies; excellent location for honey; 160 acres of land—40 tillable, the rest good grazing; fine springs; perfect locality for the health-seeker Price $1700. Address
J. D. BENNETT, 629 Clay Ave., San Diego, Cal.

## Poultry Offers.

FOR SALE.—40 B. P. R. pullets cheap to make room. Eggs in season. MRS. W. L. BENNETT, Misco, O.

WHITE ROX.—"Fishel's" stock and eggs. Write your wants. DR. C. L. VAN OSDOL, Dillsboro, Ind.

FOR SALE.—White Wyandottes, 15 eggs, 75 cts.; 30, $1.25. Uncle Sam potato, very productive; 1 pound by mail, 30 cts. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—White Wyandottes. Egg-record strain: standard-bred, farm-raised, unlimited range; healthy, vigorous, prepotent. Eggs, $1.50 per 15.
F. H. TRENT, Hollybrook Farm, Rockford, Tenn.

## Bees and Queens.

FOR SALE.—All who intend to buy bees, queens, and hives, should write postal for Charles W. Zweily's 1908 catalog. CHARLES W. ZWEILY, Fremont, Ohio.

FOR SALE.—400 colonies Italian bees in 8 or 10 frame Dovetailed hives with Hoffman frames, at $6.00 per colony. In lots of 10, $5.00 per colony.
F. A. GRAY, Redwood Falls, Minn.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. Choice melilotus (white sweet clover) seed for sale at eight cents per pound.
W. P. SMITH, Penn, Miss.

EARLY ORDERS booked now for delivery after May 1st. Best Italian bees, $6.00 per colony. Two-frame nucleus, $2.00. Queens, tested, $1.00; doz., $11.00. Untested, 75 cts.; doz., $8.50. Virgins, 40 cts.; doz., $4.50. Cash orders filled first.
GEO. H. REA, Reynoldsville, Pa. Rt. 2.

## Wants and Exchange.

WANTED.—75 colonies of bees; prefer in 10-frame L. hives, easy shipping distance of Chicago.
R. B. HOLBROOK 226 S. Howard Ave., Austin, Ill.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price.
OREL L. HERSHISER,
301 Huntington Ave., Buffalo, N. Y.

WANTED.—Names of parties having bees to sell in South. Give price. Would like to correspond with bee-keepers on or near the Ohio, Cumberland, and Tennessee rivers. W W. CRIM, Pekin, Ind.

WANTED.—The address of some person who would let his bees on shares. California preferred. State number of colonies and condition.
PERRIN, 417 S. Flower, Los Angeles. Cal.

## Honey and Wax Wanted.

WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard,
North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 S. Water St., Chicago, Ill.

WANTED.—To buy basswood, clover, and amber extracted honey for cash. Best prices paid. Send sample, and quote price delivered in Preston.
M. V. FACEY, Preston, Fillmore Co., Minn.

WANTED.—No. 1 and fancy comb honey; 4x5x1⅜ section preferred. Also light extracted. Must be guaranteed pure. Write, stating grade and how put up, and lowest cash price.
C. M. CHURCH, Arnold, Pa.

## Honey and Wax For Sale.

FOR SALE.—1500 lbs. beeswax.
DR. GEO. D. MITCHELL & CO., Ogden, Utah.

FOR SALE.—2000 lbs. honey at 10 cents per lb. f. o. b. anywhere. B. F. AVERILL, Howardsville, Va.

FOR SALE.—36 cases of comb honey in 4¼ and 4x5 plain sections. Clover and raspberry.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—White-sage honey, case, 125 lbs. net, 9 cts. per lb.; 3 cases at 8½. Light amber, 7 to 8¼.
I. J. STRINGHAM, 105 Park Place, New York City.

FOR SALE.—4000 lbs. choice white honey in 60-lb. cans—just the thing for bottling purposes; 9½ cts. in small lots, or 9 for the lot. H. B. PHILLIPS, Auburn, Me.

FOR SALE.—Alfalfa extracted honey in 60-lb. cans, 8 cts. per lb., f. o. b. Kansas City; sample sent upon request. One thousand pounds of beeswax for sale at 27 cts. per lb. C. C. CLEMONS & CO., Kansas City, Mo.

FOR SALE.—Buckwheat and amber comb honey, $3 per case; 12 cases, $2.85; 25 cases at $2.70 per case; 24 sections to case; dark amber extracted at 7½ cts. per pound in 60-lb. cans.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans.
ROBT. A. HOLEKAMP & SON,
4263 Virginia Avenue, St. Louis, Mo.

## Bee-keepers' Directory.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa. *Queen-rearing outfits and books; new catalog free.*

QUEENS.—Clover stock. Experience and methods count. Write me. H. G. LARUE, LaRue, Ohio.

ITALIAN queens bred for honey, untested, 75c each.
GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Extra honey queens and choice mountain honey. Francis J. Colahan, Bernardo, San Diego Co., Cal.

QUEENS.—Pure Gold, Red-clover, Caucasian, Banat. ROSE LAWN APIARIES, College View, Lincoln, Neb.

ITALIAN QUEENS.—Golden and red clover. Send for 1908 circular. G. W. BARNES, Box 340, Norwalk, O.

Bee-keepers' supplies, Italian queens. Send for a free catalog. ARTHUR RATTRAY, Almont, Mich.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Neb.

ITALIAN BEES and queens—Red-clover strain imp'd mothers. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIAN BEES, queens, and Root's bee supplies.
E. SCOGGIN, Carlsbad, N. M.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

Three-band and golden Italian; untested, 75 cts.; per doz., $7.00. E. A. SIMMONS, Greenville, Ala.

ITALIAN BEES and queens—red-clover and golden strains. E. A. SIMMONS, Greenville, Ala.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list free. B. F. YANCEY & SON, Angleton, Tex.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

FOR SALE.—Golden and red-clover Italian queens. WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

ITALIAN QUEENS by return mail or money refunded. Circular free. D. J. BLOCHER, Pearl City, Ill.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted. W. E. TRIBBETT, Staunton, Va.

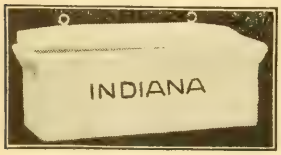
Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

ANGEL is breeding his Golden beauties and bright three-banded Italian queens, but will not offer any for sale this season, on account of not being at home at all times of the season. SAMUEL M. ANGEL, Evansville, Ind.

IMPROVED ITALIAN bees and queens ready in May. Circular and testimonials free; second-hand surplus arrangements for 4¼ sections, also folding cartons, cheap if taken soon, or will exchange. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular, order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

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INDIANAPOLIS CONCRETE BURIAL VAULT CO., 442 Board of Trade Bldg., . . Indianapolis, Ind.

CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLDG. CLEVELAND, OHIO.

We have just received notice of the death of Mr. Henry Alley, the veteran queen-breeder of Wenham, Mass. Our sincere condolence is extended to his sorrowing family.

### GREEN'S SEEDS.

This is the title of a new catalog which we have just printed for E. C. Green & Son, of Medina O., who succeeded to the garden-seed department of The A. I. Root Co. several years ago. They would be pleased to mail this catalog to any reader of this journal who will send a request for it. These enterprising seedsmen have originated a new tomato of such value that one of the big seed-houses of Philadelphia sent their tomato expert to Medina to examine it, and was so well pleased that he paid a big price for all the seed they had to spare. If in need of garden seeds, send to E. C. Green & Son, and, as a favor to us, mention that you saw it in this journal.

### CLOVER SEEDS.

There has been a sharp advance in clover seed, so that the best price at which we can offer Medium Mammoth or alsike seed, choice, is $12.00 per bushel; half bushel, $6.25; peck, $3.25; per lb., 23 cts.; by mail, 32 cts. per lb. Alfalfa seed will have to go at the same price. Medium grades of seed may be furnished a little cheaper. Write for sample and price if interested. Strange as it may seem, white-clover seed is now cheaper than other kinds, and can still be furnished at $10.00 per bushel; $5.25 per half bushel; $2.75 per peck; 20 cts. per lb. Crimson or scarlet clover will be furnished at $8.75 per bag of two bushels; $4.50 per bushel; half bushel, $2.40; peck, $1.25; 1 lb., 10 cts.; by mail, 20 cts. Unhulled white-sweet-clover seed at $11.00 per 100 lbs.; $3.00 for 25 lbs.; $1.30 for 10 lbs.; 15 cts. per lb.; by mail, 25 cts. Hulled seed, when we have it, 7 cts. per lb. extra.

### THE ALEXANDER BEE-VEIL.

We have secured, for making a bee-veil of wire cloth, a special weave of cloth having 8 meshes to the inch, and No. 32 wire painted black. Ordinary window-screen cloth is of the same size of wire, and 12 to 14 meshes to the inch. This special cloth is, therefore, more transparent, and obstructs the vision less, than any other cloth we were ever able to secure. One objection to a veil of this kind is its bulk and the difficulty of transporting it, either by mail or when packed with other goods. We have overcome this one objection by making it with an open seam from the crown to the bottom of the skirt. Eight small safety-pins are included to pin up this seam when you receive it, or you may prefer to sew it up. The veil is rolled up so as to be placed in a box 3 x 3 x 12 inches so that it can be mailed safely for 12 cents postage, or packed with other goods to go by freight Price, complete, 60 cts. By mail, 72 cts. Special wire cloth for veil furnished at 6 cts. per foot or piece for a veil at 15 cts.; by mail, 2 cts. a foot extra, or 20 cts. postpaid for a veil-piece 10 x 33 inches, having edges folded ready to sew on the cloth parts.

### COLD-FRAME OR HOT-BED SASH.

We are receiving some nice orders for these sash, and we believe that, if more of the truck-gardeners understood how good they are, and the low price at which they may be had, we should be swamped with orders. We have not seen as low prices quoted by anybody else, not even the cut-rate mail-order houses, as we are making on these. Some of our readers may

know of greenhouse-men in their neighborhood who do not take this journal, and may do them a favor by calling their attention to our prices. Cypress hot-bed sash, 3⅓ feet by 6 feet, for four rows of eight-inch glass, with hard-wood round rod crosswise through the bars midway between the ends to help space the bars and hold them secure, shipped K. D., 90 cts. each; 5 for $4 25; 10 for $8.00. Put together, 10 cts. each more, not painted. If painted, add 10 cts. for each coat of paint. If glazed with 8 x 10 glass, add $1.00 per sash; 8 x 10 glass, $2.40 per box: 5 boxes at $2.30, or 10 boxes at $2.20.

SECOND-HAND FOUNDATION-MILLS.

We have to offer the following second-hand foundation-mills in good condition. We shall be pleased to hear from any one interested. To such we can send a small sample of comb foundation representing the kind of work produced by the particular machine you enquire about.

No. 079.—6x2½-inch hex. cell thin-super mill, in very good condition. Price $12.00.

No. 008.—6x2½-inch hex. cell thin-super mill, in good condition. Price $12.00.

No. 086.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $12.00.

No. 088.—12x2½-inch round-cell heavy-brood mill, in fair condition. Price $12.00.

No. 077.—10x2 inch-medium brood round cell, old-style frame, in good condition. Price $14.00.

No. 092.—6x2½-inch hex. cell extra-thin-super mill, in fine condition. Price $15.00.

No. 2275.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $13.00.

NEW TAPER-PANEL HONEY-JARS.

We show here an illustration of a new style of honey-jar holding half a pound. It is a taper-panel jar with lacquered tin cap lined with waxed paper wad which turns on tight with a one-fourth turn, warranted to hold air-tight. We expect to have ready soon the one-pound size of the same style jar. Packed in reshipping-cases of two dozen each, ready to ship again, when filled, without additional packing.

Price ½-lb. taper-panel jar, 80 cts. per case; 6 cases, $4.50.

Price 1-lb. taper-panel jar, $1.00 per case; 6 cases, $5.70.

Put up in crates of 2 gross, ½-lb. size, $3.75 per gross. Put up in crates of 1 gross, 1-lb. size $4.80 per gross.

SIMPLEX HONEY-JARS.

The factory have assured us that we may again secure this popular honey-jar in several sizes, including the one holding one pound of honey. We have ordered a fresh supply, but do not expect to have them in stock till next month. They will be packed in reshipping-cases of two dozen each, and the price will be $1.10 per case; 6 cases, $6.30.

NO. 25 HONEY-JARS.

During the past year we have had an unusual amount of trouble with breakage of this jar, even in the reshipping-cases packed with corrugated paper. The breakage occurred either in the porcelain cap or the top rim of the jar where the cap rests. We find we can get this same jar with lacquered tin cap without the center being cut out. This cap is lined with waxed paper wad, which seals tight on the top edge of the jar. This style of cap not only does away with breakage almost entirely, but enables us to furnish the jar at a lower price. We are not yet supplied with the new stock, but expect to have them next month at the following price. They will be packed as usual, two dozen in reshipping partitioned cases. No. 25 jars, tin cap lined, 90 cts. per case; 6 cases, $5.10. We can still furnish from stock the usual style of No. 25 with porcelain caps at $1.10 per case; 6 cases, $6.30.

A NEW SIZE OF SECTION.

There seems to be a demand in some localities, where bees are inclined to daub with propolis or otherwise discolor the wood in sections for a wide frame completely enclosing the sections. Our regular supers are adapted to the regular sections in section-holders without a top-bar. To provide a top-bar as well as a bottom it is necessary either to make the super deeper or the section shorter. In order to use the regular deep super we have decided to make a new section, 4¼x4¾x1⅜ or 1½ plain, no beeway. This will be used in a section frame hanging by top-bar in the regular deep super, interchangeable with the shallow Hoffman frame 5⅜ deep. This will necessitate a new fence adapted to this size of section, which will be designated by the letter N. The 4¼x4¾x1⅜ will hold a full pound, and will work best in the eight-frame super, 24 to the super. In the Danz. width (16¼) ten-frame super the 4¼x4¾x1⅜ will fit best 32 to the super. These sections may be split for inserting foundation by the Hand method, and the correct size of sheet for that purpose would be 4⅝x17⅛. Price of N section-frames, $2.50 per 100 in flat. Price of N fences, $2.00 per 100. Sections 4¼x4¾x1⅜ or 1½, same price as regular Danz., $4.75 per 1000, No. 1; $4.25 for No. 2. Unless you specify we will send frames and sections 1⅜ wide, and supers fitted with the same. Deep super fitted with N section-frames, N fences and springs, either 8 or 10 frame, will be designated 2 | N 8. Price, nailed and painted, 70 cts. each; in flat, 55 cts; 5 for $2 50.

2 N | 10. Price, nailed and painted, 75 cts. each; in flat, 60 cts.; 5 for $2.75.

With sections and foundation-starters included.

4 N | 8. Price, each, nailed and painted, $1.00; in flat, 75 cts. each; 5 for $3.50.

4 N | 10. Price, each, nailed and painted, $1.05; in flat, 80 cts. each; 5 for $3.75.

With sections and full sheets of foundation.

1 N | 8. Price, each, nailed and painted, $1.40; in flat, $1.00 each; 5 for $4.50.

1 N | 10. Price each, nailed and painted, $1.45; in flat, $1.05 each; 5 for $4.75.

These are not listed in our catalog this season, and not in stock with any of our dealers. If you wish to test them you will have to make special orders to secure them. You can get them through your dealer if you order in ample time and are not in a hurry to receive them. This section will require a new size of carton and a new size of shipping-case to put them up for market. We offer the new size for experiment this season to see if it has sufficient warrant for introduction into the catalog another year. By cutting beeways in the top and bottom they could be stored without fences or separators, and four could be placed in a shallow Hoffman frame for storing, though they would not be as well protected as in a section-frame. The latest style of shallow frame with ⅜-inch ends would be rather scant in length inside to take four sections, but those made earlier would have room.

## Convention Notices.

The Northern California Bee-keepers' Association, F. J. Lewis, Pres., will hold its fourth semi-annual convention at Pioneer Hall, Seventh St., between J and K, Sacramento, Feb. 19 and 20. Morning session at ten; afternoon, 1; evening, 8. The objects of this association are to promote and protect the interests of its members. Headquarters at the Western Hotel. All bee-keepers are requested to attend.

B. B. HOGABOOM, Secretary-Manager.

SHORT COURSE IN BEE-KEEPING.

The University of Tennessee will give a short lecture course in bee-keeping extending from February 27 to March 11, inclusive. The tuition is free. The whole State of Tennessee is suited to bee-keeping, and this short course ought, and deserves to be well patronized. There are other short courses on different subjects which are well worth while attending by young men and women of the State.


| | | 1 | 6 | 12 |
|---|---|---|---|---|
| Abhsbaz Caucasian | Tested queen | $1.45 | $7.00 | $13.00 |
| | Select tested | 2.00 | 11.00 | 20.00 |
| | Select breeding | 3.00 | 17.00 | 32.00 |
| | Extra select breeding | 7.00 | | |
| Banats | Tested | 2.00 | 11.00 | 20.00 |
| | Select tested | 2.50 | 14.50 | 25.00 |
| | Select tested breeding | 5.00 | | |

Safe delivery and genuineness of breed guaranteed. Write orders distinctly, especially the address, and indicate by letter the queen ordered.

. Ivanhoff, Georgieuvsk, Province Terskaya, Russia (Caucasia).

# Mr. Bee-keeper,

Was 1907 a POOR YEAR for you?

It was a GOOD YEAR for users of

# DADANT'S FOUNDATION.

One dealer used 14,000 pounds.

Another dealer used 7,250 pounds. Another dealer used 4,500 pounds. Another dealer used 4,500 pounds.
Another dealer used 6,000 pounds. Another dealer used 4,500 pounds. Another dealer used 3,000 pounds.

*Thousands of pounds sold to the bee-keeper direct, or worked up for him out of his beeswax.*

The DEALER likes DADANT'S FOUNDATION because the bee-keeper likes it.
The bee-keeper likes it because his BEES like it.
The BEES like it because it is exactly like their own comb, so PURE and SWEET and CLEAN.

DADANT'S FOUNDATION is the Standard because it is the BEST.

Wax worked into foundation. Send for our Supply Catalog.

**DADANT & SONS, HAMILTON, ILL.**

# SUPPLIES FOR BEE-KEEPERS

**Every thing you want; all made by us in our own factories--at LOWEST PRICES.**

**The American Bee-keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

# W. T. FALCONER MFG. CO.

DEPARTMENT G, :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# "If You Want a Good Recommend for Your Buggy, Ask My Wife for It."

That's the way one of our customers wrote us recently. He also said,

"I want to tell you how well pleased I am with my Sheltertop Cab. It is far better than you represented it to be. I would not sell it for twice what it cost me if I could not replace it. It is the only buggy I ever had that I could take my wife riding in on a windy day, and enjoy myself. PERCY STITES, Wauseon, O."

**The Sheltertop Buggy** can be changed from the wide open form shown above to the tightly closed form shown below, in four seconds, without leaving the seat, dropping the lines, or stopping the horse. When closed it is absolutely storm-proof; wind, rain, mud, dust, snow, or sleet can not enter at any point; but your view in any direction remains unobstructed. There are no swinging or sliding doors on the Sheltertop Cab—no storm-apron, side curtains, no detachable parts of any kind; nothing to be lost, loaned, stolen, or forgotten.

**The Sheltertop Buggy** is built of the best material money can buy—built to wear well on rough roads—built to run light and run right through mud and sand and over rocks and ruts. It is not the cheapest buggy on the market so far as first cost is concerned, but it is the cheapest buggy in the world "in the long run."

## WHAT THE USERS SAY ABOUT IT:

I have used my buggy in all kinds of weather, over all grades of roads, and am well satisfied with it as a storm-proof buggy and with the material and workmanship. I like it because it protects me from winter weather and mud; because it is easy to get into and out of; because it is roomy, comfortable, and safe; and because it is a high-class buggy in every way.
E. A. SILVER, Sullivan, Ill.

The Sheltertop buggy came all right, and is properly named, as I consider it the best storm carriage I ever saw. It is light, and the only true storm carriage made anywhere.
F. H. CAMPBELL, Philadelphia.

The Sheltertop buggy reached me in perfect condition. For stormy or good weather I think it unequaled. It is a fine-running buggy, not heavy, and is much admired by all who see it.
LOUIS F. GRANDY, Chili Center, N. Y.

We will ship the Sheltertop buggy to any point in the United States on 30 days' "suspicion."

**Write for our free catalog.** It explains all about the Sheltertop buggy; illustrates and describes in detail fifteen different styles; tells you all about the material and workmanship, trimming, painting, etc. *Write for it to-day.*

LIFE SAVERS FOR LAND TRAVELERS
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**FOUTS & HUNTER CO.**

**333 S. THIRD ST. TERRE HAUTE, IND.**

# DEEN LOOM

# Flying Shuttle

WHY not put your spare moments to work bringing in extra cash? Some people in your town are waiting for some one to make up their rags into carpets, rugs and portieres.

It's genteel, honest work that any man or woman can do and make good profit at it. Just to prove it, here are the names and addresses of fifteen out of hundreds of people who have woven carpets and rugs at a good profit. They use a **Deen Loom.**

## Good Profits Made At Home

Mrs. C. R. Stover, Bradford, Ohio
Oma Cooper, Dale, Indiana
R. P. McGowan, Piedmont, W. Va.
Mrs. Rob. Record, Seymore, Illinois
Mrs. Henry Clark, St. Anthony, Iowa
Mrs. A. L. Clark, Central Square, N. Y.
Mrs. H. C. Blanahet, New Lathrop, Mich.
Mrs. T. E. Alley, Sylvan Grove, Kansas
Mrs. O. E. Albin, Kearney, Nebraska
Mrs. H. Goebel, West Point, Iowa
Mrs. J. S. Gilbert, Milton Junction, Wis.
Mrs. L. E. Foster, Bedford, Indiana
Mrs. Salanda Gunckel, Osgood, Ohio
Mrs. D. E. Williams, Pickering, Missouri
M. H. Vining, Waterloo, Iowa

Remember these are only fifteen of scores and hundreds who at this moment are hustling out work and getting good money for it.

## You Who Read This

Haven't you often wished for a useful employment by which to make money in your spare hours? No doubt you know of people who would gladly pay you for weaving their rags into carpets and rugs.

It's not only the poorer people that have hand-woven carpets and rugs on their floors, but well-to-do people of city, village and country-side appreciate the handsome and useful products of home-weavers.

By canvassing among your friends you can work up a good business. Profitable, too. Besides, it's done at home with the children, where you can have an eye on everything in house and yard.

## It's Not Hard Work

Weaving with a **Deen Loom** is soon learned. The Loom itself is a simple affair, easily handled, and soon understood. May Vittum, Barclay, Kansas, says:

"I can weave almost twice as much as I could with the old loom. I would not go back to the old one for anything. The new one is faster, easier, and does the best work."

Having a steel frame well-braced, and rigid, it resists the shock and stroke of the shuttle mechanism, remaining solid for years without repairs.

It will accomodate any size rug or carpet demanded.

## What May Be Woven

Any design can be made in any number of colors that taste and fancy may dictate. You can weave rugs, hammocks, all kinds of hand-weaves, carpets, portieres, etc. The materials to use are common carpet warp which can be purchased of any dry goods store; carpet rags, old clothes of any kind, old ingrain and brussels carpets, blankets, or nearly any kind of fabric. Your customers furnish you all material; you do the weaving and get good pay for it.

## A Few Prominent Reasons for Buying

1.—You can make from $2 to $3 a day if you weave 8 hours daily.
2.—You can make from $4 to $10 a week using only part of your time—say evenings after work and an hour in the morning.
3.—We help you personally by letter if you wish. But this is seldom necessary, because we send you simple, detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
4.—The Fly-Shuttle is easily filled, quick to handle, doesn't bother.
5.—The Winding Mechanism and Feed-Governor are new improvements. The latter keeps the warp and weft mechanism within control. It saves much material and prevents hours of thrown-away time used by old-style looms.
6.—It takes up much less room than many other styles. It requires a room but 10 feet square for a complete weaving shop.
7.—We send you everything with the Loom. You can go right to weaving as soon as you get warp and rags.

## You Needn't Pay All At Once

Pay something down. As Loom brings in profits send balance by easy installments.

Fill in the coupon and mail. We'll send our free catalog and a letter about our easy-pay plan.

**THE DEEN LOOM CO., Harlan, Iowa**

**Drawer 100.**

**COUPON**

Deen Loom Co.:— Date.....19....

Please send me your free catalog and detailed explanation of your "Easy Pay Plan" of selling your Deen Loom.

Name.....

Address.....

Town.....State.....

# Gleanings in Bee Culture

MASSACHUSETTS AGRICULTURAL COLLEGE

A Modern Apiary of Jumbo Hives under the Shadow of Mt. Hymettus (Greece).

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI March 1, 1908 No. 5

# DEEN LOOM

# Flying Shuttle

WHY not put your spare moments to work bringing in extra cash? Some people in your town are waiting for some one to make up their rags into carpets, rugs and portieres.

It's genteel, honest work that any man or woman can do and make good profit at it. Just to prove it, here are the names and addresses of fifteen out of hundreds of people who have woven carpets and rugs at a good profit. They use a **Deen Loom.**

## Good Profits Made At Home

Mrs. C. R. Stover, Bradford, Ohio
Oma Cooper, Dale, Indiana
R. P. McGowan, Piedmont, W. Va.
Mrs. Rob. Record, Seymore, Illinois
Mrs. Henry Clark, St. Anthony, Iowa
Mrs. A. L. Clark, Central Square, N. Y.
Mrs. H. C. Blanahet, New Lathrop, Mich.
Mrs. T. E. Alley, Sylvan Grove, Kansas
Mrs. O. E. Albin, Kearney, Nebraska
Mrs. H. Goebel, West Point, Iowa
Mrs. J. S. Gilbert, Milton Junction, Wis.
Mrs. L. E. Foster, Bedford, Indiana
Mrs. Salanda Gunckel, Osgood, Ohio
Mrs. D. E. Williams, Pickering, Missouri
M. H. Vining, Waterloo, Iowa

Remember these are only fifteen of scores and hundreds who at this moment are hustling out work and getting good money for it.

## You Who Read This

Haven't you often wished for a useful employment by which to make money in your spare hours? No doubt you know of people who would gladly pay you for weaving their rags into carpets and rugs.

It's not only the poorer people that have hand-woven carpets and rugs on their floors, but well-to-do people of city, village and country-side appreciate the handsome and useful products of home-weavers.

By canvassing among your friends you can work up a good business. Profitable, too. Besides, it's done at home with the children, where you can have an eye on everything in house and yard.

## It's Not Hard Work

Weaving with a **Deen Loom** is soon learned. The Loom itself is a simple affair, easily handled, and soon understood. May Vittum, Barclay, Kansas, says:

"I can weave almost twice as much as I could with the old loom. I would not go back to the old one for anything. The new one is faster, easier, and does the best work."

Having a steel frame well-braced, and rigid, it resists the shock and stroke of the shuttle mechanism, remaining solid for years without repairs.

It will accomodate any size rug or carpet demanded.

## What May Be Woven

Any design can be made in any number of colors that taste and fancy may dictate. You can weave rugs, hammocks, all kinds of hand-weaves, carpets, portieres, etc. The materials to use are common carpet warp which can be purchased of any dry goods store; carpet rags, old clothes of any kind, old ingrain and brussels carpets, blankets, or nearly any kind of fabric. Your customers furnish you all material; you do the weaving and get good pay for it.

## A Few Prominent Reasons for Buying

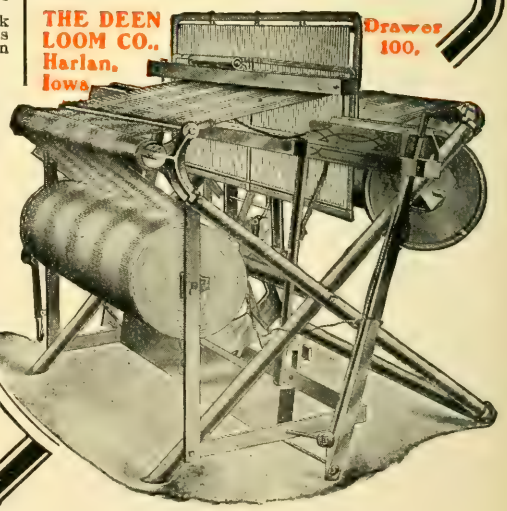
1.—You can make from $2 to $3 a day if you weave 8 hours daily.
2.—You can make from $4 to $10 a week using only part of your time—say evenings after work and an hour in the morning.
3.—We help you personally by letter if you wish. But this is seldom necessary, because we send you simple, detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
4.—The Fly-Shuttle is easily filled, quick to handle, doesn't bother.
5.—The Winding Mechanism and Feed-Governor are new improvements. The latter keeps the warp and weft mechanism within control. It saves much material and prevents hours of thrown-away time used by old-style looms.
6.—It takes up much less room than many other styles. It requires a room but 10 feet square for a complete weaving shop.
7.—We send you everything with the Loom. You can go right to weaving as soon as you get warp and rags.

## You Needn't Pay All At Once

Pay something down. As Loom brings in profits send balance by easy installments.

Fill in the coupon and mail. We'll send our free catalog and a letter about our easy-pay plan.

**THE DEEN LOOM CO., Drawer 100, Harlan, Iowa**



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Address.....

Town.....State.....

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GIVE ME YOUR ORDERS for the **Best Goods Made.** You wi be pleased on receipt of them. You will **save money** by ordering from me. My stock is complete; in fact, I keep **every thing** the **bee-keeper** needs. **Cincinnati** is one of the best **shipping-points** in the Union, **particularly in the South,** as all freight now **goes through Cincinnati.** Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly **free of charge.**

## Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

# C. H. W. WEBER

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**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

ST. LOUIS.—Since ours of Jan. 20 a light demand for extracted honey has been noticeable. Comb honey is, however, as dull as reported formerly. We quote: Fancy white comb honey, 15 to 16; No. 1, 14 to 15; amber, 13 to 14; broken and defective honey sells at considerably less. Extracted white, in cans, of which this market is bare, nominal at 8½ to 9; amber, in cans, 8 to 8½; in barrels and half-barrels, ½ to 1 cent less if liquid. Granulated in cans and barrels is selling at ½ ct. below above quotation. Beeswax, 27 for prime; all impure and inferior, less.

R. HARTMAN PRODUCE CO.,
Feb. 10. St. Louis, Mo.

KANSAS CITY.—There is some improvement in the demand for both comb and extracted; no change in price. We quote: Fancy white comb, 24 section, $3.25 per case; No. 1 white comb, 24 section, $3.10 per case; No. 2 white and amber, 24 section, $2.75 per case. Extracted, white, 8 to 8½; dark, 6. Beeswax, 25.

C. C. CLEMONS & CO.,
Feb. 10. Kansas City, Mo.

CINCINNATI.—There is nothing particularly new in the honey market at this writing, for business in general is quiet. We are selling the very fanciest comb honey at 16 to 17½; fancy table honey, in crates of two 60-lb. cans each, at 9 to 10; amber honey, in barrels at 5¾ to 7, according to the quality. For good beeswax, free from dirt, we are paying 28 cents cash and 30 in trade, delivered here. THE FRED W. MUTH CO.,
Feb. 14. Cincinnati, O.

INDIANAPOLIS.—Demand for best grade of extracted honey is good, while comb honey is meeting with slow sales. Very little honey is being offered by producers, and jobbers are carrying a very limited stock. Bottled goods in groceries find slow sales, which can be attributed to dull times; but there is another reason—many bottlers are making the mistake of putting out inferior goods. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 16 to 17; extracted white clover, 9 to 10; amber in barrels, slow at 6 to 6½. Beeswax, 28 cents cash or 30 cents in exchange for merchandise. WALTER S. POUDER,
Feb. 20. Indianapolis, Ind.

ZANESVILLE.—The demand for honey is still rather slack—very little change since the last report. Prices show a little weakening, evidently indicating that commission men are anxious to realize on their stocks, even at a sacrifice. No. 1 to fancy white comb brings at wholesale 17 to 18; very little demand for extracted except in small retail packages. Beeswax is very quiet; would accept small lots at 30 cts. in exchange for bee-supplies. EDMUND W. PEIRCE,
Feb. 20. 136 W. Main St., Zanesville, O.

CHICAGO.—There has been a better demand for comb honey this month; and while the prices are not over 16 to 17 for best grades of white it may clean up well at this range. Extracted is slow of sale at 8 to 9 for white grades; ambers, 6 to 7. Beeswax, 28.

R. A. BURNETT & CO.,
Feb. 10. Chicago, Ill.

*Later, Feb. 20.*—The market is a dragging one; very few sales are being made, and those of small volume. There is really not as much demand as in previous seasons at this time, with a large supply in sight.

DENVER.—The demand for both comb and extracted honey has been rather light of late, but we expect it to improve soon. We quote: No. 1 white, per case of 24 sections, $3.25; No. 1 light amber, $3.00 to $3.10; No. 2, $2.75 to $2.90; extracted, white, 9 to 10; light amber, 8 to 9; strained, 6¾ to 7½. We pay 24 cents for clean yellow wax delivered here.

THE COLORADO HONEY-PRODUCERS' ASS'N,
Feb. 14. F. Rauchfuss, Mgr., Denver.

SCHENECTADY.—Our market is very quiet, with a limited demand for all grades. We expect some movement in buckwheat extracted for Jewish holiday later on. We quote: Fancy white clover, 15 to 16; No. 1, 14; mixed and buckwheat, 12 to 13; light extracted, 8½ to 9; dark, 7½ to 8. CHAS. MACCULLOCH,
Feb. 19. Schenectady, N. Y.

SAN FRANCISCO.—Prices are well sustained on all grades of honey, though there is no great amount of inquiry. Stocks are sufficient for all present demand, but are expected to be well cleaned up before the new crop comes in. Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 6½ to 6¾.—*Pacific Rural Press*, Feb. 15.

THERE IS A SATISFACTION TO THE PRACTICAL BEE-KEEPER IN KNOWING THAT THE

**MUTH SPECIAL DOVETAILED HIVES, AND OUR OTHER SUPPLIES, ARE THE BEST MADE.**

Sold at manufacturer's prices here in Cincinnati.
Have been at it all our lives. Send for our free catalog.
28 cts. cash, 31 cts. in trade for good beeswax.

**THE FRED W. MUTH COMPANY**

51 WALNUT STREET THE BUSY BEE MEN CINCINNATI, OHIO

ST. PAUL.—Fancy white clover, new, per lb., 18; extracted, in 60-lb. cans, per lb., 10.
W. H. PATTON, Sec. Board of Trade,
Feb. 11. St. Paul, Minn.

LIVERPOOL.—Honey market for Chilian, 4 to 6½; Peruvian, 4 to 6½; Jamaican, 4½ to 6; California, 6½ to 11. Beeswax, African, 26 to 27; Jamaican, 34 to 35; American, 30 to 33; West Indian, 27 to 32; Chilian, 30 to 35½.
TAYLOR & CO.,
Jan. 29. 7 Tithebarn St., Liverpool.

MARSEILLES.—Beeswax of Madagascar, 30; Morocco, 30; Algeria, 30½; Aden or Abyssinia, 31 to 31½. French honey, 10; beeswax, 30 to 32.—*L'Apiculteur.*

HAVRE.—Chilian honey is selling at about 5 cts. per lb. Beeswax is calm at 33.


# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY
Purchasing Department,
205 La Salle St., Chicago, Illinois.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

HILDRETH & SEGELKEN,
265-267 Greenwich St. 82-86 Murray St.
NEW YORK.

# WESTERN Bee-keepers

.. will ..

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by ordering ROOT'S GOODS from Des Moines, Iowa.

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

JOS. NYSEWANDER
565-7.W.7th St., Des Moines, Ia.

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New Warehouse Root's Goods
Prompt Shipment Low Freight

EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

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# Gleanings in Bee Culture

$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.

*Devoted to Bees, Honey, and Home Interests.*

Published by
THE A. I. ROOT CO., Medina, Ohio

J. T. CALVERT, Business Manager

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PARIS, FRANCE. E. BONDONNEAU, 142 Faubourg St. Denis. *Per year, postpaid, 7½ fr.*

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**Steam Cooker-Baker.**

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Guaranteed to save 50 per cent in fuel, labor, time, and provisions. A whole meal cooked over one burner on any style stove. It assures you deliciously cooked hot meals; *30 days' trial.* No intermingling of odors or tastes. Fine for use in summer cottages. A necessity every day of the year. The only healthful way to cook foods and breadstuffs.

*Handsomely illustrated catalog free.*

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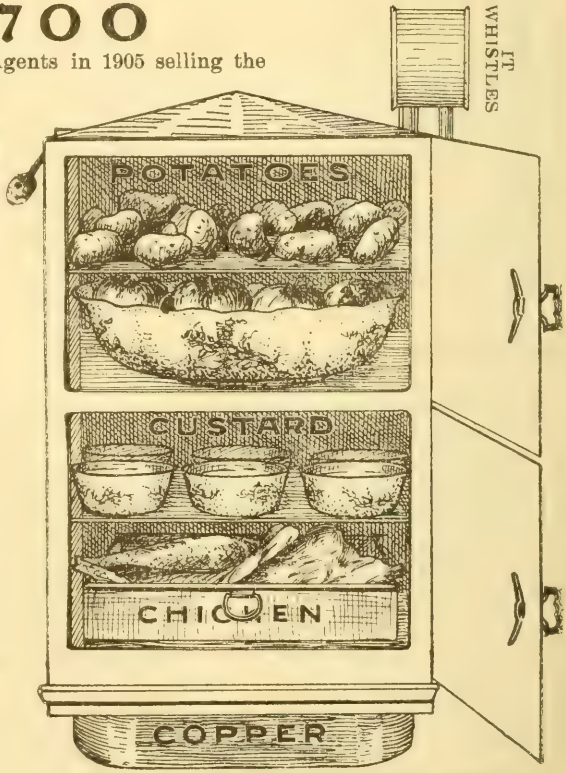
**908 Jefferson Av., Toledo, O.**



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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z HUTCHINSON, editor and proprietor of the *Bee-keepers' Review*, and author of Advanced Bee Culture.

No bee-keeper's library can be at all complete without a copy of this magnificent apiarian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal.*

This work of 536 pages is, as its name implies, a complete cyclopædia of every thing pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that, "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of GLEANINGS, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and out-apiaries; Dr. E. F. Phillips on the eye, parthenogenesis, and scent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say anything about a book of which already 100 000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner, and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal.* Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide," and "The Honey-bee."

# Gleanings in Bee Culture

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Department Editors—DR. C. C. MILLER, J. A. GREEN, PROF. A. J. COOK, J. E. CRANE, LOUIS H. SCHOLL, G. M. DOOLITTLE, R. F. HOLTERMANN, "STENOG," W. K. MORRISON.


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This firm is the result of a combination between eleven different factories, all located in the city of Cleveland, Ohio. The following have combined for mutual selling advantages: A buggy-top factory; a vehicle and harness factory; a handy wagon and steel-wheel factory; a paint and varnish factory; an incubator and brooder factory; an agricultural-implement factory; a metal roofing and siding factory; a sewing-machine factory; a fence factory; a stove and range factory, and a roofing factory. This combination proposes to sell its goods at factory prices direct to the consumer; and to reduce further the cost of selling they have combined to advertise as one concern. The offices are situated in the Whitney Building, Cleveland, from which a campaign of education in the line of direct purchase from the makers is being conducted. It has long been the desire of political economists to eliminate the middle-man; and the plan devised by The United Factories Co. seems the most reasonable and feasible of any that has been proposed. The readers of this journal have been favored with their advertisement of incubators and brooders, and from time to time we will publish small notices relating to other phases of their work. Write to them, mentioning this journal.

SHUMWAY'S RELIABLE SEEDS.

It is our privilege to call attention to the annual spring catalog of seeds and flowers issued by R. H. Shumway, the great seedsman of Rockford, Ill. He stsrted with seeds about the same time A. I. Root commenced to keep bees. By honesty and fair dealing he has succeeded in establishing a large trade in seeds throughout the middle.

EGGS FOR SALE.

Through some oversight on our part, the advertisement of Frank C. Pellett, of Atlantic, Iowa, offering White Wyandotte eggs, was omitted from our Feb. 15th number. Please note his advertisement in this and succeeding issues.


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## Catalogs Received

Queen Land, a catalog of Italian bees and queens issued by S. Simmins, Heathfield, Sussex, England.

John Lewis Childs, Floral Park, N. Y.; general catalog of farm and garden seeds, more especially the former.

Seed Annual for 1908; catalog of D. M. Ferry & Co., Detroit, Mich. The annual announcement of an old reliable firm.

T. W. Woods & Sons, Richmond, Va.; catalog of farm and garden seeds; annual announcement of a celebrated seed-house.

O. A. D. Baldwin, Bridgman, Mich.; catalog of strawberry-plants and small fruits. Important to the strawberry-grower.

W. N. Scarff's catalog of profit-getting fruits, New Carlisle, Ohio. Mr. Scarff's catalog is always interesting. Send for a copy.

Seed-book of Fairview Seed Farms, Syracuse, N. Y. This is largely a vegetable-catalog, suited to market-gardeners and others.

Mary E. Martin, Floral Park, N. Y.; flowers for springtime. General list of flower-seeds. Don't pass this catalog by when ordering.

R. M. Kellogg Co., Three Rivers, Mich.; full catalog of strawberry-plants. Every berry-grower should send for this catalog at once.

Catalog of L. J. Farmer, Pulaski, Oswego Co., N. Y., for 1908 A list of berry and small-fruit plants; also farm fowls of pure breeds.

Portland Seed Co., Portland, Oregon; a general list of seeds, bee-supplies, and poultry requisites, sold by a thoroughly reliable concern.

J. C. Harrison & Sons, Berlin, Md.; catalog of fruit-trees. This is the catalog and price list of a firm famous for its nursery fruit-trees.

W. F. Allen Salisbury, Md.; catalog of strawberry-plants and other small fruits. No berry-grower should forget to send for Mr. Allen's catalog.

Bateman Mfg. Co., Grenloch N. J.; catalog of "Iron Age" farm and garden implements. Ought to be in the hands of all farmers and gardeners.

Hatching Facts, from Belle City Incubator Co., Racine, Wis Catalog of 18 pages describing the Belle City Incubators and Brooders; also sprayers.

Green's seeds for 1908—catalog issued by E. C. Green & Son, Medina, Ohio (formerly The A. I. Root Co.). Our readers are all familier with this catalog.

Johnson's Garden and Farm Manual for 1908. Full catalog; 219 Market St., Philadelphia, Pa. Of great importance to truck and market gardeners everywhere.

Continental Plant Co., Kittrell, N. C.; strawberry-plants, fruit-trees, grapevines, etc. This is from one of the leading berry-plant growers of worldwide repute.

The Good & Reese Co., Springfield, Ohio; trade-list for January to March 1. Roses, etc. Said to be the most extensive growers of rose-bushes in the world.

Spring catalog of H. H. Berger & Co., 70 Warren St., New York—a handsome catalog containing many novelties of a superior character; worth sending for.

The Barteldes Seed Company, Denver, Col.; every thing for farm and garden; bee-supplies; very interesting to all growers in the Rocky Mountain region.

Catalog of the Texas Seed House, Messrs. Reichardt & Schulte, Houston, Texas. Enumerates seeds adapted to Texas, New Mexico, Oklahoma, and Louisiana.

Mills' Seed Catalog for 1908; a full general list of farm and garden seeds by F. B. Mills, Rose Hill, N. Y. Pennsylvania, New England, and New York readers, please note.

Thorburn's Seeds; a beautiful catalog issued by J. M. Thorburn & Co., 33 Barclay St., New York. One of the handsomest catalogs we ever saw. The covers are a work of art.

Currie Bros. Co., Milwaukee, Wis. Farm and Garden Annual, or general catalog of seeds. Our Northwestern readers can not very well overlook this list of every thing for the garden

Seeding machines, from The Wayne Works, Richmond, Ind. No farmer should fail to send for a copy of this beautiful catalog.

Seeds and Bulbs for 1908, issued by A. C. Kendal, 2010 Ontario St., Cleveland, Ohio. Very suitable for farmers and others in Northern Ohio.

Catalog of The Gem Incubator Company, Trotwood, O., U. S. A. A first-rate catalog of incubators and other poultry culture tools.

The Iron Age Farm and Garden Implements, from the celebrated Bateman Mfg. Co., Greenloch, N. J. Too well known to require any praise.

Henderson's Farmer's Manual for 1908. This, as its name implies, is a catalog of seeds for the f rm—not for the garden. Worth sending for by farmers.

Catalog of the Model Incubator Co., Chas. A. Cyphers, President, Buffalo, N. Y.—two catalogs gotten up in handsome style, and well worth sending for.

Price list of L. J. Farmer, Pulaski, Oswego Co., N. Y. This is not a catalog, but a price list of raspberry, strawberry, blackberry, and other small-fruit plants.

Poultry for Profit, by J. W. Miller & Co., Freeport, Illinois. This is a very handsome catalog of 130 pages devoted to the sale of incubators and fancy fowls.

Charles A. Green, Nursery Company, fruit-book and catalog, Rochester, N. Y. An excellent but unpretentious catalog of fruit-trees, etc., for the temperate zone.

Illustrated catalog of the Jackson County Nurseries, Bosky Dell, Ill.—devoted to strawberry, apple, peach, pear, plum, grape, cherry, raspberry, and other fruit-plants.

Hardy fruit and ornamental trees, shrubs, vines, and roses, by T J. Dwyer & Co., Cornwall, N. Y. This is the general catalog of the famous Orange County Nurseries.

The Improved Raney Canner catalog sent by The Raney Canner Company, of Chapel Hill, North Carolina. Valuable to those who want to can fruits on a small scale.

Farm and Garden Implements, Planet Jr., issued by S. Allen & Co., Philadelphia, Pa. Annual catalog of the famous Planet Jr. tools for farmers and gardeners.

Fourteenth Annual Poultry-Book and catalog of Successful and Eclipse Incubators and Brooders. (English Edition.) Des Moines Incubator Co., Des Moines, Iowa,

Johnson's Wholesale Trade Price List for 1908—intended for circulation among truck-growers and florists who require considerable quantities of seeds Address, 217 Market St., Philadelphia, Pa

Annual catalog of The Famous Old Trusty Incubator and Brooder, manufactured by the M. M. Johnson Co., Clay Center, Neb. Special catalog of nearly 200 pages with much information of value.

Sure-Hatch Incubator Co., Fremont, Nebraska—a large annual catalog of incubators and poultry-supplies. This is a large catalog of nearly 100 pages about the same size as those of this journal.

Trade Price List for 1908 of Livingston's True Blue Seeds. This is from the great tomato specialists, The Livingston Seed Co., Columbus, O. If you are in any way interested in tomatoes, send for it.

Elwanger & Barry, Mount Hope Nurseries, Rochester, N. Y. General catalog. The usual spring catalog of this famous firm. Also "How to Have Roses," by the same firm. Well worth sending for.

Henderson' Implement Catalog for 1908. As its name implies, it is a complete catalog of agricultural and horticultural tools; also books on rural life and welfare. Henderson & Co., 35 Cortlandt Street, New York.

How to Save One-half the Time, the Labor, the Cost of Hatching and Rearing Chicks by Artificial Incubation. This is the annual catalog of the H. M. Sheer Company, Quincy, Ill. Ships incubators knocked down.

Excelsior Incubators, Brooders, and the Wooden Hen, by Geo. H. Stahl, Quincy, Ill. This catalog extends to 208 pages. The name of Stahl is well known to American poultrymen, in connection with poultry supplies.

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A HOME INDUSTRY.

Many men and women are looking and longing for some profitable industry which they can pursue without leaving home or separating themselves from their families. In this connection there are very few industries which will in the long run surpass poultry culture, and by that we mean turkey and duck raising as well as chickens.

This industry has two great advantages over most pursuits of the kind. First, but little capital is required to start with; and, second, there is a market for the products almost everywhere. One may start with an incubator such as is made by the George Ertel Co., Quincy, Ill., for $7.85, delivered at any railroad station east of the Rockies. This holds 100 eggs which is ample for a beginner.

The catalog issued by the same concern is really a treatise on poultry, and ought to stimulate farmers very greatly to make far greater efforts than they have hitherto done to make the chicken business not only profitable but a pleasure besides. Write to the Ertel Co., mentioning us.

EVERGREEN WINDBREAKS FOR THE BLIZZARD BELT.

Nothing is doing more to improve farm life in the "blizzard belt" than the planting of hardy trees. This is particularly true of trees suitable for windbreaks to shelter man and beast from trying prairie winds. Crops, too, are sheltered, and in time the whole aspect of the country will be changed by tree-planting, giving not only a pleasing and attractive appearance to the landscape, but also doing much to make life more agreeable to all the inhabitants thereof. The treeless prairie is being rapidly changed into a beautifully clothed landscape at comparatively small expense. In the matter of fruit-trees, equally good results are being accomplished, and all parts of the earth have been ransacked to find fruits suited to the extremely trying conditions of our Northwest. One of the foremost workers in this line of human endeavor has been The Gardner Nursery Co., of Osage, Ia., who started at the problem 38 years ago, and who may be said, without prejudice, to have mastered that problem very satisfactorily. It is worth while encouraging such a firm with an order—the more so when you help yourself by doing it. It will pay *you* to write this firm for information concerning trees.

TO THE LADIES.

We desire to call special attention to the advertisement of the American College of Dressmaking, Kansas City, Mo. It appears on page 301 of this issue. We have carefully examined their literature, and we see no reason why any person with a natural aptitude for dressmaking may not learn this trade by this system of instruction by mail. There are many who will be glad to avail themselves of the offer now being made by this college of dressmaking.

# NOT A PARROT.

A parrot simply repeats. The *Bee-keepers' Review* does repeat some of the good things to be found in the other journals, but it does more—it comments upon them. Each article is appropriately introduced; the reason given why it is considered worthy of production; and, at its close, the salient points are enlarged upon, praised or condemned, as the occasion demands, and additional thoughts, views, and experiences given at length. Sometimes a short extract does little more than

**FURNISH A TEXT**

for a long editorial. In this way the extracted department is raised from a mere parrot-like repetition of what appears in other journals to one that has life, personality, and vim.

All of the journals are carefully read, and every thing of any importance is noticed in *some* way. Often the

**KERNEL OF A LONG ARTICLE**

can be given in a short editorial. Sometimes an article can be condensed, or a few paragraphs given, accompanied by editorial comment, and all be made clear. Occasionally an article must be given entire in order to do the subject justice, but some comment or criticism may add greatly to its value.

Years ago Mr. Heddon used to say that, if some one in whom he had confidence could read all of the bee-journals, select the articles that were of real value, and gather them together into one journal, he would gladly

**PAY TEN DOLLARS**

for such a journal. This is exactly what the *Review* does, at least it gives, in *some* form, all that is most valuable in all of the journals—hence its name.

A man who is making a business of bee-keeping ought to read *all* of the bee-journals; but if only one journal *is* to be taken, then the *Review* fills the bill most completely.

If you wish to see how *completely* the *Review* covers the whole apicultural field, yet how far it is removed from a mere parrot-like repetition, just try it for one year. It will cost only $1 00, and all of the back numbers for 1907 will be sent *free*, in the bargain. In other words for $1 00 you can get the *Review* for 1907 and 1908; and when you have sent your dollar, and received the back numbers, look them over carefully; and if you would then rather have

**YOUR DOLLAR BACK**

than to have the *Review* keep on coming for the rest of the year, just drop me a postal and I'll return the money, and you may keep the back numbers, and welcome.

**W. Z. HUTCHINSON, .. .. FLINT, MICH.**

# QUEENS FOR 1908

J. E. HAND, the veteran bee-keeper and EXPERT QUEEN-BREEDER, will devote a part of his time the coming season to the rearing of CHOICE QUEENS from a superior strain of LONG-TONGUE RED-CLOVER ITALIANS that have gained a world-wide reputation for HARDINESS, GENTLENESS, AND SUPERIOR HONEY-GATHERING QUALITIES. Watch for his ad. It will open your eyes to a few points in queen-rearing that will save you dollars.

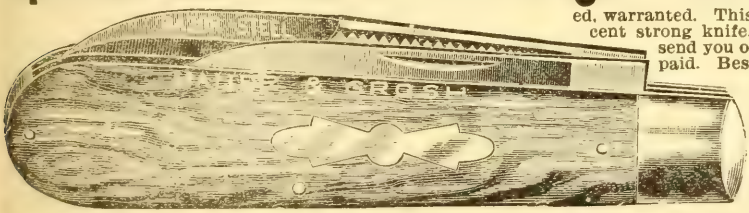
**HIGHLAND BEE AND POULTRY FARM, J. E. HAND, Proprietor, BIRMINGHAM, ERIE CO., O.**

# Lewis Bee-supplies at Factory Prices

BEST GOODS. PROMPT SHIPMENTS. MARCH DISCOUNT 2%.
Send for 1908 catalog on new supplies and fire-sale list.

**ARND HONEY & BEE SUPPLY CO., H. M. Arnd, Prop.** *Successors to*
**191-193 E. Superior St., Chicago, Ill.** **York Honey & Bee Supply Company.**

# Special Cut Price to Gleanings' Folks.



Every M. & G. blade is hand-forged from razor steel, file-tested, warranted. This cut is exact size of 75-cent strong knife. To start you we will send you one for 48c; 5 for $2, postpaid. Best 7 inch shears, 60c. This Knife and Shears, $1.00. Pruning, 75c; budding, 35c; grafting, 25c. Send for 80-page free list and "How to Use a Razor."

**Maher & Grosh Co.,**
**617 A St. Toledo, Ohio.**

# OUR 1908 CATALOG

is ready for mailing. We should like to send YOU a copy. It gives prices and description of "ROOT-QUALITY" bee-supplies. These are the goods that thousands of SUCCESSFUL bee-keepers are using. We are the "ROOT-QUALITY" HEADQUARTERS in MICHIGAN. We save you time and freight expense.

On the back outside cover page of our new catalog we make a special offer on GLEANINGS to both new and old subscribers. If you renew soon or wish to subscribe, let us know.

By the way, did you notice the list of goods that we are offering at a SPECIAL rate in Jan. 15 Gleanings? Look it up.

## M. H. HUNT & SON, Redford, Mich.

TO THE

## BEE-KEEPERS OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, "The best is cheapest."

**E. GRAINGER & COMPANY,**
**Deer Park,**
**Toronto, Ontario, Canada.**

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

European Bee-keepers!

## Save Time and Expense

by sending direct all your orders and correspondence to our exclusive agent for the European continent and its colonies. . .

**EMILE BONDONNEAU**
142 FAUBOURG - ST. DENIS, PARIS

**Prompt Service and Satisfaction Guaranteed. . . .**

**The A. I. Root Company**

# $UCCE$$ IN BEE-KEEPING

The man who makes a $ucce$$ in bee-keeping is the one who does things when they should be done.

The time to buy goods is before they are needed; not when the rush comes.

Let us send you our catalog for 1908, so you can make out an order now.

**THE A. I. ROOT COMPANY**

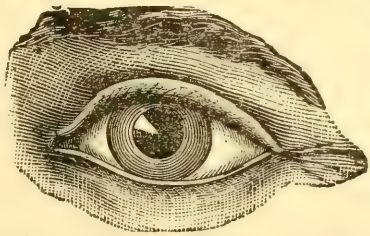
**SYRACUSE, :: :: :: NEW YORK**

# WE DO NOT SELL ROOT'S SUPPLIES

So many advertisers in GLEANINGS IN BEE CULTURE sell supplies bought from the Root Co that to explain away a false impression we are compelled to state that we are not jobbers, but *manufacturers*. We make all the Bee-supplies we sell. Minneapolis is the largest lumber-distributing point in America. We buy lumber to advantage; we manufacture by water-power; we have lowest freight rates, and we sell on manufacturer's profit basis. **Let us quote you prices.**

**MINNESOTA BEE SUPPLY COMPANY**

**NO. 22 NICOLLET ISLAND, .. .. MINNEAPOLIS, MINN.**

# Keep your  on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once. For prompt shipments and good service, we are at your command

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO,, MISSOURI.**

# What's the Matter With Hilton?

WHY, HE HAS A LOT OF SUPPLIES HE WANTS TO LET YOU HAVE WITHIN THE NEXT SIXTY DAYS AT A DISCOUNT, TO MAKE ROOM FOR THE NEXT SEASON'S GOODS. JUST SEND A LIST OF WHAT YOU WANT AND GET ESTIMATE. IF YOU HAVEN'T HIS FORTY-PAGE ILLUSTRATED CATALOG, SEND FOR IT AT ONCE

CASH OR SUPPLIES FOR BEESWAX AT ALL TIMES

**GEORGE E. HILTON**
**FREMONT, :: :: MICHIGAN**

**OUR SUPPLY BUSINESS HAS BEEN IN**

# New York City

for 15 years. It has increased each year. We want YOUR order this year, and will quote you attractive prices. Our prices are f. o. b cars here. We furnish bees in any quantities. Have seven hundred colonies in our own yards. Catalog free.

**I. J. STRINGHAM,**
**Apiaries, Glen Cove, L. I. 105 Park Pl., N. Y. City.**

# Bee-keepers' Supplies Sold

At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. **W. D. SOPER, Jackson, Mich.**

# ROOT'S BEE-SUPPLIES
**AT SPRINGFIELD, MASS.**
New Goods. Free Catalog. 'Phone.
**F. R. DANIELS, 117 FLORENCE ST.**

FOR SALE.—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

# THE DANZENBAKER SMOKER

PAT. OCT. 3, '05, JUNE 4, '07

**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case,** and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed,** giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot**; no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt,** expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

**1884** **1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock

**J. M Jenkins**
**Wetumpka, : : Alabama**

# Dittmer's
## COMB FOUNDATION

is the best, not because we say so but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**

**Dubois, .. Pennsylvania**

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**

H. G. ACKLIN, MANAGER

**1024 Mississippi Street, St. Paul, Minn.**

# At St. Louis

On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

**Root's Bee-supplies**

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**

DEPT. B,

1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**

**Dallas, : : . Texas**

**The Time To Place Your Order for QUEENS**

for spring delivery is here. Order now (with partial payment if not convenient to send all) and state when you want delivery. When ready for the queens, send the remainder. By so doing I shall be able to handle your order without the usual delays incident to the rush orders when the season is on.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested, in May and June, | $1.00 | $5.50 | $10.00 |
| Untested, after July 1 . . . | .75 | 4.00 | 7.50 |

Selects, 25 cents extra. Tested, May and June, $1.50; after July 1, $1.25. Nuclei and full colonies ready May 1. Catalog for 1908 free. Send for one.

**GEO. W. BARNES, Box 340, NORWALK, O.**

| | | 1 | 6 | 12 |
|---|---|---|---|---|
| Abhsbaz Caucasian | Tested queen | $1.45 | $7 00 | $13.00 |
| | Select tested | 2 00 | 11 00 | 20 00 |
| | Select breeding | 3.00 | 17.00 | 32 00 |
| | Extra select breeding | 7.00 | | |
| Banats | Tested | 2.00 | 11.00 | 20.00 |
| | Select tested | 2.50 | 14.50 | 25.00 |
| | Select tested breeding | 5.00 | | |

Safe delivery and genuineness of breed guaranteed. Write orders distinctly, especially the address, and indicate by letter the queen ordered.

I. Ivanhoff, Georgieuvsk, Province Terskaya, Russia (Caucasia).

**Westwood Red-clover Queens**

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

**PHARR'S GOLDENS**

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, $1; tested, $1.25. Address New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.

**W. H. Laws says,** If there is a queen-breeder who can boast of better stock let him trot out the proof. Testimonials enough to fill this book. Will give you only one. Mr. J. C. King, Washington, D. C., writes, "For two years I have had one of your queens in my apiary. Each season she has given me over 200 lbs. comb honey; last season she actually stored while other colonies starved. I have over twenty strains in my three apiaries, but yours is the best."

Now is the time to get a fine breeding queen; stock up this fall and double your crop of honey the coming season. Single queen, $1.00; 6 for $5.00. Extra select breeders, $5.00. Safe arrival and satisfaction guaranteed.

**W H LAWS, Beeville, Bee Co., Texas.**

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Twenty-five Years' Practice.

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Second Nat'l Bank Bldg., Washington, D. C.

Patent practice in Patent Office and Courts. Patent Counsel of The A. I. Root Co.

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLDG. CLEVELAND, OHIO.**

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## WEED'S NEW-PROCESS COMB FOUNDATION.

# PRIZES GIVEN AWAY

ABSOLUTELY FREE IN A CONTEST.

**FIRST PRIZE—25 lbs. Comb Fdn.** **THIRD PRIZE—5 lbs. Comb Fdn.**
**SECOND " —10 lbs. Comb Fdn.** **FOURTH " —5 lbs. Comb Fdn.**
**FIFTH PRIZE—5 lbs. Comb Fdn.**

THE ABOVE PRIZES will be given absolutely free to those who will make the largest number of words out of the letters found in the name "Toepperwein." The letters may be used over as many times as desired, but in no single word oftener than found in the name "Toepperwein." Only words found in Webster's dictionary are admitted. The words must all be plainly written in columns, and numbered.

This contest is absolutely free to any one and anywhere. It is a fair contest, and one has the same chance as the other. These contests are very instructive, and just the thing for schoolchildren to pass the evenings. The contest will close May 1, 1908, and all lists with words must then be in, and in May 15th GLEANINGS the results will be published, giving the names of the winners and all the words of the one who wins the first prize. The winners have the privilege of choosing any grade of foundation. We feel confident that the winners will be highly pleased with the prizes, as the comb foundation is as fine and perfect as any machinery can make, and is made right here in our factory out of this clear Southern beeswax.

Now do not lay this aside and put it off until some other time, but begin right now and start the list. Write the words in a little memorandum-book and carry it in your pocket; and every time you think of another word mark it down. There are a great many words to be made out of the name "Toepperwein," and you have just as good a chance as any one else; so do not let any time go by, thinking some one else may have more words. Now, understand you are welcome to enter this contest, no matter whether you own bees or not, nor whether you are old or young, nor where you live. In case any of the winners have even numbers, then the amounts will be equally divided between such winners.

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We always carry a large and complete stock of The A. I. Root Co.'s make of bee-supplies at Root's factory prices. Write us for illustrated catalog and price list.

## HONEY AND BEESWAX.

We buy honey and beeswax at all times. If you have any to offer, write us stating quantity you have, quality, and your best price delivered at San Antonio. We also work beeswax into comb foundation by the pound at reasonable rates. We should like to have some business from associations in other States who have large quantities to work up. Our capacity is 500 lbs. per day.

We have just received a set of new machinery, and our *Weed New Process Foundation* is perfect and gives perfect satisfaction everywhere.

Whenever you are in San Antonio make our office your headquarters and let us show you through our plant. Stay here a while and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

## UDO & MAX TOEPPERWEIN,

**1322 South Flores St.** **SAN ANTONIO, TEXAS.**

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# "Bee Mindful"

*By the Bee Crank.*

The bee is never caught napping when spring opens. It goes to sleep in the fall, dreaming of busy days among the first flowers.

When the bee is so mindful of the "Get Busy" maxim, what a comment on man who forgets the "Never Put Off" doctrine until he stares "to-morrow" in the face.

This timely hint from Nature ought to stick and bear fruit. It ought to send you, Mr. Bee-keeper, out among your hives, taking notes of what you will need this season. These needs should be placed on paper and sent at once to Pouder, the friend of the "rush-order" man.

Quick delivery is one of my hobbies—my favorite one. I am located in the center of population of the United States—at the hub of the wheel, with a railroad following every spoke. That, and my policy of always carrying a full line of bee-keepers' supplies ready for immediate shipment, explains my everlasting sticking to my quick-delivery hobby.

ROOT'S GOODS at ROOT'S PRICES, Danzenbaker hives, section-boxes, metal-spaced frames, bee-smokers, bee-veils, and so forth.

I pay highest market price for beeswax, and a postal brings my new catalog.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Company, Medina, Ohio

E. R. ROOT, EDITOR — A. L. BOYDEN, ADVERTISING MGR.
H. H. ROOT, ASST. ED. — J. T. CALVERT, BUSINESS MGR.
A. I. ROOT, EDITOR OF HOME DEPARTMENT

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## STRAY STRAWS

by Dr. C. C. MILLER

HAS NOT a frame-spacer (No. 8) got mixed up with rabbet-spacers in A B C and the X Y Z of Bee Culture, p. 208, edition 1908?—a good frame-spacer too.

MOST HUMBLE apologies, Mr. Editor, for misunderstanding what you said, and heartiest thanks for the taboo, p. 200, upon the word "section" when referring to a shallow brood-chamber.

BIENEN-VATER, p. 21, says American bee culture takes the lead because of the frames in use here, the three most important being the Langstroth, the Dadant, and the Danzenbaker. It prefers the Danzenbaker.

HONEY from combs not yet bred in can generally be distinguished easily by the taste from that extracted from dark brood-combs, says F. Greiner, *Bienen-Vater*, p. 15. [We should be glad to hear from our subscribers on this subject.—ED.]

REV. A. STRAEULI says, *Deutsche Ill. Bztg.*, 7, that Mr. Cowan, who has given Italians high praise in the "Bee-keeper's Guide Book," has written him that he endorses the Swiss Kramer in believing that, with right cultivation, blacks excel Italians in that climate. Rev. Straeuli also says, apparently on the authority of C. P. Dadant, that "there are also in America very good black colonies."

"FORMIC ACID (the acid of bee poison)," p. 202. But—but, don't later authorities tell us that the poison is something else than formic acid, or is there formic acid along with the poison? [You are correct. Later authorities are raising the question whether the poison of the bee-sting is formic acid. It seems to us this ought to be easily settled by the chemists. If one sting will not be enough for a test, a hundred or a thousand can be secured.—ED.]

V. WUEST, *Deutsche Ill. Bztg.*, p. 8, thinks there is no proof that the nectar of poisonous plants is harmful to bees. He imprisoned a queen and twenty workers, and for three days fed them exclusively on nectar that he took from "crown imperial," well known to be very poisonous, but no harm followed. Like experiments with tobacco and "herbstzeitlose" showed their nectar also harmless to the bees.

ONE SECRET of the success of W. L. Cooper's bee-cellar, p. 214, is the abundance of good air with those four ventilators. A. I. Root is just right as to the importance of fresh air, and lots of it, for man or bee. [We are glad you called attention to this question of ventilation. In looking back over the article we find that Mr. Cooper makes use of a good deal of ventilation, and therein he is very wise.—ED.]

WONDERFUL times, these. After weeks of the most bitter contest in which there was the remarkable spectacle of the Speaker of the U. S. House of Representatives coming in person to help the political bosses to defeat the will of the people plainly expressed by their ballot, the people have finally triumphed, and Illinois has a primary law sending the bosses to the rear, and leaving to the people to say who their candidates shall be.

I AM SURPRISED at the difference between Allen Latham's experience, p. 212, and mine as to feeding thick syrup late. He found 5 to 3 about the right proportion, 5 to 2½ (2 to 1) being too thick for the bees to take well. Years ago I fed much syrup late, and always as thick as 5 to 2, and there was no trouble about the bees taking it. I wonder if there was a difference as to time, or was it the acid I used, or what? [Years ago we fed a 2-to-1 sugar syrup to our bees without any difficulty. The thicker the syrup can be, and yet have the bees take it, the less strain there will be on the bees in evaporating down to the requirements of the hive; for we are beginning to believe that a thick syr-

up, notwithstanding our late expressed opinion, may be better than a thin one which the bees are required at some expense to their vitality to reduce down to the body of ordinary honey.—Ed.]

When robbing occurs, the orthodox teaching is to lessen the entrance, that the colony may the better protect itself. That heretic, Allen Latham, says in *American Bee-keeper*, 35, that he stopped robbing by making the entrance larger! He explains it by saying that the odor of the honey is less concentrated with the larger entrance, attracting the robbers less. Now comes very excellent authority to his support in that last paragraph, Gleanings, 227. [While it may be wise in some cases to widen the entrances of strong colonies we are sure that, in the case of nuclei, it would be folly after the honey-flow to use any thing but a small opening, the smaller the better. We have tried this thing too many times with nuclei to venture risking them again.—Ed.]

"To heat a can of honey on an ordinary stove-mat . . . . would be attended with a great deal of risk," p. 233. Well, then, take two or three mats. [Three mats might be better; but is there not a possibility that the fire might be so hot that the honey would be injured over the three mats? It is much easier to regulate the temperature of the water heating the honey than that of the mat. As we all know, this question of liquefying candied honey involves the danger of getting the temperature too high while the process is going on. If the honey be melted on the mat, or two or three mats, how can one determine whether or not the honey is overheated? If, on the other hand, it be liquefied in a vat of water, the temperature of which does not go above 130, then you can be sure that the honey has not been heated above that point. But there is another objection: Honey when heated over a mat necessarily has the heat concentrated over a comparatively small area, while the same honey in a vessel immersed in water nearly up to its top has the heat scattered over a far larger area. In a given time, 125° Fahr., when the vessel is in water, would probably do the same work as 140° F. concentrated all in one spot, with the advantage that the 125° would preserve much better the delicate aroma of the honey.—Ed.]

A space of ¼ inch between bottom-bars is objectionable in sectional hives because one can not "look up between the combs when the brood-chamber is lifted up." I see; but what good reason is there for having more than ¼-inch space between bottom-bars between Langstroth frames? [If wider spaces between the top-bars are a decided advantage in the case of a shallow brood-chamber, there ought to be some advantage in a full-depth chamber, though to a less extent. Only yesterday, Feb. 14, we were inspecting an apiary where the bees wintered outdoors. The owner, in order to give me an idea of what was going on, tilted one hive off the bottom in order that we might look under. The bottom-bars of this hive were ⅜ inch wide, leaving a space of ⅝ inch between the bars One could easily see quite a distance up between the combs Now, suppose between the bars there had been a space of only ¼ inch; think you we could have obtained as satisfactory knowledge of the condition of the colony?

Some years ago when this question came up we called for a show of hands from our subscribers. The general verdict favored a bottom-bar ¾ inch wide, for the very reason here given. A bottom-bar ⅝ inch square was considered better still in one respect in that it favored the building of comb clear up to the bar; but too many times the combs were built beyond and therefore ¾ inch was regarded as the golden mean.

It follows then that bees are more inclined to build comb down to a bar ¾ inch than to one 1⅛ inches wide. But you say that is of no consequence with you because you use full sheets of foundation running clear to the bottom-bar, stayed with wooden splints; but the majority of bee-keepers do not use such full sheets.

Unless we are very much mistaken, doctor, you are in a very small minority in using and recommending a bottom-bar as wide as the end-bar, which, as we remember, is 1⅛. At all events, if you use 1⅝-inch spacing from center to center, this would make the bottom-bars as well as end-bars 1⅛ with a spacing of ¼ inch between.—Ed.]

One man said at the National convention that he put his bottles of honey in a water bath warm enough so he could stand having his hand in it—about 140 degrees. Another man said that would take the skin off. I thought I would find out. Took a dish of water at 134 degrees, held my hand in it for 5 seconds; at 133 I held it 10 seconds; at 130, 15 seconds; at 125 I could let it remain permanently. Then I raised it to 140 degrees and held my hand in it 5 seconds; but it was pretty hot. All hands, however, are not alike. [Why didn't you hold your hand in water heated to a temperature of 140 longer than five seconds? That is not *holding* your hand, but *dipping* it in water and taking it out almost immediately. We still insist that the average person—no, we will say the average *man*—can not hold his hand in water heated to 140 Fahrenheit, without having the skin come off. There is a great difference, however, in persons. For instance, Mrs. Root will hold her hand in water quite a number of degrees hotter than your humble servant. How do we know? When suffering from a severe headache she will wring a cloth bandage out of water so hot (and do it with apparent comfort) that would remove the skin from her husband's hand. The same temperature will not affect her hands in the least.

Some years ago, when we were heating water with a steam-pipe to scald out infected hives, we found we could not get it much above 180, and consequently we gave up that method of heating water to scald out the hives; but during these experiments we

carefully tested the hands in water at various temperatures, because we had heard bee-keepers say so many times that honey must not be liquefied in water hotter than may be born by the bare hand. A temperature of 140 was too much for us, and, like you, we could not bear the hand for any length of time in water hotter than 125 degrees; but we suspect that your wife might be able to stand it considerably hotter. As a general thing we think it much safer and better to refer to actual degrees measured by a thermometer, for then there will be no danger of injuring the flavor of the honey. A temperature of 140 degrees, if prolonged, affects slightly the bouquet, hence 130 or even 125 would be still better.—ED.]

I'VE LIVED to see the time when a President of the United States dared to say a word against the saloon in his message. I give it at second hand. A newspaper man was interviewing Rev. A. C. Dixon, pastor of Moody's Church, Chicago:

The minister reached for a newspaper containing President Roosevelt's message in full. He glanced through the long columns and finally came to something that held him.

"Ah, here it is," he announced. "I do not suppose one man in 10,000 knows that the President says something in derogation of the saloon in his message, but he does. Let me read: 'Just as the blackmailer and bribe-giver stand on the same evil eminence of infamy, so the man who makes an enormous fortune by corrupting legislatures and municipalities and fleecing his stockholders and the public, stands on the same moral level with the creature who fattens on the blood money of the gambling-house and the saloon.' There it is, right there—'gambling-house and saloon,' and I am mighty well pleased to see the President of the United States placing the saloon in the right place and condemning it as he has. I do not know that other Presidents have had the courage to mention the saloon, but Roosevelt did, and he is entitled to the thanks of the law-loving people of the land."

IN GERMANY an advertisement appeared offering for 25 cents to send a recipe for making 2 lbs. finest honey from 1 qt. of buttermilk. Remittance of 25 cents brought the instruction to add 1 lb. of sugar and boil slowly two hours, stirring constantly, in a brass, copper, or enameled kettle; but the enameled kettle must not be cracked inside. Pretty good for a German; but a Yankee fakir would follow it up with an advertisement offering for 50 cents to sell a recipe to produce for less money a better honey than the buttermilk thing. The recipe would read, "Go to a grocery and buy it." "That wouldn't cost less?" Figure up and see.

| | |
|---|---|
| 1 qt. buttermilk | 1 cent |
| 1 pound sugar | 5 " |
| 2 hours stirring at $1.50 a day | 30 " |
| Cost of 2 lbs. buttermilk honey | 36 " |

[These so-called artificial honeys, unless glucose be made the main constituent, cost considerably more than genuine honey. But glucose can not now be used except as an adulterant, the mixer to consume it in his own family. Or if sold for general consumption it must be used as a mixture of honey and glucose, stating the mixture of each.—ED.]

MR. E. E. COVEYOU, in the last *Review*, shows a practical scheme for filling square honey-cans automatically, and shutting off the honey-gate just the moment the honey reaches a certain level in the can. We hope to illustrate it later.

THE editor of the *Review* is somewhat skeptical as to the success of the plural-queen system, saying he can not see any thing to balance the labor and cost. He admits that the scheme may be possible but not profitable. This is an open question, and we will allow the discussion to continue for a time longer.

### LABELING THE WEIGHT.

SWIFT & CO., the meat-packers, have begun a suit to test the legality of the Nebraska pure-food law which compels them to label the weight on ham and bacon pieces. Comb honey in sections would seem to come under the same category—at least, if a ham has to be labeled, a section of comb honey ought also to be. W. K. M.

### OUR SPECIAL SPRING-MANAGEMENT NUMBER.

ONE of our late advertisements states that our symposium of articles on spring management will appear in our issue for March 1. We did not discover the error until it was too late. The series will appear in our March 15th number, and it will be well worth reading, as the articles comprise many valuable hints and suggestions from our veterans in the field.

### A WORD TO OUR SUBSCRIBERS—ESPECIALLY THOSE WHOSE SUBSCRIPTIONS MAY HAVE EXPIRED.

THE editor has been going over our list of subscribers, and has been very much gratified to see that it is well paid up. The number of delinquents—that is to say, those who have not paid up arrearages or back subscriptions—is very small. We were surprised, also, to notice how large a number have paid in advance—some clear up to and including 1915. One man in particular paid for twenty years ahead. So many of the number having paid in advance leads us to believe that our journal is appreciated. We have no doubt that those who are behind like it just as well, but perhaps have neglected to send in their back dues.

It is not nor has it been our policy to continue sending our journal after the time paid for to any particular person unless we consider him responsible, and believe that he desires its continuance. The few delinquents

that we have we consider to be people who will renew again, paying cash for all back subscriptions, and a substantial advance. But according to a recent ruling of the Post-office Department we shall be no longer permitted to send GLEANINGS after the time paid for, except under certain conditions. The Department appears to have no desire to handicap publishers who are sending out a legitimate publication to *bona-fide* subscribers; but it is, in a very substantial way, recording its stamp of disapproval against sending any publication, especially one of the cheap class designed for advertising purposes, to people who may not care for it. Or, to put it another way, Uncle Sam says no publisher shall try to force a paper on to some one who has not ordered it, and then try to collect payment by coercion — and he is right.

*As we do not wish any subscriber to lose a single copy of the journal, we respectfully request all delinquents who know they are behind in their subscription to send in their remittance at once.*

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### HOW THE PURE-FOOD LAW WORKS.

The following excerpt from the *Detroit Free Press* will explain as well as any thing can just how the pure-food laws help the honey-producer:

LOOK FOR "NEAR HONEY;" MANY BARRELS OF SPURIOUS PRODUCT CONFISCATED BY FEDERAL OFFICERS.

Acting upon instructions from Washington, Deputy United States Marshals Cassius P. Taylor and Duncan Lyons started out yesterday afternoon to seize large quantities of "near honey," which is said to have been passing for genuine strained honey with many wholesale users of the article in Detroit and other cities throughout the country.

The manufacturers of the alleged spurious article are said to be Rogers & Holloway, of Philadelphia, and it is in a crusade against the manufacture of what is said to be a mixture of cane and honey that the seizures are being made in many places.

Eight barrels of the stuff were found in one factory, where it has been used in composition with other articles; six barrels in possession of a commission merchant; nine barrels at another manufacturing plant, and 200 cases of fifty pounds each at still another factory.

This composition, if sold to the public, is in violation of the federal pure-food law. The quantities confiscated in this city will be held pending the outcome of the case against the manufacturers. W. K. M.

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### CORN SYRUP VERSUS GLUCOSE.

APPARENTLY the glucose people have won out in their contention—that is, the privilege of calling glucose "corn syrup." When Dr. Wiley and his associates rendered an adverse decision, the glucose interests bombarded the Board of Food and Drug Inspection, Secretary Wilson and President Roosevelt, asking for a reversal of the ruling. A decision has finally been rendered, favoring the glucose interests, all the members of the Board of Food and Drug Inspection agreeing, including Secretary Wilson, Cortelyou, and President Roosevelt, Dr. Wiley alone dissenting. We are surprised at this, because if the anti-glucose interests had put in a strong protest the result would have been different.

We suppose this means that the glucose interests may continue to label their product "corn syrup," which name has not obtained such an unsavory reputation as glucose. The bee-keepers of the country made a vigorous protest, but, apparently, without effect. After all, it will be only a question of time when it will be discovered that "corn syrup" is no more palatable than the same thing under the old name—*glucose.*

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### THE DEATH OF TWO VETERAN BEE-KEEPERS.

IN our last issue, in the department of Special Notices we announced the death of the veteran Henry Alley, practically the last representative of the early days of modern bee-keeping in the United States. We regret to record also the death of the veteran E. France, father of N. E. France, General Manager of the National Bee-keepers' Association. He was 84 years of age at the time of his death, the same taking place on Feb. 7, at 9 A.M. He was quite a prominent writer for GLEANINGS in the early 80's. We hope to be able to give an extended sketch of both, perhaps in our next issue.

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### LIQUEFYING CANDIED COMB HONEY WITHOUT MELTING THE COMBS.

WE are experimenting on a method which we hope will enable us to liquefy honey candied in sections *without at the same time melting the combs.*

The plan involves nothing more nor less than keeping the sections of candied honey at a temperature of 100 or 102 degrees for a week at a time. A four-days' test of sections placed in a large incubator set at a temperature of 102 shows that the honey is rapidly liquefying without destroying the combs. We hope that, in a few more days, the honey will be perfectly liquid and the combs intact. Of course, where the cappings are cracked there will be nothing in particular gained in bringing the honey back to a liquid condition.

The principle can be carried out on a large scale by constructing a room and having the same heated by means of a steam coil or coils, or a furnace. The temperature of the room must be *uniform in every portion,* and uniform throughout the day, and it must not go above 102 degrees.

Do not jump to the conclusion that this is going to prove to be an unqualified success. We don't know. Just wait until the next issue and we will tell you how it works. If a success it will save hundreds—yes, thousands—of dollars on comb honey made unsalable by reason of candying.

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### STRAWBERRIES PRESERVED IN HONEY ONLY.

WE have just been eating some strawberries preserved in nothing but honey, put up by Mrs. Frank McGlade, Hebron, Ohio. The jar from which we took the fruit was labeled 1906; yet on this 11th day of February, 1908, there was not a particle of mold on top. We are of the opinion that the berries would have kept several years longer.

Mrs. Root remarked that these strawberries, unlike those preserved in sugar syrup, had almost their natural color. This is all the more remarkable because the jar has been standing on the desk of the editor, in the full glare of three windows through which the sun often streams in. The temperature of the office seldom goes below 70°, and yet this fruit has stood thus for nearly two years. Had it been put in a cool dark cellar the natural color would have been still more pronounced, no doubt.

It will be remembered that Mr. Frank McGlade wrote an article on preserving fruit in honey. Referring to these particular strawberries, and how they were put up, he said:

Our own experience here in our home has been very satisfactory in the use of honey in canning and for making pr serves. Of course, we do nothing in a commercial way, but every year Mrs. McGlade puts up whatever fruit she desires, in honey—strawberries, currants, peaches (canned and preserved), and jellies. Strawberries preserved in honey are about as fine eating as I ever expect to get in this present life. As to the keeping qualities, we have them of various ages—two and three years old, and none spoil. The fruit is handled the same as when sugar is used. We have put the honey over the fruit and let it stand all night before cooking; again, after the fruit is cooked the honey has been put in. Either way proved entirely satisfactory. We use about the same amount of honey as of sugar. If you can make preserves, jellies and jams with sugar you can with honey. There certainly is an excellent field here for an enterprise in a commercial way which can not help yielding large returns. The people are willing to buy that of which they have the assurance of purity.

For further particulars the reader is referred to page 1176, Sept. 15, 1906.

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### SOME OF THE SILLY ARGUMENTS AGAINST PARCELS POST.

ALL sorts of criticisms have been and are being hurled at the parcels-post proposals. The latest is that it pays only in countries having a small area. For example, the *Irrigation Age*, which is an excellent paper, compares the British Islands with Ohio, Indiana, and Illinois, which latter are 12,000 square miles larger than the Britannic Islands of His Majesty King Edward.

These critics forget that the British parcels post extends over an area three times as large as the United States. It embraces Canada, West Indies, Australia, India, South Africa, Central Africa, and various other colonies, so that this criticism has no foundation on which to rest.

In the instance of France, the case is not much different. The word "France" includes Algeria, an immense country, the French West Indies, and Indo-China, an area of land as large at least as the United States. But we can go nearer home, for Uncle Sam has a parcels-post service with many countries. We have every reason to believe this service is done in first-class style and at much lower rates than any express company would do it; and a curious fact in this connection is that the foreign rates for parcels post are lower than the domestic. To make this clear we will instance an hypothetical case. If The A. I. Root Company wants to send 4 lbs. of foundation to a customer in Ohio the charge is 64 cents; but if the customer lives in Central America, or some other far-away country, the charge would not exceed 48 cents.

We understand that Senator Platt, who "owns" two express companies, has already boasted that there would be no parcels-post legislation at this session of Congress. The National Grange is behind this movement, and it is bound to win. It would go through a good deal sooner, however, if the farmers would give their Congressman to understand that they fully expect him to do all in his power to help this reform in our postal laws, for it is only a reform, nothing more. We have parcels post already, and have had it for years; but the rate is too high for it to be a success. It was purposely made so to suit the express companies; but the necessity for protecting their business has long since ceased to exist.

#### THE COST OF PARCELS POST.

One of the stock arguments against the parcels post is its cost, and quite a number are being misled into the belief that it will result in a great postal deficit. Now, what are the facts? Great Britain, with an immense business at very low rates, has an annual postal *surplus* now of not less than $20,000,000, and in one instance we believe it was $35,000,000. Germany also has a very liberal parcels-post arrangement, and her annual *surplus* over all expenses is nearly $15,000,000. France usually has a postal *surplus* of something like $10,000,000, though she too has liberal parcels-post facilities.

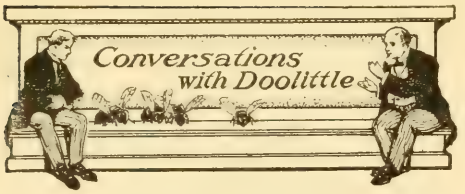
It is the United States which has always a postal deficit which Uncle Sam's treasury has to make good. Parcels post would, to a very great extent, stop this deficiency, and put the postoffice on a paying basis. Many small postoffices would begin to pay or hold their own if we had a true parcels-post system such as a great nation ought to have.

In any event, bee-keepers have a use for a parcels post; so have the egg-raisers; and even the butter-makers can despatch their goods by parcels post to customers. We are going to have it.

#### PARCELS POST IN THE SENATE.

Senator Burnham, of New Hampshire, on Feb. 10 introduced a bill in the national Senate authorizing a parcels post on rural routes. The bill has the endorsement of President Roosevelt and Postmaster-General Meyer. It provides for a rate of 5 cents for the first pound, and 2 cents for each additional pound. The limit is 11 lbs. On the Same date Senator Kean, of New Jersey, introduced a bill providing for the lowering of the present parcels-post rate from 16 to 12 cents, and increasing the maximum weight from 4 to 11 lbs. It seems to us the rate of 12 cents is oppressive, and might with great propriety be reduced to 8 cents per lb., and probably a flat rate of 5 cents would pay the best of all.

W. K. M.




STUDYING THE MARKET.

I want you to tell us in GLEANINGS something about marketing honey. If I succeed in increasing my bees, as I hope to do, what am I going to do with my honey? Because you old 'vets' know how to do these things, don't soar so high that the beginners are lost from sight. E. M. BROWN.

Well, perhaps we old writers do lose sight of the beginners to a certain extent in our writings; but I had always considered that GLEANINGS gave a fair share of its space to those who were in the A B C of apiculture. I know that, when referring to the management of the apiary for a crop of honey, the common advice is to study one's field, as well as the bees, so that the field and the bees may be brought together in such a way that the best results can be secured. But I am confident that we should just as thoroughly know our field for marketing, so that our honey and the field may be brought together as effectually for the best results as are the bees and the field.

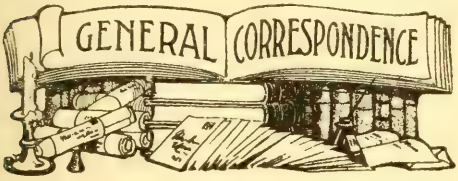
Producing a crop, without the least idea of what is going to be done with it when produced, is a fault not confined to the bee-keeper alone. The agricultural masses are as often afflicted in this way as are the apiculturists. I should like every reader of GLEANINGS to consider this matter fully, if he has not done so already, for on our ability to market our honey crop successfully turns much of our happiness and success in our apicultural life, to say nothing of the contents of our purse or bank account. Study this matter thoroughly; turn it over and over again, if need be, till this matter of marketing strikes down as deep into your very being as has any thing which has been the most interesting to you about the bees, for on it hangs one of the greatest secrets of successful apiculture. Oh the folly of working from early morn till late at night, day in and day out, only to throw the larger part of it away because the whole mind is bent on a big crop, instead of how much we can secure from the crop after it is obtained! Such a course is only on a par with several of the farmers I used to know when a boy, who would go into the woods in late fall and early winter and pick up all of the fallen wood about their woods, cut it into stove length, and carefully pile it, so as to *save all that was going to waste*, and then leave those piles of wood, many of them, to rot down, rarely using it afterward. I used to ask myself the question, "Would it not have been better to allow the wood to rot without such great expenditure of human energy rotting with it?" Then many would make butter at a great expense of feed, milking cows, skimming milk, making the cream into butter, and carefully packing the same into tubs and firkins, only to have it stand in some poor cellar or other place, before selling it, till it was nearly spoiled, when the whole had to be sold for a song. Of course, under our present-day state of affairs, with the timber nearly all cut off, and our butter being made almost wholly in creameries, this lack of ability in the farmer has been largely overcome, but scores and scores of our bee-keepers keep right on dumping their honey on the town and city markets for "what it will fetch," with no thought regarding a better market or the great injury they are doing others through their paying no attention to this part of the bee business. Far better, produce only half as much, with only half the cost in expense and labor, while being alert in the selling of the same, thus securing equal results without the wear and tear of producing a big crop.

All of our bee-keeping work should be done with an "eye single" to the turning of the finished product to the best possible advantage to us and ours—not that I ever wanted to receive more for my product than would be honest between man and man, but I do think that we should do all that is possible to keep the price up to a parallel to what we have to buy. An even exchange is said to be no robbery. In those early days of my bee-keeping, butter and honey went hand in hand, and I thought that I was in no way robbing my brother-farmer when I let him have as many pounds of my fancy white-clover and basswood honey as I took of his gilt-edged butter in exchange. But under this present age of "creamery extras" he takes more than *two* pounds of my fancy section honey for one of his butter, because he has a chance to do this on account of our having passed from the days of barter to the dollar system. However, if we turn our eyes to sugar, which, on the "sweet-for-sweet" idea, may be a nearer parallel, we find that our honey has a greater purchasing power than it had forty to sixty years ago. With honey at 25 cents and sugar 12½, we got two pounds of the latter for one of the former; but now, with sugar at 5 cents and section honey at 15, we get three pounds of sugar for one of honey. I have used only these two items to give us something of an idea of what our knowledge should be based upon in calculating the market price where our honey is disposed of in our home market.

Before our crop is produced we should be calculating what we are going to do with it. We want to have some idea of whether we can sell it at home, or whether we shall have to send a part or all of it to a distant city. We want to consider the ability of our neighbors to buy. The most of us are not fortunate enough to have wealthy customers who can buy our honey at any price. Most of our neighbors are, like ourselves, buying the necessaries as cheaply as possible, and doing without the luxuries. If wheat and potatoes are cheap, and wages low, those about us who would buy honey will buy sugar if we

do not give them some inducement. Then it is best not to forget that hard times are harder on a large per cent of the city people than on the producer, and hardest of all on wage laborers.

Now, having, to a small extent, studied the situation, let us try to do what is *right* as well as what we can. If the distant cities will not pay us good prices it is better to decide that the poor at home have as good a right to "cheap eating" as those with large capital. The poor man's dollar should buy just as many pounds of honey as the rich man's, and the poor man can have a chance if you tell him in your local paper or by a sign at your gate that your honey can be had at the low price of the city markets, less the cost of freight and commission. Don't try to add these on him; for if you shipped the honey, *you* would have these to pay. I find one of the troubles about marketing our honey at home, right among our own friends and neighbors, is that, like many of our farmers, we will not sell it unless we can get as much for it at our door as it will bring in the distant city market. Let us be reasonable and honest in all our marketing projects, whether others are or not.




## YELLOW VS. LEATHER COLORED ITALIANS.

### A Few Words in Favor of Yellow Italians; Keeping the Brood-nest Clear of Honey to Make Room for Brood.

BY E. W. ALEXANDER.

For some time many honey-producers have shown a preference for the darker or leather-colored Italians. This would be all right if it were not that they have a tendency to degenerate back to hybrids and blacks when continued a few years. It is the same with bees as with all our domestic stock. We must have a standard to work for, and the color line seems to be very essential in our horses, cattle, swine, and poultry. Now, if we fail to keep up to well-marked Italian bees as a standard, then unprincipled queen-breeders can send us their hybrid mismated queens; and we, not having any fixed standard as to color, will have no chance to complain, as they can say they sent us queens of their dark Italian strain.

I for one have my doubts if any of the dark strains of Italians are superior to our three and four banded bees—that is, taking them as a whole in large apiaries there are occasionally some exceptions in each class; but one thing we must all admit; and that is, Italian bees are far ahead of our blacks or hybrids in gathering honey; but in order to acquire the best possible results we must give them in some respects especial attention. Their never satisfied desire to gather honey causes them to fill the brood-nest early in the season; but if this honey is frequently removed so as to give the queen a chance to fill and keep filled all the combs below the supers with maturing brood, then you will soon have a large working force, and you are then quite sure to get a nice surplus; but if you neglect to keep this honey out of the brood-nest, then you will have a weak colony and little or no surplus, which will cause you to become prejudiced against all yellow bees.

Next season make it your especial business to see every comb in all your colonies before you put on your supers. See that each one is full of brood from top to bottom and end to end; remember that each square inch of capped honey in those breeding-combs costs you about 30 worker bees every 21 days.

The convenience and time saved in looking up twenty or more queens a day, as we frequently do during the summer season, is quite an item in favor of yellow bees. Some think these bees do not winter as well as the darker ones. I find that, where this is the case, it is caused by the Italian bees crowding the brood-nest with honey in August so as to stop all chance for breeding after Sept. 1; consequently they go into winter quarters rather weak in bees; and those they do have are mostly old and nearly used up. If you will remove two of the heaviest combs about Sept. 1, and put in the center of the hive two good empty breeding-combs the queen will fill them with brood, and your colony will be much stronger and better in the spring.

Still another thing in favor of our yellow bees which is of more importance than all other things combined is the fact that they are almost immune to that destructive disease known as American foul brood. Those of us living in this part of New York, who lost thousands of colonies a few years ago from the effects of that disease, know well how much we owe to those yellow Italian bees; for without them the production of honey in this part of the State would be a thing of the past. Sometimes I think the great loss we sustained was a blessing in disguise, for now we have better bee-keepers, better bees, and are securing far more surplus annually from our Italian bees than we ever procured from the black and hybrid colonies we used to keep.

When dividing or forming nuclei it is frequently quite difficult to keep the darker strains from returning to the old stand; but not so with the golden Italians. I find that, if they have some brood, or a queen of any kind, they will stay wherever we put them. This is a good point, and often saves much trouble; then they will defend their hives from robber bees the best of any I have ever had.

Give these bees the special care they require and you will be surprised at the good surplus you will receive during poor seasons.

Almost any bees will give us some surplus during a good season, but it is the well-bred bees that give a surplus every year. They will find nectar though they may have to go several miles for it.

Now, don't think we have either bees or queens for sale, as we have not. I write the above only according to our experience in keeping bees of all shades of color from the genuine black to the yellowest Italian.

I might cite many more valuable traits that are well developed in those yellow bees, such as having but little desire to swarm, and breeding up fast in the spring. This is very much in their favor, as they keep their brood so compact that comparatively few bees are required to feed and keep it warm. Then it is easily proven that they cover a much larger field in search of nectar than the darker strains. I have often found them a mile or more further from home than the other bees.

With our well-bred Italian bees we now have good stock to work from; so let us unite in trying to improve them along the lines most necessary in developing a superior all-purpose strain of bees. This can be accomplished to a great extent in a short time; then bee-keeping will become more reliable, more profitable, and a much pleasanter occupation. It has been a long hard task to free it from the rut of ignorance and superstition of past ages; but we have at last placed it well forward among the intellectual pursuits of rural life; and now let us be careful and take no step backward that will check its forward progress along with other successful agricultural pursuits.

Delanson, N. Y.

## THE STORM-DOOR FOR BEE-HIVES.

### Its Origin and Use.

BY A. J. HALTER.

On page 97 you refer to storm-doors as illustrated, patterned after suggestions of Mr. Doolittle. I would say that I used some about two years previous to Mr. Doolittle's suggestions as stated in GLEANINGS in 1906.

Last spring I purchased from Mr. J. P. Noland, the nurseryman at Peninsula, Ohio, his entire outfit of bees and hives, among which was a similar device for the Langstroth hive, made about fifteen years ago. He called my attention to its use in 1902; but as I had only a few colonies I did not consider the value of storm-doors until I realized the heavy loss of bees by having a free entrance, and I made a model as illustrated on p. 321 of our issue for March 1, 1907. For those using a reversible bottom-board placed close to the ground I would suggest cutting a notch in the lower side of the ends so the center will rest flush on the floor-board. However, if so applied be sure to leave several inches in front so as to leave an alighting-board for the benefit of bees that return in a chilled condition.

The theory of storm-doors is not new; but its value will be more appreciated when once brought into general use.

THE ALLEY TRAP NOT THE PANACEA FOR CATCHING SWARMS.

On page 19 you make reference to Mr. Taylor's system of using a queen-trap in preference to clipping queens to prevent swarms from escaping.

Good results can be obtained by limited use from a great many devices, as also entire systems; yet if applied universally, or relied upon to a great extent, evil results are often the reward. While there are flaws more or less in almost every undertaking, there are certain rules which, if carefully observed, will bring better results in accordance to requirements.

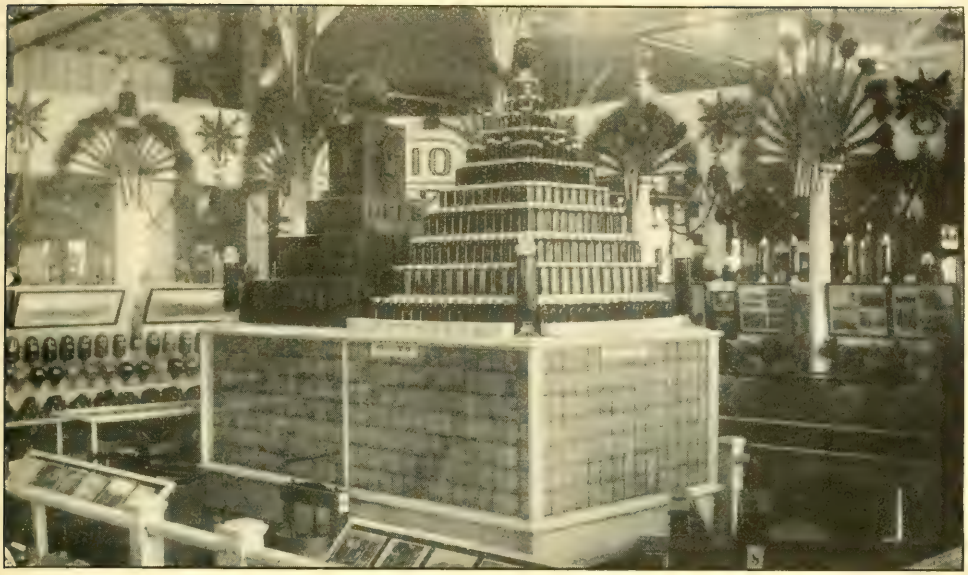
Mr. Taylor does not mention details as to queen-trap usage; and the question arises in my mind, "How can you manage a given number of yards with only one or two visits a week, simply relying on queen-traps?" Suppose all your colonies are equipped with traps. After an absence, say, of five days you come to examine the apiary, is it not necessary to overhaul every trap and let out the drones? and, if you find a laying queen, you undoubtedly feel somewhat gratified; but as you go on further there is a trap containing a virgin. Was it a case of swarming, or have you detained her from her wedding-trip? At any rate you decide to give another trial; further swarming takes place; but before you can make another visit heavy rainstorms and chilly weather intervene and you find traps full of dead drones, perhaps also some dead queens. You will begin to wonder where you are "at."

For a number of years hives with a portico have been deemed unfavorable, being conducive to swarming. Is not a queen-trap a select place for bees to cluster and dream of the happy land which they desire to acquire by swarming?

Yes, bees, when several swarms issue at the same time under the clipped-queen system, will occasionally cluster together when a virgin emerges; and in order to prevent escaping it is necessary to hive them; but this is true in almost every instance when queens are not clipped; viz., "to hive the swarm;" and how disastrous when several swarms with laying queens cluster together, and the victorious queen destroys the others, among which may be some of your choicest queens! The virgin swarms are comparatively small in proportion to laying-queen swarms under the clipped queen system if properly conducted, the age of queens being a marked feature, as also the foretelling of swarming by outside observation.

Queen-traps are very convenient when hunting a queen by shaking bees in front of the hive or catching undesirable drones or minor temporary usages. The modern apiarist, however, is more likely to adopt some system which will give ample protection in his absence, rain or shine, something that will master the situation in outyards as well as carefully guarded apiaries.

Akron, O., Jan. 24.



THE A. I. ROOT CO.'S EXHIBIT AT JAMESTOWN, VA.

## SOME HONEY-EXHIBITS.

BY E. R. ROOT.

In the views given we are showing beeswax and honey-exhibits put up during the past year by The A. I. Root Co. The one above, at the Jamestown exposition, was put up for and in the name of the State of Ohio, and was, in fact, a part of the agricultural exhibit, and by no means an inconspicuous part either. Unfortunately the light did not allow the exhibit of wax to show up properly. The other exhibits were in the name of The A. I. Root Co. at the Ohio State Fair, Columbus, last September.

Mr. Jesse A. Warren, who has charge of exhibit work, has given the question of bee, honey, and wax displays a great amount of study. He has in mind in every case not only the artistic and the attractive but the educational feature as well. In both exhibits it will be noted that he has carried out these ideas. Besides live bees in observato-

THE A. I. ROOT CO.'S EXHIBIT AT THE OHIO STATE FAIR.

THE A. I. ROOT CO.'S EXHIBIT AT THE OHIO STATE FAIR.

ry hives, he had a large collection of photographs illustrating the various phases of bee culture; and directly under was an explanatory note. Thus it is that a visitor can get a comprehensive view of the business in a very few minutes, even though there be no one present competent to explain. The Ohio bee and honey exhibit at the Jamestown exposition was one of the most interesting displays in the States building.

The queen-bees and the old-fashioned straw skep in wax were first made out of clay by a professional clay-modeler. A plaster cast is then taken, from which wax molds are turned out in any quantity. It is a difficult thing to make a queen-bee so that it will "draw" out of the mold; but we succeeded in doing it perfectly.

## HIVES ON ELEVATED STANDS.

BY W. A. PRYAL.

"Hives of high and low degree," as if there could be any such social distinction among the hive fraternity! Yet there are high hives and there are low hives; and there are hives low upon the ground and there are hives high from mother earth.

For a long time we have been impressed that it is well to have all colonies of bees near the ground; that it is easy for the bees, should they fall to the earth, to crawl back to their hive via a short alighting-board. That is well and good; I have most of my hives that way, for it is the cheapest way to have them. But I have had a few perched up a bit and I like the plan very well. The older I get the less I like to stoop over the low-down hives.

In the photo I show one of my hives—it is not my regulation hive; it was one hived in a super, and another super put above as a *super*. But it is the pedestal that I call attention to. It was a receiving berry-chest and forms the bottom-board as well as the alighting-board of the hive. I notice that a bee that has not got its "bearings" well figured out, and drops short of the entrance, will alight against the side of the pedestal, and without loss of time crawl up to its home. It is very seldom that a bee misses getting a foothold upon the pedestal alighting board. I think their chances of doing so are as good as if not better than in falling upon the low-arranged board so much in vogue.

The objection that might be made to a hive so placed is that it would be more likely to

PRYAL'S ELEVATED HIVE-STAND.

THE BRANT DISTRICT BEE-KEEPERS' CONVENTION.

be tipped over than one set closer to the ground. This is true, but when solidly set up there is little likelihood of their being thrown over. When interspersed with a few low-set hives, they make an apiary more picturesque. I have found that all hives I have up on stilts seem to do better than the colonies that are near the ground. But what a pleasure it is to go to one of these hives and stand at the rear and manipulate it without any back-racking tortures!

In connection with the photo I will here state that not only are the hives or supers shown made of our western or Oregon spruce, but also the big box forming the hive foundation. This wood is the worst on the coast to check; even when painted it is not rendered proof against this evil. The hives were painted with two coats of lead and ocher.

The plant growing at the left of the hive-stand is our well-known alfilerea or pin-weed, one of the best early honey-plants we have. It is seldom a specimen of this plant is found growing so erect as the one here shown.

Oakland, Cal.

[While it is much more convenient to handle hives elevated from the ground, yet in localities subject to chilly or freezing weather, such elevation causes a large loss of bees, for the reason that many bees coming in partly chilled drop short of the entrance. If such bees can *crawl* into the hive by an easy grade they will be saved. If, in order to get into the hive, they must take wing, this they will not do, because they are too chilled, and consequently are lost.

We are satisfied that there are heavy losses in our northern States in the spring and fall from this cause alone, and any bee-keeper in such States who fails to provide easy runways into the hives, close to the ground, is wasting many dollars. In a climate like that of California there would not be such losses, and in that case convenience should be consulted by having the hives elevated.—ED.]

## BEE-KEEPING IN CANADA.

**The Brant District Bee-keepers' Convention; a Discussion on Feeding; Fall Packing for Winter; Thick vs. Thin Syrup; Acid or No Acid.**

BY R. F. HOLTERMANN.

At the head of this page is an illustration showing some of those who attended the Brant District Bee-keepers' convention. Its standing is between a county and a Provincial or State convention, and the success of these meetings has been so marked that year by year a larger number are in attendance.

Among those present this year were Mr. L. A. Aspinwall, last year president of the National Bee-keepers' Association, and this year president of the Michigan State Association; Mr. O. L. Hershiser, Buffalo, N. Y.; F. J. Miller, president Ontario Bee-keepers' Association, who is also president of the Middlesex Bee-keepers' Association, London, Ont.; W. A. Chrysler, Chatham, Ont.; D. Anguish, Lambeth; Wm. McEvoy, Wood-

burn; R H. Smith, St. Thomas; F. A. Gemmil, London; A. Laing, Hamilton, and Mr. Tebbs, manager Boys' Home, Hespeler; Mr. Chris. Edmanson, president Brant Bee-keepers' Association, who occupied the chair during the opening session.

### WHY IT PAYS TO USE ALL-SUGAR STORES FOR WINTER.

The subject for discussion was, "Natural or Artificial Stores—which? when supplied and where placed?" Before giving briefly some of the statements made, let me say that, as a result of one or two seasons where great loss has been occasioned, in part, at least, by inferior natural stores for winter, there was an entire unanimity of opinion among the members that it was desirable to give bees sufficient *artificial* (sugar) stores to carry them through the season when, by reason of long-continued cold, they were confined to the hive.

I was taken back to my early bee-keeping days of some twenty-six years ago when a somewhat similar disaster took place followed by discussions upon the wintering problem, the pollen theory, and the advocating of sugar syrup for winter stores for bees.

Captain Hetherington once said that *he did not winter with uniform success until he fed each colony enough sugar-syrup stores to carry them through the winter.* Just here I would endorse the sentiment of the captain. If those in sections far enough north so that the bees are confined to the hive for two, three, or four months, would provide each colony with, say, 15 lbs. of sugar-syrup stores, the entire bee-keeping industry would undergo a change. It would become an industry of greater stability. But what is one man's poison is another's meat. A word to the wise is sufficient.

### WHY FEED IN THE FALL.

Mr. F. T. Adams, Brantford, opened the discussion by stating that he remembered well the time when he thought it an extravagance to spend money on feeding colonies sugar syrup in the fall. He depended on spring feeding; and if the weather was not suitable in the spring the bees were not fed, and under such conditions they often perished. He now advocates feeding heavily in the fall so the bees will have plenty of stores until sufficient honey comes in the following spring. He considers *early* spring feeding bad because it breaks the cluster in the hive, excites the bees; and often the brood, which the bees begin to rear, is abandoned before maturity, and destroyed. He likes to feed as early in the autumn as possible, before cold nights interfere; with him this is about Aug. 25. Then the stores are well ripened and capped. If his bees had a fall flow he might feed later. He contracts generally from ten combs to seven; and if any colonies have too much brood to feed properly he takes a portion out and gives it to weaker colonies.

He uses, by measure, two parts of granulated sugar to one part of water, first bringing the water to a boil, then gradually stirring in the sugar, bringing the mixture to a boil.

Members in convention now resolved themselves into a series of hostile camps, being hot and cold "processers," thick and thin syrup-makers, and advocates and non-advocates of tartaric acid. W. A. Chrysler, F. J. Miller, and A. Laing, all good men, advocated the cold process; H. G. Sibbald, J. H. Shaver, D. Anguish, Jas. Armstrong, and L. A. Aspinwall were advocates of the warm process. Mr. Sibbald even declared that he had lost heavily in winter by feeding syrup mixed by the cold process, and twitted some of the opposition upon the losses they had in wintering, which might be obviated by adopting the hot process. Statements in some cases were somewhat modified by saying that, if the syrup were fed early, the cold process might make less difference.

As to the thickness of the syrup, the proportion advocated ran all the way from half and half by measure to three parts of sugar to one of water (Mr. Anguish advocating the latter), The argument in favor of thin syrup was that it was less trouble to make by the cold process, and that the bees would take it up more readily. Those opposed did not see the use of giving the bees so much water; the evaporation of the moisture kept the bees excited; heat had to be generated, which wore out the bees and wasted sugar syrup. Mr. Sibbald stated that, in late feeding, stimulation to brood-rearing should be avoided and the syrup fed rapidly. This causes the bees to store the syrup before the queen gets ready to lay, and the bees quiet down again almost at once.

Mr. Aspinwall thought syrup should have tartaric acid in it. It not only prevents the crystallization, but inverts the cane sugar. This is a process which, owing to rapid storing, is done imperfectly by the bees. Owing to obstacles, he fed his bees in December last, and could have fed them all winter. He uses a top feeder placed directly over the cluster. He then gives the bees a little smoke and raps the hive when the bees arouse sufficiently to find the warm syrup.

Mr. F. A. Gemmell advocated tartaric acid because it never does any harm, and is sometimes beneficial. Mr. Aspinwall stated that there is a gland in the mandibles of the bee, which secretes a fluid, very rank and strong-smelling. This is formic acid, and, under normal honey-gathering, largely inverts the nectar.

Upon the advisability of contracting the brood-chamber for winter there was a fair amount of unanimity. The desirability for bees to cover, as nearly as possible, their stores was admitted by all. It was, however, pointed out that, in case of danger of foul brood, the contraction resulted in a wholesale mixing of the combs, which might result in spreading the disease.

It was advised to feed in the fall as soon as the queen had stopped laying when the brood space in the hive would be contracted so the bees could store the syrup in these emptied cells, and cluster over the stores during win-

ter. Mr. Sibbald made a good point when he said, "Pack bees, that are to be wintered outside, early; fall packing is a greater advantage than spring packing."

In closing this article let me say that, if the stores are not good in the hive during that portion of the spring when the bees are much confined to the hive, it has a very injurious effect. It causes dysentery, weakens the bees, and keeps up spring dwindling. Such stocks had better be given a good rapid feed the first opportune time.

Brantford, Ont., Can.

## GHURIB DAS.

BY W. K. MORRISON.

The subject of this sketch is a unique character who deserves more than passing attention. Dressed in the garb of an Indian coolie he looks like a genuine native of India, As a matter of fact, he is a typical son of old Scotland, both in personal appearance

GHURIB DAS, ADJUTANT OF THE SALVATION ARMY IN BRITISH GUIANA.

and behavior, and in no respect need the old land be ashamed of her son, even if he has thrown away his kilts.

Ghurib Das was originally christened by his family minister plain Alexander Alexander. In course of time he obtained a position as overseer on a sugar-plantation in British Guiana. He found it a hard place, not only for a white man, but also for the East Indian black man; and he determined, after his conversion and reformation, to become a Salvation Army missionary among the natives of India residing in Guiana. He soon found it was difficult to reach them, even when he spoke their language. They criticise missionaries because they have good clothes, eat fine food, and live in nice large houses, so that it is easy to be a Christian. To get nearer their hearts he decided to adopt their garb and imitate them as far as he could. This had the desired effect, and he soon gathered a number up from their degradation, for bad habits, janga, and opium will ruin any man, even if made of "blood and iron."

Besides gathering up Indians he also got together a motley collection of Scotchmen and Englishmen who had been overseers like himself, but who had fallen by the wayside, chiefly because they liked Scotch fire-water better than life itself.

He had made no arrangements for receiving white men, but he did not send them away. On the contrary, he took them home; but even that would not do, so he raised funds and bought a home in the country, where they could sober up and start a new life under new surroundings.

To keep his protégés busy he started various little enterprises, one of which was an apiary of about thirty colonies. He did not know any thing about bee-keeping, but he read up on the subject until he was able to teach the art to others.

It was in this way I came to know Ghurib Das. He wanted to know more about bees, and sent for me to tell him. I found him in his "office," which consisted of a bare table behind a coolie eating-house in Georgetown. It seemed to me he was casting up accounts, and it is well known he does not waste a cent. He runs another lunch-room for whites out of work, and also an industrial home and laundry, both for East Indians. He conducts street services, and makes visits to the country around, so that his time is fully taken up for 16 hours a day. How he got time to learn bee-keeping I do not know.

Ghurib Das has the entire confidence of the planters and business men of his country, who contribute readily to his plans as far as their money will do it. Some of them do not believe in ordinary missionaries, but they cordially believe in this one. He was one of the prominent figures in the Salvation Army Congress in London some years ago, and deservedly so, on account of his self-denying character and genius for work.

I have met all sorts of missionaries, lived with them, slept with them, and traveled with them; but Mr. Alexander is the noblest of them all, because he is the humblest.

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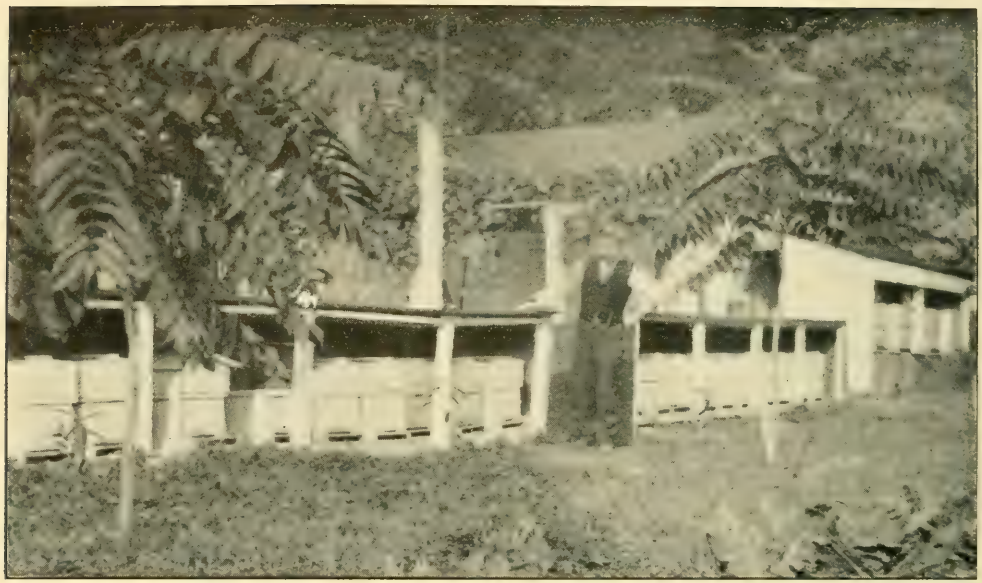
We have just received the annual report on food adulteration, issued by the North Carolina Department of Agriculture. The report on honey is interesting. In 1901 the percentage of adulteration was 20; in 1903, 33.3; and in 1906 none at all.



EDWARD FRITZSCHE'S SHED APIARY, RICHMOND, N. Y.

## SHED APIARIES.

**Good Protection in Summer and in Winter.**

BY EDWARD FRITZSCHE.

I am sending you two photos, one of which shows my little daughter Edna, only four years old, holding a frame of bees. The other gives a view of a part of my apiary.

I have used the sheds shown in the larger picture for the last three years, and have not found them very inconvenient; but I do not intend to place the hives so close together again, as it tends to encourage mixing and fighting. The sheds afford good protection in the summer from the sun, and they are the only and the best thing for outdoor wintering, as they are a good protection from storms. As soon as snow comes I close the front of the sheds with doors, and always find the colonies in good condition, with plenty of honey in the spring.

About my little helper, Edna, who is only four years old, I would say that, even if she does get a sting or two once in a while, she is not afraid of them; and even when she was holding the frame she got one sting, but still held the frame till the picture was taken. She also comes and calls whenever the bees are swarming, should I not happen to be in the yard.

Richmond, Staten Island, N. Y.

[We are of the opinion that closing the sheds during bad weather in the fall or spring as well as in the winter may be good practice providing that such closing shuts the hives in darkness. The sheds should, of course, be opened in flying weather. Failure to do so promptly would more than nullify all the good that had been done.—ED.]

## MOVING BEES.

**Bees Moved more Safely in Winter than in Summer; Some Experience which Shows that December is the Best Month in the Year for Moving.**

BY DOUGLAS D. HAMMOND.

During the past 15 years I have been so situated as to move a great many colonies of bees from one to several hundred miles. My first experience was in buying colonies at sales in January and February, and moving them to a cellar. At first I thought this would do them great damage; but to my surprise they invariably came out in good condition. I once moved 98 colonies in a bobsled during January, and I expected to break some combs: but up to date I have never broken a comb, although I have moved bees every month in the winter.

If you start in to close the entrances to quite a number of colonies, by the time the last is closed you will simply be astonished to find how the bees will give off heat. This warms up the combs; and if there is any empty space it is at the bottom of the frame; hence there is no jerk or leverage on the place where the comb is attached to the top-bar. In warm weather, on the other hand, the lower part of the comb is full of brood, and is heavy. Just above the brood the comb is very tender from the time the first pollen comes in in the spring until the first cold nights in the fall. It is just at this point that combs are so often broken when the moving is done in the summer.

Another reason why moving can be so safely done in cold weather is this: Every practical bee-keeper knows that, when the

honey in a hive is all sealed, as is the case in winter, the bees will not load with honey when disturbed. In the winter, from actual experience I find that the bees will rush against the screen at the entrance; and after two or three hours, no matter how much the car or wagon jars them, they will leave the entrance and quietly cluster as though they were undisturbed. After my experience of being in a car three days on one occasion, and two days and two nights on another, and never having a lot of bees do nicer, I honestly think a month would not have done them any harm. All this moving I am referring to was in freezing weather, and I never found more than from a dozen to twenty dead bees when I took off the screen. In winter, the only ventilation necessary is at the screened entrance, which should be $\frac{3}{8} \times 12$ inches.

EDNA FRITZSCHE, AGE FOUR YEARS.

I have moved a great many colonies in warm weather in well-screened hives. I have even put empty bodies on top, and covered them with screens, and then found from actual experience that, if water is not given the bees every few hours, they will destroy all unsealed brood the first 24 hours. By the second day all unsealed brood, as a rule, will be gone; even if plenty of water is given, and if the colony was very strong in starting, it would be only a mere nucleus by the time the first honey-flow occurred after the arrival. Under such condition the queen seldom has any ambition. Light colonies stand summer moving much better. They will build up and do finely.

On Nov. 6 I moved 23 light colonies to my new home from Sac Co., Ia., having sold all of my stronger ones, and they have come through in good shape. The distance was a little over 100 miles, and the time in transit was 33 hours. I took them in a car with other stock and household goods.

Now, if I had bees in Iowa, or in any other State, and intended moving at any time up to May, I would move by all means in December, or during a month that would correspond to December in Iowa. When I arrived at the destination I would not be afraid to put the colonies in a cellar. Any bees that I might see would be small and wonderfully active, and at the entrance there would be a find dry dust which we all accept as good conditions for any colony. My reason for preferring December is that the weather is usually not so severe during that month; otherwise, January or February is just as suitable.

When I moved to Sac City, Ia., five years ago, I moved three two-frame nuclei, five three-frame nuclei, as well as some full colonies, all of which had been in a cellar up to March 1. They were taken out of the cellar, and loaded in the car and shipped about 300 miles without any profit. While on the way the weather was just a little above zero. I never had bees do better.

In a later article I will tell how to load colonies in a car and how to ship bees in less than carload lots. On most of the railroads bees can not be shipped in less than carload lots except by express, unless certain methods are used which must necessarily be in strict accordance with the rules. During the last ten years I have always sent household goods, bees, etc., in emigrant cars.

After reading this, if any one wishes to know how bees behave on the road in winter, let him take a colony in a buggy a few

miles, and then open it and see if any of the bees are full of honey. Any amount of transit does not hurt bees if they do not gorge with honey.

Truro, Ia., Dec. 17.

## BEES CLUSTERING OUT ON FRONTS OF HIVES.

### Value of Deep Entrances in Summer.

BY DR. C. C. MILLER.

When bees have little to do in the fields toward the close of the season, especially during a hot spell, they are likely to hang out in great clusters, and many an inexperienced bee-keeper has watched in vain at such times for a swarm to issue. With a bottom-board two inches deep the bees are not so likely to cluster outside, but take it out in hanging down below the bottom-bars as shown in the illustration in the hive at the right. That picture is reproduced from a snap-shot taken Sept. 17, 1906, at 3:40 P.M., the thermometer at 89 degrees in the shade, and the blazing sun shining directly into the entrance.

DEEP ENTRANCES DISCOURAGE CLUSTERING OUT ON THE FRONT OF THE HIVE.

There is something very attractive about the appearance of such a cluster, and I always have a feeling of regret that it must be interfered with by putting any thing in its way during the busy season to prevent the bees building down. Quite possibly the bees have the same feeling of regret, for they apparently take pleasure in sailing straight into the hive and alighting directly on the cluster, instead of alighting on the floor and then climbing up. It's a pretty sight to see the bees take this short-cut to their home.

Do you see that apple lying in the grass right in front of the hive at the right? That suggests one trouble in having hives under the shade of apple-trees, in spite of the fact that an apple-tree forms a splendid shelter for man and bee. In a still night in the fall you'll hear "whack, whack," as one after another the apples fall on the tin or zinc roofs. Perhaps, however, the bees get used to it.

Marengo, Ill.

## SPLIT SECTIONS.

### Foundation Cut to Fit; Objections to Bottom Starters; a Plea for Full Sheets Fastened to Top and Sides of Sections.

BY ALLEN LATHAM.

This subject is of especial interest to me, as I am about to choose between these two methods of preparing the sections for the honey-flow.

I was at first greatly pleased with the split-section idea, not only because of the apparent saving in labor, but because of the evident gain in perfection of completed section. But the thought of the edge of foundation showing on the top and sides of the section has kept coming into my mind with such an annoying persistence that I have had to heed it. No, I can not confidently adopt that plan.

And now on page 82 comes Dr. Miller with the modest suggestion that the bottom starter is a better plan than either the split section or the sheet cut to fit. With his suggestion he points out the frailties of the sheet cut to fit. But are these frailties such that they can not be overcome? Surely it seems not difficult to arrange a contrivance with which one can square his sections at the same time that he puts in the snugly fitting sheet. As to the melted wax at the sides, I would suggest that, with expert work, the amount of wax can be brought down to such an insignificant quantity that the objection is not serious. Moreover, in cutting the comb from the section it is improbable that one person in a hundred cuts close to the wood. The edges of the cell-walls as naturally built by the bees will offer fully as much obstruction to the knife as will the melted-wax line. The only comb easy to cut out is that which has no cells of honey next the wood; and, except for appearances, any user of honey would prefer such a comb to one of those fancy no-peep-hole sections.

Yet it is desirable to get the plump section, for the simple reason that it will sell better—sell better because the buyer thinks he is getting more honey for his money.

Any one of the three methods under discussion will produce the plump section, and any plump section is difficult to cut the comb from.

Permit me now to discuss the "better than either," the bottom starter. Firstly, is the bottom starter necessary? I feel constrained to say that it is not. If one will nip the heads of those queens whose workers fail to build comb quite to the botto n of the section, and breed only from those queens whose workers build the comb down and fasten it firmly to the bottom, he will need to use no bottom starter. I am inclined to the belief that my good friend the doctor has bees which are disinclined to build comb to the bottom. A few years ago I was awarded a premium queen which was reared by Dr. Miller. She was a vigorous queen of good size, and proved prolific. Her workers were energetic, and had honey-gathering qualities which were not to be despised. But such combs as they did build! I never saw bees any worse in this particular. They would build a frame of comb and not fasten it anywhere except to the top-bar, while their sections of honey were solid chunks of honey with daylight showing all around the chunk except at the top. It is needless to say that I quickly got rid of that queen. Now, one queen does not denote the character of the bees in one's entire apiary; and, more than that, we all occasionally find a queen of our own rearing which will show this comb-building trait. Still, Dr. Miller tells us that he has to use bottom starters.

I have produced hundreds of sections without bottom starters, which had the comb almost as solidly built to the bottom as to the top of the section. Occasionally I spot a colony nearly all of whose product consists of sections which will let you slide a match along the bottom-bar without brushing the plump comb above. That colony is marked for requeening.

Secondly, is it desirable to use even bottom starters? My experience with these is much less than that of Dr. Miller's. Only two seasons have I tried bottom starters. I tried them in the hope that I could produce my honey thus without separators. And they did help. I have no question that I get a larger percentage of cratable sections (unseparatored) by the use of bottom starters than I do without such starters. I can not here enter into the reason why I prefer to go without separators; but having that preference I wish that plan of using foundation which will bring the best results.

With separators one can use almost any plan of foundation fastening, starter or full sheet. He will get almost as good final results whatever the plan, though even with separators there is a choice as I will point out in a moment.

The bottom starter calls for more puttering work. Just so far is it undesirable. It makes each section of honey cost more.

The bottom starter with me spoils many a section. Right here I see the doctor's jaw drop in astonishment. Possibly I do not know how to use the bottom starter; but I have tried faithfully to follow the very best advice and directions, those of Dr Miller. I cut my foundation carefully, use a bottom starter not over half an inch wide, usually less. The space left between the starters is about $\frac{3}{16}$ inch, sometimes as small as $\frac{1}{8}$, and sometimes as large as $\frac{1}{4}$ What results? I have removed a case thus prepared, which, from above, seemed to contain 28 sections, every one nearly perfect. Upon drawing out the sections three-fourths of them show bad joints between the starters. Right at that po nt the comb at its best will be irregular, with cells of different size and of different shape from the normal. When not at the best there will be frequent unsealed cells, and, not infrequently, empty cells of grotesque shape.

Looking into the why of this I discover that the cause can be one of several. The narrow bottom starter keeps a pretty well-fixed position, but not so the upper sheet. This gets out of true before the joint is made. One cause of the disjointure is failure to see that the foundation does not strike the side of the section when it is squared up. If, when squared in the super, the side of the section pushes against the sheet of foundation, it will throw the further (lower) corner to one side. Again, bees frequently cluster in the super between the foundation sheets of adjoining sections, and start to draw out that foundation several hours before a cluster of bees get at work upon the other sides of these two sheets. The side first drawn becomes convex and the unstartered side concave. The drawing-out so strengthens the sheet that it never becomes straightened by the drawing-out of the other side. In this way the lower corners, and sometimes the entire lower edge of the sheet of foundation, are thrown out of line with the bottom starter. Again, one lateral edge of the sheet is early fastened to the wood while the other still hangs free; then the earlier or more rapid building of one side throws the lower free corner to one side. Again, I am inclined to the belief that some foundation warps. Such warping will throw the upper sheet out of line with the bottom starter.

Such throwing-out of line is disastrous. The work at the juncture is delayed. The perfect comb above and below is filled and sealed, while still unripe nectar is in the irregular cells between. This delays the removal of the super; and, if the season is cut short, prevents the completion of that super.

If the weather is hot the upper sheet tends to stretch. If it stretches too much it will frequently pass the starter, and the result is again bad. If it has already been fastened to the starter before the full stretching occurs, a bad bend in the comb occurs. The cells on one side will flare out while those on the other side will run to an end before they become full depth. I have seen such cells filled with honey and no true capping on them, the side-walls joining in a point. I have even seen them dry and empty, air-

spaces entirely surrounded with honey, or, rather, cells of honey.

I use the extra-thin foundation. With the thin it is possible that my experience with the bottom starter might be more satisfactory. But I must use the extra-thin, for I will not have gummy septa in my section honey.

Even with separators the sheet of foundation with free lateral edg s often brings poor results. The sheet takes on a twist, and the cells on one side and one edge will be shallow, while backing up to them are cells of double depth. This means slow finishing in that super.

With all these facts in mind I am feeling the need, more and more, of sheets fastened to the sides of the section. I have for over a score of years allowed my foundation to hang free, and have had no experience whatsoever with the firmly fastened sheet. All logic points to success through such fastening, and the coming season will see the plan largely tried in my apiary.

Only one possible fault, aside from the extra work, occurs to me. If the foundation stretches, will there not be irregular cells brought about by the sides? Let a man put his hands into his trowsers-pockets and lift. The appearance which those trowsers will assume suggests the wrinkle-sided result that might follow the use of full sheets of foundation fastened at the sides.

It will be obvious, from what can be read between the lines, that I have no use for a full sheet fastened at the bottom. I would leave a scant quarter of an inch there for the possible sag of hot weather.

Finally, after all is said, the very best section honey of all can be produced with only a wee small starter at the top.

Norwich, Conn., Jan. 20.

## PAPER WINTER CASES.

### Some Interesting Experiments Going to Show that their Use is, after All, False Economy.

BY J. L. BYER.

Considerable prominence has been given in GLEANINGS in reference to what I said regarding paper winter cases in the November issue of the *American Bee Journal*. As the editors of this journal have given prominence to the paper idea, it is only proper that I give my reasons for reaching such positive conclusions as quoted by Dr. Miller on page 1554 of GLEANINGS, 1907. Bare statements without any thing to substantiate them are of little value, and apt to impress the readers with the idea that prejudice may have some bearing upon the case at issue.

In the spring of 1903, 20 colonies of bees were bought and put in the home apiary of 110 colonies, making a total of 130, which, by natural increase, came up to 160 when the bees were gotten ready for winter. As the yard was very much crowded, the 20 colonies were placed here and there all over the apiary, wherever room could be made; so, as a natural sequence, they were *protected* more or less by the position they occupied between large packed hives on each side of them.

The hives were eight-frame, L. length, but exactly one-half deeper than the standard Langstroth—a hive, by the way, with a good many admitted disadvantages, yet withal a splendid one for outdoor wintering. All the rest of the colonies were in hives of the same dimensions, only the majority of them were of the ten and twelve frame size. All were permanently packed with paper on the outside of the inner case, and four inches of sawdust between this and outer cases. The outer cases projected six inches higher than inner, making space for a cushion of dry sawdust over the frames.

In the fall, having no suitable cellar, the problem confronted us as to what to do with those twenty single-walled hives. Owing to the crowded condition of the yard, tenement cases were out of the question, and I disliked the idea of making a single case for each individual hive. Just at this time I read about the tarred-paper plan, and at once the problem of wintering those twenty colonies was solved(?). An empty super, the same depth as the hive-body, was placed over each colony, with about ten inches of dry chaff packed snugly on top of the quilt over the frames. The tarred paper was then wrapped neatly around the full size of the hive, super and all, and tacked securely with cleats. As suggested, the paper was allowed to go below the bottom of the hives, a portion of the paper then being cut out for the entrance.

Perhaps the readers will be more assured of a good job having been done when I say that Mrs. Byer helped to do the "papering," as I have often noticed, when any work that requires neatness and precision is to be done, it is much better if there is a "woman in the case."

Now as to results: As will be remembered, the winter of 1903 was a very severe one; in fact, January and February were almost record-breakers. To be brief, the 140 colonies in the packed hives wintered well—so well that we were surprised, as we expected to lose very heavily after the bees passed through such a severe winter. About ten per cent would cover the winter loss in addition to eight or nine colonies that died in the spring from queenlessness and other causes.

As to the twenty colonies in the "papered" hives, by Feb. 1 I saw it was all up with them—six or seven being dead at that early date. The frost formed in coats on the inside of the hives; and whenever the weather became a little mild, the moisture would run in streams out of the entrances.

As to the size of the entrances, I forgot to say that some were left 5 inches by ¾, and the rest much smaller. However, it became imperative to enlarge the small entrances, as this moisture referred to congealed to such an extent as to close completely the entrances

when the weather turned colder. Out of the lot, only three survived, and they were reduced to mere nuclei.

You may say this was an extreme case, and not likely to be repeated for some time. Admitted that such is the case, *yet one experience like this would pay for the extra cost of winter cases for years to come.* I admit that, even in our latitude, *some seasons*, bees will winter fairly well in h ves protected by paper if some dry packing is placed on top of the brood-nest; but that is no argument in their favor, as the bees will in the same seasons winter in single-walled hives without the paper. It is a well-known fact that strong colonies will often winter fairly well under abnormal conditions; but rest assured that, under such conditions, an *abnormal* amount of stores is always consumed.

For eight consecutive years one of these big twelve-frame hives referred to, with only the single walls, wintered well with no protection save a super full of chaff on top of the hive. About two inches from the top of the brood-nest a loose knot about an inch in diameter had fallen out, and it was possible at any time during the winter to see the cluster of bees through this knot-hole. No doubt Mr. Holtermann and others will remember this incident, as the hive was shown them during a bee-keepers' meeting at my father's place. With all this exposure they wintered well enough to average over 100 pounds of extracted honey per year for the eight years; but every winter fully a third more honey was consumed than in colonies protected properly. Just so with the papered hives. I feel convinced that, in every case, the saving in packing-material will be more than balanced by increased consumption of stores.

You say, Mr. Editor, p. 1554, that you can see no difference theoretically between paper and other packing-material, and so far as your top protection described on page 93 is concerned I agree with you; but when side and end protection is considered, the paper is no comparison to a few inches of sawdust for resisting frost.

While on the farm we had a large cellar that would hold 4000 bushels of roots, built as an annex to the stock-barn. While the walls of this cellar were mostly underground, over the top was simply a floor of unmatched lumber with roof over all. Now, although the thermometer sometimes drops to 20 below zero, we found that six inches of sawdust over this floor would keep out the frost. Do you think that tarred paper spread over the floor would have given like results?

As the most of my bees are wintered outdoors, I have tried only the paper for spring protection in a limited way; but what experience I have had, coupled with what I have observed in other yards, has disgusted me with its use, as the black paper attracts the heat of the sun *too* much, and bees are enticed out in unsuitable weather. With boards leaned up against the front of hives this difficulty is overcome somewhat; but at outyards they can not be used. Certainly for my own use I should much prefer some top protection that will fit *snugly* over the frames to any amount of paper tied around the sides and ends of hives.

This article is already too long, so I must forbear giving the experiences of some other bee-keepers with the paper protection; but before closing I wish to say that, in my opinion, too much stress has been laid by some writers on the danger of *too much* packing for outdoor wintering. Last winter the losses were very heavy in the majority of apiaries, regardless of how bees were packed; but I wish to say that the very strongest half-dozen of colonies to come under my notice last spring, among hundreds of colonies examined, were those wintered by a friend of mine, a farmer bee-keeper. These bees were packed in large cases, four inches of sawdust under the hives, six inches all around, and twelve inches over the brood-nest. The conditions those bees were in on the first of May, after being wintered in those "refrigerators," would have delighted the heart of A. C. Miller in spite of his opinion of such methods.

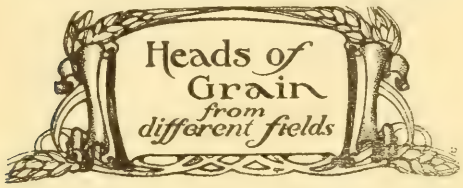
The argument is often advanced, that the packed hives do not warm up enough to let the bees have a flight, as is the case with the paper-protected hives. True; but the bees in well-protected hives do not *need* the flight in the majority of cases. No, I do not advocate as much packing as the amount referred to in my friend's case; but I do think there is danger of giving *too little* rather than too much protection to bees wintering outdoors in Ontario.

Mt. Joy, Ont.

[There is not much if any difference between your position on paper winter cases and that of the editor. Instead of saying that we "can see no difference theoretically between paper and other packing material," as quoted by you, we said (see p. 1554, Dec. 15), "There should be several folds of newspaper or other packing-material under the paper cap to give the hive necessary protection. We can see no reason theoretically why such a packing-material, protected from the weather by an oiled or tarred paper, should not give just as good results as the same packing-material surrounded by a wooden case." Notice that that statement does *not* compare "paper or other packing-material," but a paper or wooden winter *case* over the same amount of packing; notice also that we said "packing-material surrounded by a wooden case," meaning not packing-material confined to the top only, as you seem to infer, but at the top and *around* the hive, sides and ends. In other words, if a certain thickness of packing were sufficient under a wooden case, it ought to be nearly if not quite as efficient as under one of paper. Or, to put it still another way, it is not a question of *covering*, but it is a question of the *amount* of packing-material around top and sides, and the quality of it, no matter how covered, if kept dry. But right here is a question: Is it practicable to put as thick a packing under a paper cap as in a double-

walled hive? We think not, for it is very difficult to make packing around the hive, as well as on top, hold its place while the paper cap is being folded around.

We shall have to conclude, for a climate as severe as that of Canada, in view of your experience and that of others whom you do not mention, that a paper cap is not satisfactory; that nothing less than a good double-walled hive with plenty of packing between the walls and a powerful colony is suitable for wintering outdoors. Mr. E. D. Townsend (although not an advocate of paper protection for wintering) has used paper successfully for *spring protection* for a number of years He has found, however, that the black color of tarred paper is detrimental, and so he advises the use of light-colored paper. An article from him on this subject will appear in our next issue.—ED.]




MASSACHUSETTS SOCIETY OF BEE-KEEPERS.

The fourth meeting of the Massachusetts Society of Bee-keepers was held February 1, 1908, in the Ford Building, Boston. The topic for the evening was "Spring Management of Bees," by Mr. Allen Latham, president of the Connecticut society. His long experience had convinced him that, if fall management had been of the proper kind, there would be no need of spring management; and he expressed disapproval of opening up the hives and exposing the bees to cold before May or June. He gave several directions by means of which we could tell by outside observations if the colonies were in good condition or not. Only those that were not in good condition should be manipulated. He was plied with questions, all of which he easily answered. Last he gave a description of his large twenty-frame hives —those that he has at the Cape, which can be examined by him only in June and September, and from which he takes honey in the large frames instead of sections. After a most profitable meeting we adjourned to meet again on the afternoon of the first Saturday in March at 2 o'clock at the Ford Building; and we hope the weather will be pleasant so that all old members can attend. Considering it was such a stormy day and evening it was the best-attended meeting we have had. Nearly 40 were present, and quite a number of bee-keepers joined our society. Others promised to do so at the March meeting. As these meetings are fast drawing to a close we hope to see a good number of the old members who find it inconvenient to attend the evening meetings.

Belmont, Mass. X. A. REED.

STARTING WITH THREE-FRAME NUCLEI; A GOOD RECORD.

I wish to report my experience with bees in this new country, the Shoshone Reservation, which was opened last spring, 1907. On May 20, 1908, I sent for 35 three-frame nuclei with untested queen. The bees were five days on the road, even though they came by express. When they came I put each nucleus in a ten-frame Simplicity hive and put in seven frames with just ⅞-inch starters, expecting the bees to fill the hive or about that. I was not prepared for what followed, for in a short time the hives were full to overflowing. I put on another ten-frame body, and this they filled. I then put on the third ten-frame body, and this they also filled. At this time there was a prospect of three weeks of good honey-flow ahead, and I had no more hives nor sections. Every thing was full; so when fall came I found I had, from these 35 nuclei, 71 stands of bees in ten-frame hives and 600 lbs. of the finest honey I ever ate. I also took 20 colonies on shares and got 800 lbs. of fine comb honey which I sold with the 600 at 12½ cts. just to my neighbors, and did not solicit for the sale of one pound of it. It was all sold. Three weeks after, the bees stopped working. Orders kept coming in as far as 60 miles, long after I had sold out.

Hudson, Wyo. GEO. BURCH.

BEE-SHEDS FOR WINTER; THEIR ADVANTAGE IN PREVENTING THE FLIGHT OF BEES ON UNFAVORABLE DAYS.

I can agree with the editor, p. 96, Jan. 1st issue, in thinking that a great many bees are enticed out when it is too cold for them to fly, and therefore perish. I always let down the doors to the bee-sheds in cold weather, shutting out the light as well as the weather. I let the light in only when the bees should fly.

I must, however, differ from friend Latham that it is necessary to have the entrance directly in front of the cluster. For many years I have left a ⅜×2-inch entrance at each side of the front of the hive. If the cluster is on the east side of the hive the east entrance is found many times completely stopped up with dead bees and ice, while the west entrance is clear. I would not think for one minute of having the entrance in the middle, and depending on that for air, and I have wintered from 30 to 50 colonies for 20 years and never lost one in the winter.

I should think Halter's storm-door very nice for outdoor colonies. Still, bee-sheds are far ahead, I think, if rightly managed. There can be no spring dwindling in them if bees are not enticed out as the editor says I have never had any spring dwindling of colonies in sheds, but have had colonies badly affected when wintered outside.

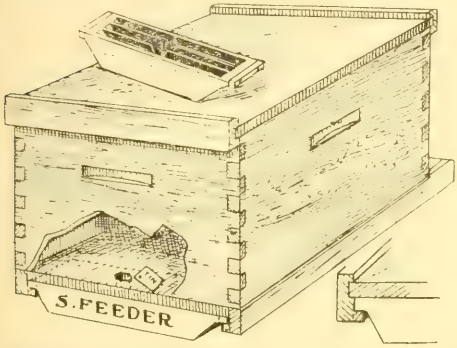
Marceline, Mo. IRVING LONG.

[Your scheme of having a door or lid to your shed that can be let down in unfavorable or bad weather, shutting in the bees and closing out daylight from the entrances, is a good one. Your report on how it keeps

down spring dwindling is interesting as well as valuable. By the way, the time is coming when we shall give more attention to this matter of spring dwindling and losses from flight on bad days in the fall. To winter bees successfully is one thing; to "spring" them is quite another.—ED.]

### HOW TO USE THE SIMPLICITY AS A BOTTOM FEEDER.

Here is a new arrangement for bottom feeding with the Simplicity feeder. Cut out each end so that it will be about ¼ inch thick; then nail a strip on the side rails of the bottom-board, for a rest, and to permit the feeder to slide in and out. Cut a proper-sized hole in the bottom over the feeder, and slip a piece of tin over this when not in use.




Attaching Simplicity feeder under the bottom-board at the back of the hive.

This feeder will be easy to slide in and out; does not mar the beauty of the hive, nor require any side room. If they were made full width of the inside rails of the bottom, in length, the bottom rails could be grooved to receive them, or the little strips could be quickly put on. I dislike to mar the looks of a hive by shoving the bottom out in front, and believe this arrangement is equally satisfactory, although cheaper.

Bladen, Ohio. C. H. CARGO.

[This method of applying something already in use we consider to be excellent. If one does not have Simplicity feeders he may use a pan with a float. The rim of the pan could be made to slide into rabbeted cleats the same as here shown.—ED.]

### PLURAL QUEENS; A FLIGHT-HOLE FOR EACH QUEEN.

On p. 1579 Mr. Alexander wishes to know why I leave only one super open about the time the young queens are old enough to take their flight. By going back to page 476, for 1905 GLEANINGS it will be seen that I was superseding my queens in the spring. It was just at this time that I hit upon the dual-queen system by having the young queens mated from the super.

I experimented with flight-holes in different parts of the super, but I found that on several occasions it did not prevent the young queens from going in at the main entrance of the hive; so now I always protect the entrance or flight-hole with a piece of excluder zinc.

As to that expression of being able to keep as many queens as there are supers, I will state that the limit was three queens to as many shallow supers. You must take into consideration that I am in a semi-tropical climate. The queens are introduced in the fall; and, when found to be accepted, the hive is not interfered with before the first week in February, when the top super with most of the honey is placed below.

The sting-cut virgin queen (p 1579) turned out to be a drone-layer, and my second attempt to get several sting-cut virgin queens mated from one hive was a failure.

Sierra Madre, Cal. H. DAVENES.

### CAN FOUNDATION TRANSMIT FOUL BROOD?

There seem to be quite a number of colonies affected with foul brood all through the section between Worcester and Springfield, and possibly in other sections; and all the people here carry the impression the bees in old box hives are free from disease, while those that are in modern hives on frames of foundation are all infected, and that the infection was from the foundation used.

Mass. SUBSCRIBER.

[We desire to say most emphatically that foul brood is not carried in foundation. Wax from foul-broody yards has been melted up hundreds (and we may say thousands) of times, and made over into foundation without any trouble afterward from disease. There is probably not one pound of foul-broody wax to the hundred that ever gets into the market. Once melting would be sufficient to kill all germs of disease; but after it goes to the foundation-maker it goes through several separate and distinct processes of meltings and refinings covering a period of probably three or four hours all told, during which all germs of disease of any sort would be cooked and killed. It is a principle in bacteriology that boiling for half an hour, then letting it stand for a day or two, and then boiling again, and then boiling once more after another period of rest, will be much more effective than one continuous boiling for the same period. After the wax is melted and cooled, the coverings of the germs open, so to speak, and during this time the germs are very susceptible to the action of heat; and when it is applied again they are immediately killed. Ask any scientific man or any bacteriologist and he will tell you that foundation made by any of the standard factories would be perfectly immune to any disease.

The fact that colonies in box hives in the case cited are free from disease can be explained on the ground that in such hives it is not possible to move combs from one hive to another, as it is in the case of the modern hive with movable frames. If disease of any kind is present in the vicinity it may be transmitted from one hive to another by moving

the combs from one hive to the other for the purpose of equalizing the strength of the colony, supplying stores, or the giving of brood for queen-rearing. On the other hand, it is generally considered that bees in box hives, when they once get the disease, are a much more fruitful source of infection than those in modern hives. In some States the foulbrood laws make it a misdemeanor to allow any bees to exist in box hives, and the inspectors are therefore given authority to order all owners of such hives to transfer the bees out of them into modern hives where he can easily look the combs over and see whether the disease may or may not be present.—ED.]

And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.—GEN. 2:7.

I have just made another great discovery. To be honest, however, it isn't *exactly* a "discovery," because it isn't *new;* and it isn't *my* discovery exactly, either; notwithstanding, it is going to be of wonderful benefit to all mankind. It is about chickens and folks and fresh air—not only *fresh pure* air, but *cool* fresh air, or cold fresh air, perhaps

While we grant that "folks and chickens" often suffer from exposure to cold, or from "getting chilled," as we term it, my discovery is that the right and proper way to warm up a *chilled* animal is not to take him (or it) into a warmed-up apartment, where he must from the very nature of things breathe the same air over and over again. When winter comes we all get to work to shut out the cold by closing all doors and windows, and even making all the cracks and crevices as nearly air-tight as we can. The high-priced and fashionable hotels up north have storm-doors and double-sash windows, so as to save the fuel-bill; and if anybody objects to the ventilation he is pronounced a crank.

The old-fashioned fireplaces, and lately even the stoves, are crowded out to give place to radiators warmed by steam or hot water, or hot-air furnaces. No wonder the doctors are "kept busy." Some of them are kept *pretty* busy in hunting up names for the new maladies, like grip, appendicitis, etc.

Well, for some time I have been wondering why God has recently put it into my heart to have such a wonderful love for studying all about chickens, especially "baby" chickens. My sister, Mrs. Gray, who has from the first been a leader in the W. C. T. U. movement, said last winter she almost lost patience with me because I used my privilege of talking to great masses of people all over the world in talking so much about *chickens*—common every-day *chickens* that everybody knows all about, or very much about. When I got to the chapter about "Fighting Mothers," however, she owned up I had made a big moral.*

Well, as soon as I reached this land of perpetual summer once more, the fever for chickens came back, and I have made two hatches with my two small incubators. I have told you about the first and the 70 chickens I gave to my one hen, the original "fighting mother." This hen had commenced to sit in a barrel laid on its side, and this barrel enabled the 70 to mass themselves around her and over her back in a way to economize heat to very good advantage. When night came, Mrs. Root and I were out in front of the barrel with a good light to see how she was going to manage with her remarkable brood, and this is what we saw. Dainty little heads with the cutest bright eyes were sticking out between her feathers all over her body, as it seemed. First they wanted animal heat for their little bodies, and next they wanted good pure *cool* air for their little lungs. A little later (when a day or two older) they spread themselves out in front of and all around her in a way that was a sight to see; and when a cold night came I discovered that they slowly changed places, very much the same way that a cluster of bees does in winter time. The fresh air they must have, as well as warmth. As skunks and other prowlers were about, a wide board was set up in front of the barrel nights; but I soon found this was too close, so I replaced the board with poultry netting, and this did for a while; but in a few days more the 70 were clear up against the netting, and the hot and bad-smelling air admonished me the barrel must be changed for more airy quarters. A little house 4×4 feet with inch-mesh netting on two sides now keeps out the "varmints" and gives the chicks air when they are nearly five weeks old; but the most of them prefer little perches a few inches above the ground. They were weaned when a little over three weeks old, and their fighting mother very soon commenced to lay again.

These 70 chicks and the mother hen have explained to me, as clearly as words can tell, that, while these little bodies must be kept warm, the little heads need to be kept out in the cool air. Of course, chickens will live (some of them) if kept in a warm room where they must breathe warm air, and breathe the same air over and over again, and in the same way people *may* live to a good old age (*some of them*) where they sleep in rooms with the doors and windows shut, breathing the same air *over and over again;* but nature

* A few days ago it was my privilege to listen to an open-air talk here in Bradentown by Mrs. Carrie Nation, and *she* had quite a chapter in her address on "Fighting Mothers." Although she had never heard of me or my chicken stories, you would almost think that she had borrowed from me or I from her talk. Well, well! This only illustrates once more how "great minds (ahem!) run in parallel channels." Perhaps I should add that, even if she did make lots of people mad, especially the cigaret and tobacco users, the great crowd gave her quite a generous collection.

is, and has been for some time back, making vehement protests. But we are not done with the chickens yet.

Perhaps I told you I gave the 70 to that one hen because a brooder that was on the way had not yet got around. Mr Calvert informed me some time in December that a man named Root, of Cleveland, O., had a new invention in the way of brooders, and that we (The A. I. Root Co.) were going to make some for him. This man (no relation to us), when he knew I was studying chickens, expressed a wish to have me try his brooder here in Florida. I consented, for, in fact, I had his circular over a year ago, and had listened to his reasoning; but I want you all to know that I have paid for my brooder, for the very reason that I want to give an unbiased opinion.

Well, this man Root talks this way: He says a hen's body, after her eggs are hatched, is up to a fever heat of about 107, and that the chicks, after they are out of the eggs (that she has kept close to 103) are warmed by coming in close contact with her legs, wings, and body, where she has pulled the feathers off in order to permit this *close contact.* If you watch you can see the new chicks push and crowd up between her legs, wings, and body, to get this warmth; and *then* they push out their heads and drink in the cool fresh air, which is really the "breath of life" and the breath that gives life to all animated creation. This air must be pure, and it has been abundantly proven that a sitting hen must not be kept in a warm room, neither before nor after the hatch. It isn't the *heat* that debilitates and kills (for my "fighting mother" hatched 20 chickens and raised them all during one of the hot months here in Florida), providing she is right out in the free air all the time. I am just learning that incubator cellars must be well ventilated, for chickens must have pure air to breathe while inside the shell as well as outside.

Now, this man Root has made a brooder of tubes filled with hot water; and the chicks, when cold, push between and below these tubes and get warm while their heads are out in cool pure air. There is no cloth nor curtains about the machine, and there are so many large ventilators I was at first afraid to keep them open according to directions. My 80 chicks, put into it about ten days ago, are to *me* wonders of health and vigor. I have just now stopped my writing because of a sudden dash of rain; but, although some of them got pretty wet before they ran into the brooder, the hot pipes soon fixed them all right. No thermometer is sent with the brooder. The directions say none is needed. Just turn up the lamp so the chicks are quiet and satisfied, and that is all. If you get them too warm they just squat down under the pipes without touching them, or move out into the cooler apartment. Several times I have had the pipes so hot I could not bear my hand on them; but the chicks were never harmed at all (they just moved back as you would from a hot stove).

When chickens and folks are suffering from cold there are three ways of getting warm; viz., more clothing (or blankets); exercise, and artificial heat. The latter may do very well if taken from a fireplace or grate; but if we depend upon warming up a room by warming *the entire volume of air* in the room it needs a good constitution to stand it very long. If the room is quite large according to the number of people it may do very well; and a small room full of people *may be* well ventilated; but I fear it is not often done.

The poultry books and journals have much to say of the losses of chickens when two to three weeks old from something they call "bowel trouble." I have never had any experience with trouble of this kind with *chickens;* but, oh dear me! I *have* had some personal experience along this line, and I will be frank enough to tell you that nothing upsets my digestion like being obliged to remain in a crowded audience where a hundred people, more or less, are breathing every inch of air *over and over again.* Sometimes even churches are poorly ventilated; but this never *need* happen here in Florida, and never should happen *anywhere.* For God's sake (and for the sake of saving souls) do not give the enemy any reasonable chance to discourage church-going by complaining that the ventilation is bad.

Mr. Root, with his brooder, has planned so as to keep the chickens warm while their heads are practically outdoors; and this new book on tuberculosis gives pictures of bedrooms for consumptives, so arranged that, while the patient is sleeping in a comparatively warm room, his head, or perhaps I should say his mouth, is practically out of doors. There are other pictures of sanitariums where sick people are so well bundled up that they almost live outdoors even in freezing weather.

Now, then, when you are chilly, and feel you may "catch cold" if not warmed up quickly, try first, if possible, exercise.* Start out pretty well clothed, and then lay off the extra clothing when you find you can spare it. If both clothing and exercise are out of the question, use artificial heat, but don't breathe the hot air if you can help it, and *don't* breathe the same air over and over. A relative near death was recently made very much more comfortable by being placed near an open fire, with an arrangement to give him cool air right from outdoors to breathe.

Chickens by preference roost in the tree-tops. It would be hard to imagine a situation where they could be more sure to avoid breathing the same air again; and I have heard of lodging consumptive patients in tree-tops in order that they might have the very *best* air. An upper room, I believe, has been pronounced preferable; but an upper

*My chicks when ten days old run out in the rain with impunity, but they run like deers, using both wings as well as legs, and then dry off between the hot pipes with cool pure air all around them. These same chicks ran all over a large dooryard when less than a week old.

veranda or porch, with rubber curtains to keep off storms, is still better.

When your feet are too cold to go to sleep at once, don't go to bed in a warm room on that account, but warm them up with a soapstone, rubber bag of hot water, or the time-honored flatiron wrapped in a woolen cloth. The cool pure air will soon give you animal heat enough, and then be sure to get the hot things out of the way or they will make your feet sore and tender.

In regard to brooders here in South Florida, I suppose I should say this is my first experience with brooders of any kind except some very rude home-made ones; and, for aught I know, there may be others having the good features of this one. With favorable weather no brooder of any sort is very much needed after the chicks are a week or ten days old

The entire poultry business has recently been almost revolutionized by the discovery that cloth curtains are ever so much better than tight glass windows, no matter how cold the weather is; and, just of late, stables for horses and cattle are found to be very much better than tight structures with glass windows. If you are ready and willing to take "the breath of life" as a free gift from God's own hand, look out that you do not, sleeping or waking, stay very long where you are obliged to breathe the same air *over and over again.*

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In answer to many kind inquiries in regard to the sister threatened with the "great white plague," I am glad to tell you that our efforts, through a kind Providence, seem to have, at least for a time, warded off the destroyer. Here is what she has just written me:

*Dear Brother:*—We are now in the worst storm we have had this winter. This is the first day I have been unable to go over to see the folks across the way. I ventured over yesterday, but tumbled into a snowbank before I got home. I am feeling quite well, and very happy to think I perhaps can stay right here all winter. SARAH.

Manistee, Mich., Feb. 1.

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### CRIMSON CLOVER IN TENNESSEE.

We clip the following from the *Ohio Farmer* for Feb. 1:

We have experimented considerably in the last two years with crimson clover, and find from our experiments that this forage-plant bids fair to prove most valuable to us. Its hardiness and ability to attain a good growth during the winter and early spring make it very valuable to us as a green-manuring crop, as well as a winter and spring pasture. One point in its favor is the cheapness of seed. We bought seed only for an experimental test. We now clip the heads and save our own seed at very little expense. We sow it and winter oats together for a winter pasture, and find that it has no superior for this purpose. Ten to twelve pounds of clover and three pecks of oats gives us the best results. It should be sown as early as possible when sown for pasturage, so that it will attain a good growth before severe weather. We have sown the above on land near our chicken-yard and got paying returns by so doing. The chickens are very fond of it, also of the growing oats. By mixing them we are able to secure an abundance of green feed for the flock the entire winter.

We have experimented largely with it in connection with second-crop potatoes, and find that we can rely on it here. By sowing it alone at the rate of 15 to 18 lbs. per acre, or with rye, 10 to 12 lbs. to three pecks of rye, we are always able to secure an ideal stand of each, which makes a very fine growth. This forms an excellent winter covering for what would have been naked soil. It also holds the surface soil, thus preventing surface washing. In the spring we also have a splendid crop of green manure to turn under.

We also find it very valuable as a winter crop for young orchards. By sowing it with rye we are sure of one winter crop for our orchards, and are almost sure to secure the two on the same soil at the same time. We have experimented with it in cotton land, sowing it at the last plowing of cotton. Where the land has been well cultivated we usually get a good stand from this sowing. Some of our largest cotton-growers in this section claim that it has no equal for the purpose. One of the most progressive farmers in our county claims that he can grow cotton several years in succession on the same land, and sow crimson clover at the last plowing and leave his soil more fertile each year.

We have tried it with cow peas after wheat and oat harvest, and find the result gratifying. For this purpose 15 lbs. of crimson-clover seed and one bushel of peas gives us splendid results. We cut the peavines for hay when necessary, and still have a fine winter covering for our soil. We find the clover makes a better growth when sown alone. In sowing it with peas we find it best to sow only one bushel of peas per acre. We sowed it and peas together for an experimental test in some corn land, and found the result so pleasing that we shall sow it extensively in our corn land in the future. By sowing it and cow peas together at the last working of the corn, we find we are not only able to grow a grain crop but also two forage crops on our soil at the same time. From the peavines we have often gathered peas that were worth more than the corn crop, also leaving a large amount of nitrogen and humus for the soil in the decaying vines. By mixing crimson clover seed at the rate of 12 to 15 lbs. per acre, and one bushel of peas, we have found that we can secure a vigorous growth that prevents surface washing, also furnishing an abundance of green manure to be turned under in the spring.

From close observation and experience I offer the following to those who are contemplating growing crimson clover: Do not expect to secure a stand unless sown in well-prepared soil. You can not grow it successfully on land that has a sandy subsoil—or at least we can not. We get better results when sown with oats, rye, or cow peas than when sown alone.—*W. C. Crook, Henderson Co., Tenn.*

While the above is all right for Tennessee, some of it needs some modification for Ohio. We have never failed in getting it to winter over here and in Northern Michigan when sown in July or August. With good ground and favorable weather we have also had good success when sown in September. It must get root enough to stand the freezing and thawing in clay soils. So far as I know, it also succeds when sown with buckwheat. After the buckwheat is harvested, or killed by frost, the clover comes on beautifully.

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## Temperance.

We copy the following from the outside cover of the *American Issue* for Feb. 8, and hope it will bring a hearty amen from every reader of GLEANINGS:

A religion that leaves the saloon undisturbed, unattacked, is not worthy to be called after the name of Jesus Christ. Again have we reached a time in the march of Christ down the centuries when, if these should hold their peace, the very stones will immediately cry out. This ethical wave against the saloon has come like a hurricane upon the deck of a pirate ship. There is but one explanation—Jesus Christ is walking across the American continent. Every place where his holy foot is lifted leaves a dry spot; and its meaning is, *the liquor-traffic must and shall be destroyed.* Christ is the source. The saloon must die.—*Clinton N. Howard, before Rochester, N. Y., ministers' meeting, January, 1908.*

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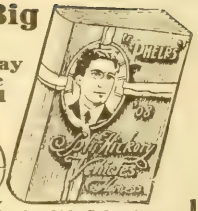


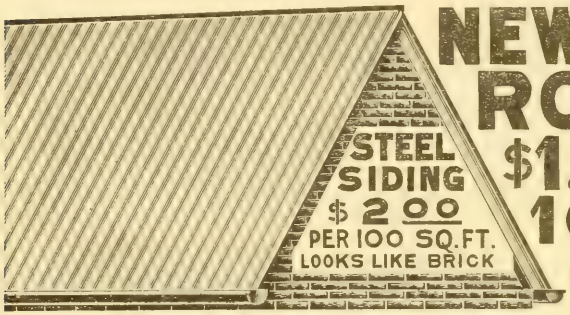


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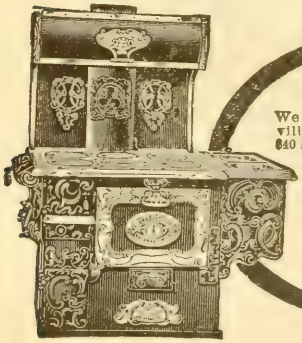
We ship this roofing to any one answering this Ad. C. O. D., with privilege of examination if you send us 25 per cent of the amount of your order in cash; balance to be paid after material reaches your station. If not found as represented, we will cheerfully refund your deposit. **ASK FOR CATALOG NO. C. K. 688.** Lowest prices on Roofing, Eave Troughs, Wire, Pipe, Fencing, Plumbing, Doors, Household Goods and everything needed on the farm or in the home.

**WE BUY OUR GOODS AT SHERIFFS' AND RECEIVERS' SALES**

**Chicago House Wrecking Co., 35th and Iron Sts., Chicago**



**"A Kalamazoo Direct to You"**

We have more than 100,000 satisfied customers in more than 17,000 cities, villages and towns in the United States who have each saved from $5 to $40 by buying a Kalamazoo stove or range on

**360 DAYS APPROVAL**

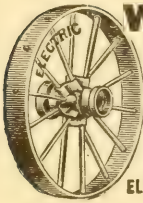
direct from our factory at actual factory prices. No stove or range has a higher reputation or gives better satisfaction. You run no risk. You save all dealers' profits. We pay the freight.

**Send Postal For Catalog No. 416**

and see list of towns where we have satisfied customers.

**Kalamazoo Stove Company, Mfrs., Kalamazoo, Mich.**

Our patent oven thermometer makes baking and roasting easy.




**WAGON SENSE**

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

**Electric Handy Wagon.**

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

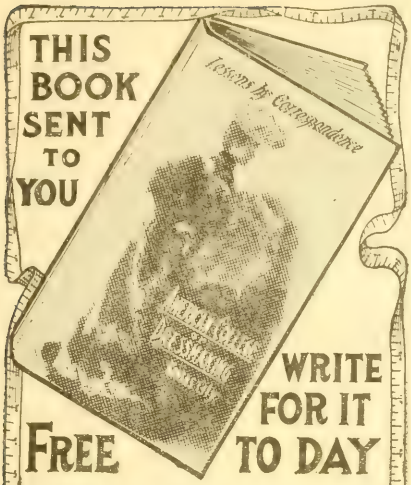
**ELECTRIC WHEEL CO., Box 95, Quincy, Ill.**

**SAVE MONEY on Berry Boxes and Baskets**

Fruit and Vegetable Packages and Growers' Supplies of all kinds. Write for free money-saving catalog and pricelist to **New Albany Box & Basket Co., New Albany, Ind.**

**Largest Factory of Its Kind in the Country.**

THIS BOOK SENT TO YOU




FREE WRITE FOR IT TO DAY

LEARN DRESSMAKING AT HOME BY MAIL

We Guarantee to teach you to your own satisfaction. SAVE MONEY by doing your own sewing, by drafting your own patterns. These Lessons will enable you to dress far better at one-half the usual cost.

WHAT ARE THEY WORTH?

OUR STUDENTS SAY. (From recent letters:)

"I would not exchange the knowledge I have gained for double its cost." "I would not sell my lessons for $25." "I would not take $50 for what I have learned." "I have made 25 waists (six silk ones)—all perfect fits." "I just saved the price of my course by making my own silk dress." "I have saved a large dressmaker's bill by doing my own sewing." "I do all our home sewing now, the children's and all." "I have saved enough from what I used to pay for patterns to buy me a new suit." "The knowledge gained from these lessons is enabling me to help my husband pay for our new home."

A WOMAN Can Earn $5,000 a Year

Many Women nowadays are earning $100 a week—$5000 a year by dressmaking. One woman, the head designer of Chicago's largest retail dry goods house, earns $10,000 a year. Salaries of $25 to $50 a week are common. We teach you by mail and put you in a position to command the largest salary of any woman in your locality, or you can start in business for yourself. We teach you how to Design, Draft, Cut, Fit, Make, Drape and Trim any garment, including children's clothing.

This College is endorsed by all high grade Fashion Magazines—Delineator, Designer, McCalls, Pictoral Review, New Idea Women's Magazine, Modern Priscilla, Housekeeper, etc.

This book will be sent to you free. At an expense of hundreds of dollars this college has published 10,000 of these copyrighted books to advertise the American System of Dressmaking, and will send you one FREE while they last. Write for it today. One copy only to each woman.

AMERICAN COLLEGE OF DRESSMAKING
367 College Bldg., Kansas City, Mo.

PATENTS No attorney's fee until patent is allowed. Write for "Inventor's Guide."
Franklin H. Hough, Loan & Trust Bldg., Washington, D.C.

No. 233. Fine Canopy Top Surrey. Price complete, $88. As good as sells for $50 more.

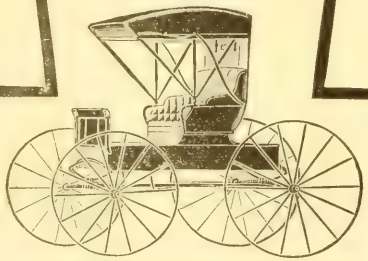
Elkhart Buggies and Harness

are sold direct from our factory to the user. In buying from us you save the dealer's expenses and profits. 35 Years Selling Direct is our record and we are today

The Largest Manufacturers in the World

selling to the consumer exclusively. We ship for examination and approval, guaranteeing safe delivery. No cost to you if not satisfied as to style, quality and price. Over 200 styles of Vehicles and 65 styles of Harness. Send for new, free catalog.

Elkhart Carriage & Harness Mfg. Co.
Elkhart, Ind.



No. 685. Two-in-one Buggy with padded wing dash and fine auto seat. Top easily removed for open wagon. Price complete, $53.50. As good as sells for $25 more.

EXCELL IRON and STEEL ROOFING & SIDING

Direct To You from our own factory at lowest factory prices. We are manufacturers and handle no 2nd hand nor short length stuff. Every part of our roofing and siding is made in our factory from genuine Charcoal Iron, Double Refined Puddled Iron or Steel. Put on the kind of roof that wears. Ours is guaranteed. If it isn't the best you can buy anywhere, don't pay for it. Easy to lay. No experience needed. Tell us about your building and let us quote you factory prices. Write for Metal Goods Catalog. It is free.

THE UNITED FACTORIES CO.
Dept. No. R38, Cleveland, Ohio.

# Johnson says:

INCUBATOR MAN

He'll not only save you money, but he'll help you make money with a famous **OLD TRUSTY INCUBATOR** The simplest and surest incubator made. Runs itself and pays for itself. 75% and better hatches guaranteed. No matter where you live he can make quick delivery. **40, 60, 90 Days' Trial.** Freight prepaid. Send your name for Johnson's Old Trusty Book. 176 pages—300 pictures and good, helpful chicken sense. Write today to

**M. M. JOHNSON, CLAY CENTER, NEBRASKA**

## BIGGER POULTRY PROFITS

Our new 128-page Poultry Book teaches the inexperienced and gives the expert many valuable hints. Tells why **"SUCCESSFUL" INCUBATORS AND BROODERS** are best. Offers 14 varieties of fine birds and eggs at low prices. Catalogue free. Booklet on "Proper Care of Chicks, Ducks, Geese and Turkeys," 10 cents. Poultry paper 1 year 10 cents.

**DES MOINES INCUBATOR CO., 190 Second St., Des Moines, Ia.**

## GET MY LOW PRICES

Before you buy an Incubator. I manufacture in large quantities and sell direct to you.

**IDEAL Hot-Air and Hot-Water Incubators and Brooders**

hatch more chicks and stronger chicks. Send for my big free handsomely illustrated book, **"Poultry for Profit."**

**J. W. MILLER COMPANY, Box 43, FREEPORT, ILL.**

## BETTER WORK LESS LABOR

SAVE HIRED HELP

Two things much desired by every farmer. Two things you're sure to get in **Iron Age Implements.** For over 70 years they have been recognized the leaders because they do better work, do it easier, do more of it, and thus **save hired help.** Exceptionally well made—durable. Our No. 6 Combined Double and Single Wheel Hoe, Hill and Drill Seeder, shown here, is the most complete tool made. 1908 catalog free.

**BATEMAN MFG. CO. Box 120G Grenloch, N. J.**

## DO YOUR POST SETTING

with the **fast-digging** Iwan Post Auger and get it done in a jiffy. The Iwan Auger bores **right** into **dry dirt, hard clay** or **gumbo.** Digs **twice** as fast as any other auger and saves its cost in **two** days. Easy to unload. Makes hard work **easy.** The

**IWAN POST AUGER**

**Free Book for You**

is scientifically made from **hardest tempered steel.** Has **sharp, interlocking double blades** that **stay** sharp. Lasts a **lifetime.** Guaranteed to work **faster** and **easier** than any other or money promptly refunded.

Send us your name right now—**today—for** our new, FREE Booklet—**"Easy Digging."** Tells how thousands of people dig post holes and **wells** with the low-priced Iwan Auger. Address

**IWAN BROS., Dept R, Streator, Ill.**

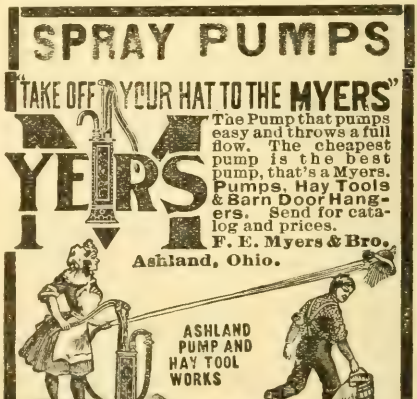
## THE "BEST" LIGHT

MAKES and burns its own gas. Produces 100 candle power light—brighter than electricity or acetylene—cheaper than kerosene. No dirt. No grease. No odor. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog. Do not delay.

**THE BEST LIGHT CO.**
**306 E. 5th St., Canton, Ohio**

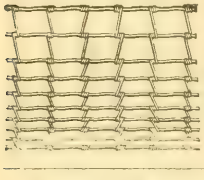
## SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"




The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. **Pumps, Hay Tools & Barn Door Hangers.** Send for catalog and prices.

**F. E. Myers & Bro., Ashland, Ohio.**



## WIRE FENCE 29c

**48-in. stock fence per rod only**

Best high carbon coiled steel spring wire. Catalogue of fences, tools and supplies FREE. Buy direct at wholesale. Write to-day.

**MASON FENCE CO., Box 88 Leesburg, O.**

## LET ME SHOW YOU

how easy it is for you to build your own Incubators and Brooders with my **Free Plans.** I furnish all parts you can't make. Thousands doing it—not a single failure. Send today for **my free Book of Plans and Catalog.**

**H. M. SHEER CO., 242 Hampshire St., Quincy, Ill.**

## WHITEWASHING

and disinfecting with the new

**"Kant-Klog" Sprayer**

gives twice the results with same labor and fluid. Also for spraying trees, vines, vegetables, etc. Booklet free. Address

**Rochester Spray Pump Co. 32 East Av., Rochester, N. Y.**

# HIDES ARE TOO VALUABLE TO SELL

Your horse and cow hides will be worth more to you made up into Fur Robes, Coats, Mittens, etc., than the little money the butcher will pay you for them. A coat like we will make for you from one large hide or two small ones, for from $9.50 up, will last for years; be water, moth and wind proof, and will keep you snug, warm and dry in the coldest, wettest weather. Robe lined with best plush from $7.00 up.

***No matter where you live WE WILL PAY THE FREIGHT on all hides sent to us to be made into Coats and Robes.***

Any color looks well. Our process of tanning makes the skins soft and pliable, and the finished coat or robe will be so handsome it will be a surprise to you if you never saw one of our cow or horse hide garments before. We guarantee workmanship and complete satisfaction—are the largest firm in the country tanning, manufacturing and selling direct to consumer. Don't sell a hide, but write to us for our 40-page catalog giving full particulars and showing the various styles of fur goods we make. It's **FREE**—write for it today.

**NATIONAL FUR and TANNING CO.,**
**119 Peeler St., Three Rivers, Mich.**

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# The BURPEE IDEA

is "to try all things, hold fast to those that are good,—and then make them better!" If you would have pleasure or profit from your garden you should plant

## the BEST SEEDS that Can be Grown!

Shall we mail you a copy of **"The Leading American Seed Catalog"?** It is an elegant book of 172 pages and is mailed only to those who can appreciate the **BURPEE QUALITY in Seeds.** Most Important Novelties for 1908—sixteen of which are shown painted from nature. **Write TO-DAY!**

**W. ATLEE BURPEE & CO., Seed Growers, PHILADELPHIA, PA.**

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# SIX HARDY BLIZZARD BELT FREE EVERGREENS

To prove that our EVERGREENS are HEALTHY, HARDY and Vigorous, we offer to send SIX fine two-year-old trees, entirely FREE OF CHARGE, to every property owner who will answer this advertisement. Mailing expense 5 cts., which send or not, as you please. A postal will bring them and our catalogue which contains many COLORED PLATES of our BLIZZARD BELT FRUITS; SPECIAL BARGAINS and a mine of valuable information for fruit growers. We want to become acquainted with you, and it will pay you to get into touch with our HARDY "BLIZZARD BELT" stock and our liberal manner of doing business. THIRTY-EIGHT years' experience in growing HARDY "BLIZZARD BELT" trees. Write to-day.

**THE GARDNER NURSERY COMPANY,**
**26 Nursery Ave. Osage, Iowa.**

# Do You Love Flowers?

IF SO I want to send you my FLORAL GUIDE, brim full of good things, also a Gift Package of my best seeds—ASTER, PETUNIA PANSY PINK AND VERBENA—enough for five fine, big beds. Write me a letter at once (**not a postal**) and the GUIDE and Gift are yours for the asking. **GEO. W. PARK, B4, LaPark, Pa.**

☞ **SPECIAL.**—Park's Big Surprise Package of Mixed Seeds (1000 sorts old and new) also a year's trial of PARK'S FLORAL MAGAZINE, a charming, illustrated floral monthly, bright as a Marigold—all extra for 10 cts. Enclose it in your letter, and they will go with the Gift Package. No dime would yield you more pleasure. If not satisfied I'll gladly return it. 3 lots 25c. Club with friends.

ROSES GUARANTEED TO BLOOM

## No risk in buying roses

under our guarantee-to-bloom-plan. Money back for those that fail. Your simple word is all the proof we require.

How can we give such an extraordinary iron-clad guarantee? It's all explained in our 136-page color plate "Floral Guide." Write for it to-day—free.

**5 Quick Blooming Roses, 50c**

All guaranteed to bloom this year—or your money back. All thrifty growers and profuse bloomers.

**Champion of the World** (rosy pink);
**Clotilde Soupert** (creamy white with rose centre);
**Alliance** (bright golden yellow; shell pink centre);
**Cornelia Cook** (white tinged with rose);
**Princess Hohenzollern** (deep satiny red).

Every rose labelled and every rose guaranteed to bloom this season. Order now and we will ship prepaid **at proper planting time.** *This advertisement will not appear again.*

Don't forget to write for **"Floral Guide."** Contains descriptions and helpful cultural directions not only of roses, but hundreds of other choice flowers and plants. It is free.

The Conard & Jones Co.
Growers of The Best Roses in America
Box 29 B, West Grove, Pa.

Send for a FREE Three Months Trial to America's leading fruit paper, The Fruit-Grower, and we will mail booklet telling how to get a tree of Delicious Apple and a vine of Banner Grape, FREE. Two of the best fruits ever introduced, hardy all over the country, finest quality. Delicious Apple sold last season at $6 a box. If you have only a few trees or plants you need this paper. Tells all about fruit—how to plant, cultivate, prune, spray, pack, market. Regular price $1.00 a year, and two new fruits included free, but will make special offer if you answer this ad.

**THE FRUIT-GROWER, Box 307, St. Joseph, Missouri**

Send your paper three months FREE on trial, after which I will notify you to stop or become a subscriber.

Name _____

Town _____ State _____

## EVERY HOME

should be adorned with **Palms** and other leaf and flowering plants. We have 44 greenhouses full. Also have hundreds of carloads of **Fruit and Ornamental Trees, Shrubs, Roses, Plants, Vines, Bulbs, Seeds.** Rarest new—choicest old. Mail size postpaid, safe arrival and satisfaction guaranteed. Larger by express or freight. Direct deal will save you money; try it. **Elegant 168-page Catalogue FREE.** 54 years. 1200 acres. 44 greenhouses.

**The Storrs & Harrison Co., Box 140, Painesville, Ohio**

**FRUIT TREES $5**

**Freight Paid, Per 100**

Free from disease; all fumigated before shipping—Apple, Peach, Plum, Pear, Cherry, Carolina Poplar. Order here. Catalog Free.

**RELIANCE NURSERY CO.,**
Box 816, Geneva, N. Y.

Seven splendid new varieties hardy Northern grown apples. Specially adapted to the Northwest. Winners of Wilder Medal, highest award in U. S. Rapid growers, big yielders, good keepers and shippers. Money makers for fruit growers. Also,

**NORTHERN GROWN**

shade and ornamental trees for group, specimen, or windbreak planting. Especially for locations where only hardy stock will thrive. For 5c for postage and packing, we will send beautiful Hybrid Perpetual Rose and illustrated catalog with full description and prices free. **Charles City Nursery & Orchard Co., Box 20, Charles City, Ia.**

# GOOD SEEDS

## THE BEST EVER GROWN

Prices lowest of all. Postage paid.

**A lot of extra packages given free with every order of seeds I fill.** Send name and address for my big catalog. Over 700 engravings of vegetables and flowers. **FREE**

**R. H. SHUMWAY, Rockford, Illinois**

# TWO MONEY MAKERS

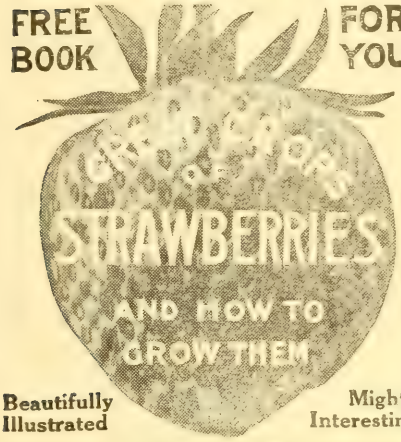
**SCARFF'S SMALL FRUITS**

and bees are an ideal combination for bee-keepers or farmers. Order early and plant a generous quantity of these fruits. The bees pollenize them, making them produce in luxurious abundance, and at the same time increase amount and value of honey.

**3 Blackberry Bushes Free.** I want to prove how well-rooted, strong and vigorous my plants are. I will send **free** 3 fine blackberry plants, if you write for my new 1908 free catalog. Some of my customers are making over **$350 an acre** with my plants. With bees you can increase that profit considerably. I sell a large variety of nursery stock, grown on an 800 acre farm. Write me to-day.

**W. N. SCARFF, New Carlisle, Ohio**

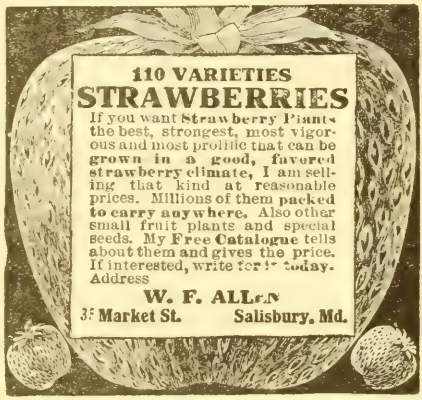
**FREE BOOK FOR YOU**




**Beautifully Illustrated** **Mighty Interesting**

If you want to know how to grow big crops of big red strawberries and to get big prices, send for **our 1908 book. It tells all about soil preparation, setting, mating, pruning, cultivating, spraying, mulching, picking, packing and marketing. All of these essential features and many more are explained in such a way that you can't go wrong. It was written right out in the strawberry field by a man who has made a fortune growing strawberries, and he tells you just exactly how he does things. Send your address. That's all. The book is free.**

**R. M. Kellogg Co., Box 400, Three Rivers, Mich.**



**110 VARIETIES**

**STRAWBERRIES**

If you want **Strawberry Plants** the best, strongest, most vigorous and most prolific that can be **grown in a good, favored strawberry climate,** I am selling that kind at reasonable prices. Millions of them **packed to carry anywhere.** Also other small fruit plants and special seeds. My **Free Catalogue** tells about them and gives the price. If interested, write for it today. Address

**W. F. ALLEN**
**35 Market St. Salisbury, Md.**

A beautiful colored plate of our

**New Eaton**

**Red Raspberry**

and our strawberry catalog of valuable information about varieties with instructions for beginners. Free to all.

**THE FLANSBURGH & POTTER CO., Leslie, Michigan.**

# FERRY'S SEEDS

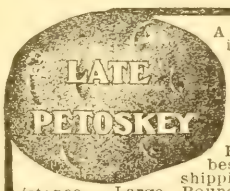
For freshness, purity and reliability, **Ferry's Seeds** are in a class by themselves. Farmers have confidence in them because they know they can be relied upon. Don't experiment with cheap seeds—your surety lies in buying seeds sent out by a conscientious and trustworthy house.

**Ferry's Seed Annual** for 1908 is FREE. Address

**D. M. FERRY & CO., DETROIT, MICH.**

**The Best Strawberries**

grow from Farmer's plants. Introducer of "Oswego" strawberry and "Plum Farmer" raspberry. Fruit plants, all kinds. Catalog free. **L. J. Farmer, Box 808, Pulaski, N. Y.**




A new potato, originated right here in the cold North, where all the best potatoes come from. Rank Grower, Prodigious Yielder. Full of new life and vigor. Handsomest and best general crop and shipping Potato in existence. Large, Round, Smooth, White.

**50¢ Worth Seeds FREE**

Cooks dry and mealy. Delicious flavored, even when unripe. For 25c (stamps or coin), we will mail one pound of **Late Petoskey,** our 1908 catalog of **Northern Grown Seeds,** and a coupon good for **50c worth of free seeds.** Catalog alone, mailed free. Write today. Supply very limited.

DARLING & BEAHAN,
Box 313, Petoskey, Michigan.

**BOOK "More Corn to the Acre" FREE**

if you send names of 5 corn or stock growers and 10c for a year's trial to Farm & Stock, the only monthly devoted to corn and live stock. Regular rate $1, but we make this offer to get list of wide awake growers.

**Farm & Stock, 824 Charles, St. Joseph, Mo.**

# TREES

**SHEERIN'S** Trees are fruitful Trees. They are propagated on honor. Sold on their merits. Guaranteed absolutely free from all disease, and Fresh Dug. Why not plant clean, healthy Trees when they cost no more than those infested with Scale? Our 80-page catalog will tell you more about it. It is full of good information, free to everybody.
**SHEERIN'S WHOLESALE NURSERIES, :: DANSVILLE, N Y.**

## FIFTY MILLIONS OF

Hardy Evergreens $4.00 and up per 1,000. 50 wonderful bargain lots for 1908, quality the highest, prices the lowest of all, $1.00 to $10.00 per 100 prepaid. Pedigreed trees, not wild, but **NURSERY GROWN AND GUARANTEED.** Also full line Fruit, Forest, Shade, Ornamental Trees and Shrubs. Get my Free Catalog and Bargain Sheet. Don't buy till you've seen it. A beautiful Red Cedar Tree free with every order.
**D. Hill, Evergreen Specialist, Box 87, Dundee, Ill.**

## 850,000 GRAPEVINES

**69 Varieties.** Also **Small Fruits, Trees, &c.** Best Rooted Stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive price-list free. **Lewis Roesch, Box A, Fredonia, N.Y.**

## Peach Trees

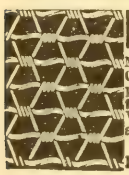
Large stock; all straight, healthy, well-rooted trees *Free catalog.* Freight paid. *Agents wanted.* **Special Prices to clear ground.**
**W. T. Mitchell & Son, Beverly, O.**

## DEMING Sprayers

make money for the users. Best made—solidly constructed. Not injured by chemicals.

Nineteen Eight Catalogue and "Expert Testimony" will interest you.

THE DEMING CO., 545 Depot St., Salem, O.
Henion & Hubbell, Agents, Chicago, Ill.



## FENCE *Strongest Made*

Made of **High Carbon Double Strength** Coiled Wire. **Heavily Galvanized** to prevent rust. Have **no agents.** Sell at **factory prices on 30 days' free trial.** We pay **all freight.** 37 heights of farm and poultry fence. **Catalog Free.**
**COILED SPRING FENCE CO.**
Box 101 **Winchester, Indiana**

## FIX YOUR ROOF

**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

**Roof-Fix** **The Perfect Roof Preserver,** makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our **free roofing book** tells all about it. Write for it today
**The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.**

## A New STRAWBERRY

We have been growing and selling strawberry-plants in this town over thirty years. We introduced Brandywine, Kitty Rice, Senator Dunlap, Wm. Belt, and others of value. . . Now we are bringing out the **Highland** which we expect to take the lead as a **Money-maker** Let us tell you about it and forty others. It will cost you but a postal card.
**M. Crawford Co., Box 1004, Cuyahoga Falls, Ohio**

## ALSIKE CLOVER SEED

Medium red, and large; also timothy seed for sale. Write for samples and prices. Catalog of apiary supplies free. **F. A. SNELL, Milledgeville, Carroll Co., Ill.**

## Paint Without Oil

**Remarkable Discovery that Cuts Down the Cost of Paint Seventy-five Per Cent.**

**A Free Trial Package is Mailed to Every One Who Writes.**

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Please send **Poultry Profits** Book that tells all about Raising Poultry for Market and Making More Egg Money—all about the famous Sure Hatch Incubator and how it is sold on **unlimited trial, freight paid, under 5 years' guarantee.** I am sincerely interested and not writing merely out of curiosity. I want you to tell me how to make the most money out of chickens, ducks and turkeys.

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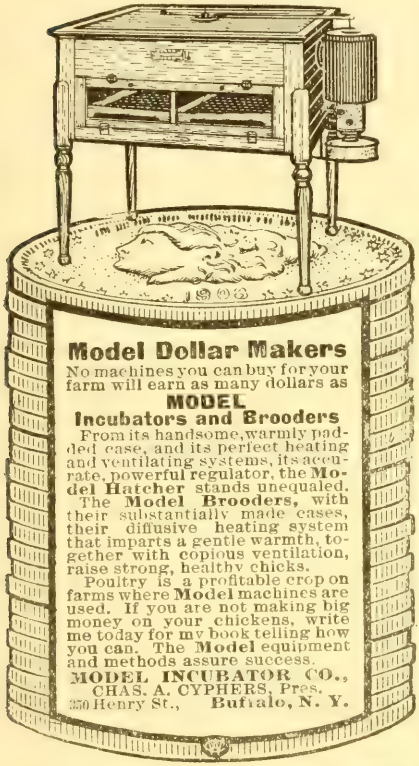

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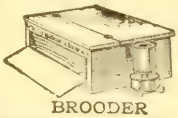

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The safe way to buy an Incubator is on a **Real Free Trial.** Invincible Hatchers are sold that way and results guaranteed. Brooders, Poultry Houses and supplies all at very low prices. **224-page book Free.**

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A substantial practical incubator, 26 inches long, 21 inches wide, 14 inches high. Triple walls, hot water heat, aluminum coated tank, automatic regulator, nursery. With brooder $11.45. To points west of Rockies, incubator, $9.85; with brooder, $14.70. Order today. Money refunded if not as represented. 80-page catalogue free. Established 1867.

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**125 Egg Incubator and Brooder Both For $10**

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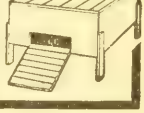

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Is used indoors with the sash, and outdoors with the galvanized covered doors.

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Because of leg weakness ?
Because of sour crop and bowel trouble ?
Because the chicks pile up and smother each other ?

There must have been unnatural conditions that caused your losses, and it is to your interest to look into your brooding equipment.

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It's warm dry floors that causes leg weakness; the chicks feet dry up. With the mother hen the chicks would be running on cool, moist earth, and their feet would be cold, but strong and stocky.

You will also agree that the chicks breathing warm air, as they do under the old-fashioned hovers, is what causes sour crops and bowel trouble.

These unnatural conditions do not exist in the Root Brooders, as there the chicks have a cool floor to run on, and there is no hover; the air is not confined; it's free and continually changing.

**Our 1908 Catalog gives an accurate and thorough description of the Root Brooders, and will be sent to you upon request.**

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# ROOT SHELF INDOOR OUTDOOR CONVERTIBLE BROODERS

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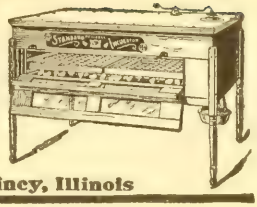

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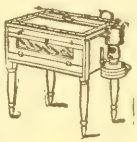

to operate and exhibit the Humo Incubator; only perfect hatcher made. 90 days free trial; 20 years guarantee. Hatches every fertile egg; no experience needed. Sample Incubator free to good agents. **120 Egg Defiance Incubator $6.** Catalogue free.

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We issue the best book ever written on incubators—written by a man who has spent 26 years in perfecting them—by the man who made the Racine. It tells facts that you must know to get the right incubator. Don't buy without reading it, for the book is free. **We Pay the Freight.**

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Every Farmer and Chicken-raiser Should Read It.

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Monthly, 50 to 100 pages, its writers are the most successful Poultrymen and women in the United States. It is

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nicely illustrated, brimful each month of information on How to Care for Fowls and Make the Most Money with them. In fact so good you can't afford to be without it. Price, 50 cents per year. Send at once for free sample and **SPECIAL OFFER TO YOU.**

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*Our specialty is bee literature.* Make a list of the bee books and journals you intend buying this year at publishers' prices. Deduct 10 per cent; or if the total is more than $10.00, 15 per cent. Send us the net amount and we will send the books prepaid. Catalog and price list of bee-supplies, bee-books, and honey free.

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## Classified Advertisements.

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Wanted, Situations.

WANTED.—Position by young man of good habits to work with bees the coming season. Six years' experience. J. W. BARKER, Chester, Conn.

A young apiarist, before starting business for himself, intends to spend a season, as assistant, in a large apiary of Ontario or the Eastern States. Address A. O. COMIRE, St. Francois du Lac, Yamaska Co., Que.

## Help Wanted.

WANTED.—Bee-man for season beginning April 1, in extracting-apiaries. State experience and wages, with board, expected. APPLETON & BAGNALL, Simi, Cal.

WANTED.—An active single man, who is handy with carpenter tools, to make himself generally useful on a 30-acre farm when not working with the bees. Will pay $300 a year, good board, bed, and washing to the man who is willing to try to earn it. H. C. AHLERS, West Bend, Wis.

WANTED.—Apiarist to help with 200 stands of bees, all of which are run for extracted honey. Prefer a young man who has had experience in Cuba or some other tropical country. Will pay $25 00 and board per month until Oct. 1. Fare from New York, New Orleans, or Havana, first class, $52.50; second class, $37.50; from Santiago de Cuba, $10.00 less. W. J. YOUNG, Arecibo, P. R.

## Post Cards.

Learn to make and deliver post-cards to sitter in ten minutes at fairs, carnivals, etc. We teach you every thing by mail, and furnish outfits very cheap. See our offer in Feb. 1 and 15 issue. ACME POST-CARD CO., Medina, Ohio.

Post Card Photos.—Any one can make without a camera, from another photo; no knowledge of photography needed but my instructions at 50 cts. E. O. WALTZ, Medina, Ohio.

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Why not beautify your home by the use of plants? They give the finishing touches, and are very attractive. We have the finest collection of house and garden plants grown by any florist. Write for price list; it's free. HAMMERSCHMIDT & CLARK, Dept. A. Florists, Medina, Ohio.

## Poultry Offers.

FOR SALE.—R. C. Rhode Island Red eggs, $1.00 for 15. S. C. WRIGHT, Rt. 6, Medina, O.

FOR SALE.—Fine R.C.R.I.Red, W. Wyandottes, and Barred Rock eggs only $1.75 per 15. C.FAJEN, Alma, Mo.

FOR SALE.—White Rocks, cocks and cockerels. Write your wants. DR. C. L. VAN OSDOL, Dillsboro, Ind.

FOR SALE.—White Wyandottes, 15 eggs, 75 cts.; 30, $1.25. Uncle Sam potato, very productive; 1 pound by mail, 30 cts. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—Eggs, White Wyandotte, $1 per 15; $6 per 100. White Holland turkeys, $2 per 9. FRANK C. PELLETT, R. D. 4, Atlanta, Iowa.

FOR SALE.—Indian Runner duck eggs from choice stock, $1.00 per 12; $4 00 per 55; $6.50 per 100. KENT JENNINGS, Mt. Gilead, O.

FOR SALE.—Silverlaced and White Wyandottes. Single and Rose Comb R. I. Reds, choice stock, eggs $2.00 per 30. CHAS. F. L. CLEMONS, Rt. 3, Davenport, Ia.

FOR SALE.—White Wyandottes. Egg-record strain: standard-bred, farm-raised, unlimited range; healthy, vigorous, prepotent. Eggs, $1.50 per 15. F. H. TRENT, Hollybrook Farm, Rockford, Tenn.

## For Sale.

FOR SALE.—Opaline honey-jars, all kinds; send for price list. HAROLD E. SHORE, Germantown, Pa.

FOR SALE.—Strawberry-plants. Send for catalog. BUSKIRK BROTHERS' NURSERY, Independence, Ohio.

FOR SALE.—Vermont bee-keepers should have my 1908 price list. C. J. LAMB, East Calais, Vt.

FOR SALE.—Homestead farm crops in their season, consisting of honey, grapes, pears, apples, etc. C. J. BALDRIDGE, Kendaia, Seneca County, N. Y.

FOR SALE.—80 lbs. choice unhulled white-sweet-clover seed. First M. O. for $7.00 gets it. GOULD'S FRUIT FARM, Crawford, Miss.

FOR SALE.—Beautiful long-haired Angora and Persian kittens, some white and other colors. Prices low. Stamp for description. MRS. J. F. SKEES, Marion, Ohio.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cts. each, postpaid. FRANK ALEXANDER, Delanson, N. Y.

FOR SALE.—Two hundred 8-frame dovetailed hives (Root's make), 200 5-gal. honey-cans in cases (new) at Lovelock, Nevada. Address C. K. ERCANBRACK, Watsonville, Cal.

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200 gummed labels for 10 cts., printed with name and address. Good quality envelopes printed to order, 50 for 20 cts. Samples free.
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FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
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FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. Choice melilotus (white sweet clover) seed for sale at eight cents per pound.
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FOR SALE.—A perfectly equipped apiary in foothills, 30 miles from coast; 150 colonies; excellent location for honey; 160 acres of land—40 tillable, the rest good grazing; fine springs; perfect locality for the health-seeker Price $1700. Address
J. D. BENNETT, 629 Clay Ave., San Diego, Cal.

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WANTED.—The address of some person who would let his bees on shares. California preferred. State number of colonies and condition.
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WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
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WANTED.—To buy basswood, clover, and amber extracted honey for cash. Best prices paid. Send sample, and quote price delivered in Preston.
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Extra honey queens and choice mountain honey. Francis J. Colahan, Bernardo, San Diego Co., Cal.

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TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular, order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

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CLIMATE IS A MOST IMPORTANT FACTOR in connection with the profits, as well as pleasure, to be derived from your location.

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Dept. F, Portsmouth, Virginia.

CARTONS FOR OUNCE CAKES OF BEESWAX.

We can supply cartons for one-ounce cakes of beeswax, printed with name and address blank, at 35 cts. per 100; 250 for 80 cts.; 500 for $1.50; 1000 for $2.75; by mail, 15 cts. per 100 extra These prices will also include the large carton to contain 32 of the small ones. The complete package weighs 2 lbs., and, when filled, sells to the dealer at $1.00. They retail the cakes at 5 cts. each. Retinned molds for molding ounce cakes cost 35 cts. per dozen; by mail, 40 cts; for two-ounce cakes, 40 cts.; by mail, 50. We do not have cartons to fit the two-ounce cakes. To print your name and address on the cartons will add, 250 or less, 50 cts.; 500, 75 cts.; 1000, $1.00.

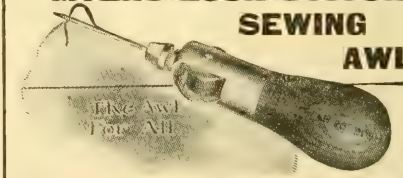
CLOVER SEEDS.

There has been a sharp advance in clover seed, so that the best price at which we can offer Medium Mammoth or alsike seed, choice, is $12.00 per bushel; half bushel, $6.25; peck, $3.25; per lb., 23 cts.; by mail, 32 cts. per lb. Alfalfa seed will have to go at the same price. Medium grades of seed may be furnished a little cheaper. Write for sample and price if interested. Strange as it may seem, white-clover seed is now cheaper than other kinds, and can still be furnished at $10.00 per bushel; $5 25 per half bushel; $2.75 per peck; 20 cts. per lb. Crimson or scarlet clover will be furnished at $8.75 per bag of two bushels; $4.50 per bushel; half bushel, $2.40; peck, $1.25; 1 lb., 10 cts.; by mail, 20 cts. Unhulled white-sweet-clover seed at $11.00 per 100 lbs.; $3.00 for 25 lbs.; $1.30 for 10 lbs.; 15 cts. per lb.; by mail, 25 cts. Hulled seed, when we have it, 7 cts. per lb. extra.

COLD-FRAME OR HOT-BED SASH.

We are receiving some nice orders for these sash, and we believe that, if more of the truck-gardeners understood how good they are, and the low price at which they may be had, we should be swamped with orders. We have not seen as low prices quoted by anybody else, not even the cut-rate mail-order houses, as we are making on these. Some of our readers may know of greenhouse-men in their neighborhood who do not take this journal, and may do them a favor by calling their attention to our prices. Cypress hot-bed sash, 3½ feet by 6 feet, for four rows of eight-inch glass, with hard-wood round rod crosswise through the bars midway between the ends to help space the bars and hold them secure, shipped K. D., 90 cts. each; 5 for $4 25; 10 for $8.00. Put together, 10 cts. each more, not painted. If painted, add 10 cts. for each coat of paint. If glazed with 8 x 10 glass, add $1.00 per sash; 8 x 10 glass, $2.40 per box: 5 boxes at $2.30, or 10 boxes at $2.20.

MYERS LOCK STITCH SEWING AWL



is the most practical little device ever invented, for mending harness, shoes, canvas, carpets, etc. Sews like sewing machine. Every family needs one. Sample ready to use $1 postpaid. Book C. C. A. Myers Co., 6537 Woodlawn Ave., Chicago

# Taylor's Queens for 1908

J. W. Taylor & Son have made a specialty of breeding for the best honey-gatherers. Our three and five banded Italians can't be beat, or haven't been, as honey-gatherers. Untested, $1.00 each, or $9.00 a dozen; tested queens, $1.25 each, or $12.00 a dozen. Select tested queens, $1.50 each; breeders, the very best, $3.00 to $5.00 each. Send all orders to

**J. W. TAYLOR & SON, Beeville, Bee Co., Texas.**

# Queens FOR 1908.

Finest Goldens bred in America. Send for my latest circular and prices — "and be convinced."

**DANIEL WURTH, . PITKIN, ARK.**

# Bee and Poultry Supply House

We are now in position to offer the bee-keepers of New York and Vermont a full line of Bee and Poultry Supplies, etc., including Incubators, Brooders, Rochester Spray Pumps, Asphalt Roofing, etc.; also a general line of Hardware, Paints, and Oils. Will be pleased to send the different catalogs on request.

**A. H. REEVES & CO.,**
**411 Main St, Watertown, N. Y.**
**Bell Phone, 11-I. Citizens' Phone, 381-0.**

# Bee-Keepers

## TAKE NOTICE.

Clean, New Supply direct from **Root's Factory** at **Root's Prices.**

**WE BUY CAR LOTS — YOU SAVE FREIGHT.**
Unequaled facilities for prompt shipment to all points in Nebraska, Wyoming, South Dakota, and the West.

**BEES AND QUEENS from the Roselawn Apiaries.**
Send in your orders now for bees and queens. Our orders will be very heavy this spring. Early orders first filled. We are in the market for beeswax and honey. Correspond.

**Bee-Keepers' Supply Co.**
**Geo. M. Plumb, Mgr. 1929 N St., Lincoln, Neb.**

# This Coupon worth 25 Cents!

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

*New Subscribers Only.*

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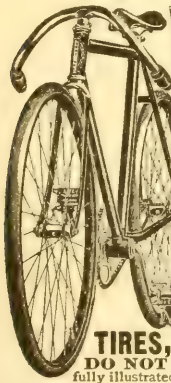
**AMERICAN - BEE - JOURNAL**

A 32-page illustrated 50-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keeper. . . . Best writers.

**It will increase your Honey-money!**

If you will send us your name and address with 25 cents (stamps or coin) together with this coupon, we will send you a trial trip of our journal for 12 months. Order now, and let us begin with this month's fine number. Address

**American Bee Journal, 118 W. Jackson, Chicago, Illinois**



# WANTED--A RIDER AGENT IN EACH TOWN

and district to ride and exhibit a 1908 Model **"Ranger"** bicycle furnished by us. Our agents everywhere are making money fast. *Write for full particulars and special offer at once.*

**NO MONEY REQUIRED** until you receive and approve of your bicycle. We ship to anyone, anywhere in the U. S. *without a cent deposit* in advance, *prepay freight*, and allow **TEN DAYS' FREE TRIAL** during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle you may ship it back to us at our expense and *you will not be out one cent.*

**FACTORY PRICES** We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save $10 to $25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from *anyone* at *any price* until you receive our catalogues and learn our unheard of *factory prices* and *remarkable special offers* to **rider agents.**

**YOU WILL BE ASTONISHED** when you receive our beautiful catalogue and study our superb models at the *wonderfully low prices* we can make for 1908. We sell the highest grade bicycles for less money than any other factory. We are satisfied with $1.00 profit above factory cost. **BICYCLE DEALERS,** you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

**SECOND HAND BICYCLES.** We do not regularly handle second hand bicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from $3 to $8 or $10. Descriptive bargain lists mailed free.

**TIRES, COASTER-BRAKES, single wheels, imported roller chains** and **pedals,** parts, repairs and equipment of all kinds at *half the usual retail prices.*

**DO NOT WAIT,** but write today and we will send you **free** by return mail our **large catalogue,** beautifully illustrated and containing a great fund of interesting matter and useful information; also a *wonderful proposition* on the first sample bicycle going to your town. It only costs a postal to get everything. **Write it now.**

**MEAD CYCLE COMPANY Dept. P113 CHICAGO, ILL.**

# Mr. Bee-keeper,

Was 1907 a POOR YEAR for you?

It was a GOOD YEAR for users of

# DADANTS' FOUNDATION.

One dealer used 14,000 pounds.

Another dealer used 7,250 pounds. Another dealer used 4 500 pounds. Another dealer used 4,500 pounds.
Another dealer used 6,000 pounds. Another dealer used 4,500 pounds. Another dealer used 3,000 pounds.

*Thousands of pounds sold to the bee-keeper direct, or worked up for him out of his beeswax.*

The DEALER likes DADANT'S FOUNDATION because the bee-keeper likes it.

The bee-keeper likes it because his BEES like it.

The BEES like it because it is exactly like their own comb, so PURE and SWEET and CLEAN.

DADANT'S FOUNDATION is the Standard because it is the BEST.

Wax worked into foundation. Send for our Supply Catalog.

**DADANT & SONS, HAMILTON, ILL.**

# SUPPLIES FOR BEE-KEEPERS

**Every thing you want; all made by us in our own factories--at LOWEST PRICES.**

**The American Bee-keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

# W. T. FALCONER MFG. CO.

DEPARTMENT G, :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# Every Reader of This Paper Will Profit by Writing a Postal for This Free Book Showing How to Double Your Potato Money

We **can't**, and we **don't want to try** to tell you in this small space all the good, practical points about how to **increase** your **potato profits** because we want **YOU** as a **practical man** to send us your **name** and **address** and let us mail you this **valuable** and **interesting** little book—**free.**

That's worth your while.

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You'll get the book promptly—free.

It tells you the one way to plant potatoes cheapest—how to save seed and cost of fertilizer—how to properly care for your potato field to get best crops easiest with the famous Acme Hand Potato Planter which costs only one dollar complete, express charges prepaid.

## Read What Others Say

**Secretary Robt. W. Furnas** of State Board of Agriculture, Brownville, Neb. says. "I have tested the Acme Hand Potato Planter. To be brief, it fills the bill. It is a wonderfully convenient and valuable little implement."

**Agricultural College,** Lansing, Mich. says: "Your Acme Hand Potato Planters have outdone our expectations. They will find favor among **practical farmers,** as they are simple, cheap and save a great deal of labor and do better work. **Please send us four more for Spring work."**

Our Free Book tells you what others say like J. H. Brown who says: "The Acme is more perfect in its actions than the costly two-horse planters. I planted one acre without stopping and faster than one man could cut the seed. I shall hereafter use the Acme in preference to the hoe or trench method. There is more fun than work in using it."

## You'll Say This Too

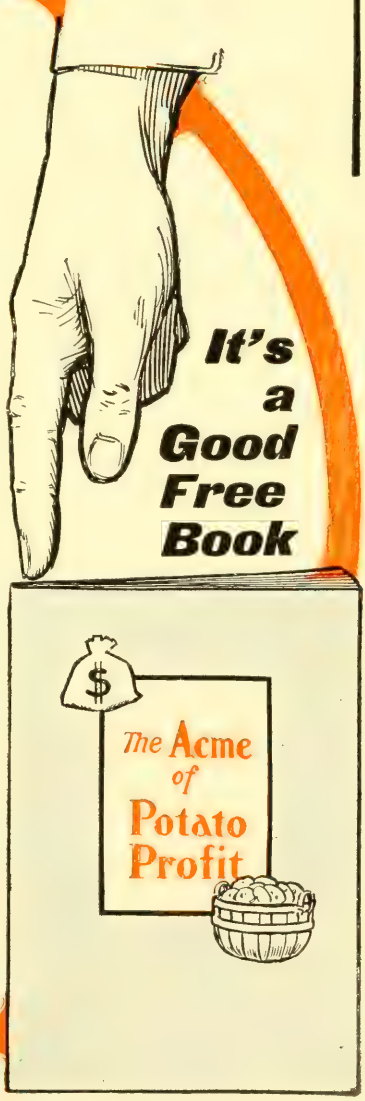
You can't beat that kind of facts. You'll find they **are** facts and you'll say so too.

We only ask you to write **a postal** for this book so you can **decide** for yourself whether you want to send us only a dollar bill so we can send you an **Acme Hand Potato Planter** all ready to use complete, with express charges prepaid.

When you do send for an **Acme,** it's got to satisfy you by the work it shows you it will do, or we return your dollar at once if you simply write us and say so.

Write now for this book anyway. Investigation this way will save you many a day's time—and many a dollar in seed. In fact, **planting** with an Acme makes potatoes **grow much larger crops** and this free book tells you why. So write for it. Address

**Potato Implement Co.**
**Box 520**
**Traverse City, Mich.**



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## 5,000 Building-Material Bargains in Oak, Cypress, Maple, White and Yellow Pine, at HALF DEALERS' PRICES.

This catalog is an authority on Millwork Styles and tells how you can Build, Repair, or entirely Remodel your house at a saving of at least **half** the usual cost. We sell the output of our Sash, Door, and Millwork Factory direct to Home Owners, Carpenters, Contractors, and Builders everywhere at Factory Prices. Our goods are Guaranteed to be up to the High Standard of the Official Grade adopted by the Sash, Door, and Blind Mfrs.' Ass'n of the Northwest. $300,000 behind our Guarantee. Satisfied customers everywhere.

**We Ship Anywhere from Our Mammoth Plant in Davenport, Iowa. Quality, Safe Delivery, and Satisfaction Absolutely Guaranteed.**

## Save Money on Stair Work

**Latest Styles in Finest Hard Woods**

**50 Per Cent Below Usual Prices**

Our Stair Department furnishes Estimates which enable you to build a complete flight of stairs from our stock at a great saving. We furnish all stair material in Plain Red Oak or Yellow Pine; ⅔ the cost of stair work can be saved by using our regular designs which are correct in every detail. Write for FREE Estimate.

**Oak Stair Complete, $28.59** Dealer's price, $80

Including Steps, Risers, Starting Newel, Angle Newels, Balusters, Rail, Face, and Wall Stringers.

## 525 Styles of Doors

**50% Below Regular Prices**

Largest stock of High-grade Doors in America. All doors are made of air-seasoned lumber with hardwood dowel-pins, glued with imported glue, pressed together by heavy steam-power press. Prices, 80c to $16.

Our big line of Soft-Pine Doors embraces every style in demand.

We save you $3.00 to $5.00 each on Hardwood Doors.

Most complete and artistic line in the country. *Veneered Oak Doors*, $3 25 and up. *Art Front Doors* of pleasing design and rich appearance, $1.70 and up. SEND FOR COMPLETE CATALOG.

**Write and Get Our Estimate on Doors**

## Hardwood Floor for room 10x12 ft. $7.68

Genuine Red Oak, ⅜ in. by 1½ in.—Seasoned, Matched, ready to lay. Price per 100 lineal feet, random lengths, wrapped in paper, quality guaranteed, 80c. Cheaper and better than a good carpet. Sanitary—artistic—durable. Millions of feet in stock for quick shipment.

**Send Room Dimensions for FREE ESTIMATE**

## Beamed Ceilings

**for ordinary-sized Dining-room or Reception Hall $15**

Just as beautiful and lasting as ordinarily cost $125 to $200. Send size of your room and get detail showing construction, design, net cost.

## Hardwood Interior Finish at Less Than Usual Cost of Pine

We make it possible for you to finish your home or any particular room in beautiful hard wood at less than you would pay your local dealer for White or Yellow Pine. We are able to do this because we make up large quantities and ship direct to the user. Your choice Red Oak, Cypress, White or Yellow Pine. We strongly recommend hard wood, unless you wish to enamel the interior woodwork, in which case White Pine is preferable. We carry every thing in mouldings and interior finish. Send your complete list of materials for Free Estimate.

**Buy Your Entire House Bill From Us**

Send for Free Book of Building Plans

## Windows Half Price

All styles—all sizes, with and without glass. Plain Rail and Check Rail Windows; Barn, Attic, and Cellar Sash. Art Windows in beautiful designs. Our prices save you 50 to 75 per cent. Quality and safe delivery guarant'd anywhere.

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Your banker or any banker in Davenport will tell you we are reliable and responsible. See our Commercial Agency rating.

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# Gordon, Van Tine Co. 743 Case St. Davenport, Iowa

# Gleanings in Bee Culture

*An Apiary in the Caucasus Mountains, Trans-Caucasia, Southeastern Russia.*

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI March 15, 1908 No. 6

# DEEN LOOM

# Flying Shuttle

WHY not put your spare moments to work bringing in extra cash? Some people in your town are waiting for some one to make up their rags into carpets, rugs and portieres.

It's genteel, honest work that any man or woman can do and make good profit at it. Just to prove it, here are the names and addresses of fifteen out of hundreds of people who have woven carpets and rugs at a good profit. They use a **Deen Loom.**

## Good Profits Made At Home

Mrs. C. R. Stover, Bradford, Ohio
Oma Cooper, Dale, Indiana
R. P. McGowan, Piedmont, W. Va.
Mrs. Rob. Record, Seymore, Illinois
Mrs. Henry Clark, St. Anthony, Iowa
Mrs. A. L. Clark, Central Square, N. Y.
Mrs. H. C. Blanahet, New Lathrop, Mich.
Mrs. T. E. Alley, Sylvan Grove, Kansas
Mrs. O. E. Albin, Kearney, Nebraska
Mrs. H. Goebel, West Point, Iowa
Mrs. J. S. Gilbert, Milton Junction, Wis.
Mrs. L. E. Foster, Bedford, Indiana
Mrs. Salanda Gunckel, Osgood, Ohio
Mrs. D. E. Williams, Pickering, Missouri
M. H. Vining, Waterloo, Iowa

Remember these are only fifteen of scores and hundreds who at this moment are hustling out work and getting good money for it.

## You Who Read This

Haven't you often wished for a useful employment by which to make money in your spare hours? No doubt you know of people who would gladly pay you for weaving their rags into carpets and rugs.

It's not only the poorer people that have hand-woven carpets and rugs on their floors, but well-to-do people of city, village and country-side appreciate the handsome and useful products of home-weavers.

By canvassing among your friends you can work up a good business. Profitable, too. Besides, it's done at home with the children, where you can have an eye on everything in house and yard.

## It's Not Hard Work

Weaving with a **Deen Loom** is soon learned. The Loom itself is a simple affair, easily handled, and soon understood. May Vittum, Barclay, Kansas, says:

"I can weave almost twice as much as I could with the old loom. I would not go back to the old one for anything. The new one is faster, easier, and does the best work."

Having a steel frame well-braced, and rigid, it resists the shock and stroke of the shuttle mechanism, remaining solid for years without repairs.

It will accomodate any size rug or carpet demanded.

## What May Be Woven

Any design can be made in any number of colors that taste and fancy may dictate. You can weave rugs, hammocks, all kinds of hand-weaves, carpets, portieres, etc. The materials to use are common carpet warp which can be purchased of any dry goods store; carpet rags, old clothes of any kind, old ingrain and brussels carpets, blankets, or nearly any kind of fabric. Your customers furnish you all material; you do the weaving and get good pay for it.

## A Few Prominent Reasons for Buying

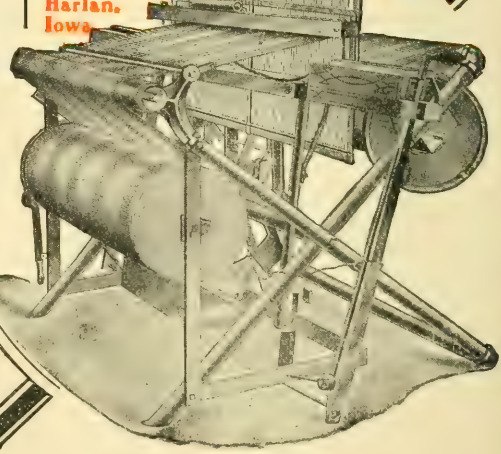
1.—You can make from $2 to $3 a day if you weave 8 hours daily.
2.—You can make from $4 to $10 a week using only part of your time—say evenings after work and an hour in the morning.
3.—We help you personally by letter if you wish. But this is seldom necessary, because we send you simple, detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
4.—The Fly-Shuttle is easily filled, quick to handle, doesn't bother.
5.—The Winding Mechanism and Feed-Governor are new improvements. The latter keeps the warp and weft mechanism within control. It saves much material and prevents hours of thrown-away time used by old-style looms.
6.—It takes up much less room than many other styles. It requires a room but 10 feet square for a complete weaving shop.
7.—We send you everything with the Loom. You can go right to weaving as soon as you get warp and rags.

## You Needn't Pay All At Once

Pay something down. As Loom brings in profits send balance by easy installments.

Fill in the coupon and mail. We'll send our free catalog and a letter about our easy-pay plan.

**THE DEEN LOOM CO., Drawer 100, Harlan, Iowa**



**COUPON**

Deen Loom Co.:— Date.....19....

Please send me your free catalog and detailed explanation of your "Easy Pay Plan" of selling your Deen Loom.

Name.....

Address.....

Town.....State.....

# C. H. W. WEBER

**Headquarters for**

# BEE SUPPLIES

**Distributor of Root's Goods Exclusively, at Root's Factory Prices**

GIVE ME YOUR ORDERS for the **Best Goods Made.** You wi be pleased on receipt of them. You will **save money** by ordering from me. My stock is complete; in fact, I keep **every thing** the **bee-keeper** needs. **Cincinnati** is one of the best **shipping-points** in the Union, **particularly in the South,** as all freight now **goes through Cincinnati.** Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly **free of charge.**

## Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

# C. H. W. WEBER

**Office and Salesroom, 2146-2148 Central Ave.**
**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

INDIANAPOLIS.—Demand for best grade of extracted honey is good, while comb honey is meeting with slow sales. Very little honey is being offered by producers, and jobbers are carrying a very limited stock. Bottled goods in groceries find slow sales, which can be attributed to dull times; but there is another reason—many bottlers are making the mistake of putting out inferior goods. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 16 to 17; extracted white clover, 9 to 10; amber in barrels, slow at 6 to 6½. Beeswax, 28 cents cash or 30 cents in exchange for merchandise. WALTER S. POUDER.
Mar. 7. Indianapolis, Ind.

CINCINNATI.—There has been very little demand for honey the past month. We do not look for a good trade until business in general revives and things all around don a more cheerful air. We quote amber extracted honey at from 6 to 7½ according to the quality and quantity purchased. Finer grades of extracted honey sell at 8 to 10 cents. Comb honey is moving very slowly. There is simply no demand for it. We are asking from 16 to 18, according to the quality and quantity. For good to choice yellow beeswax we are paying 30 cts. per lb. cash, and 32 in trade.
THE FRED W. MUTH CO.,
Feb. 29. Cincinnati, O.

PHILADELPHIA.—Since the holidays honey has been moving very slowly, both comb and extracted, with a very few arrivals from out of town. Comb honey has declined in price, while extracted honey keeps up fairly well, with demand about equal to the supply. We quote: Fancy white comb honey, 16; No. 1 comb honey, 15; amber and off grades, 12 to 13; fancy white in 60-lb. cans, in a small way, 9 to 9½; ambers in cans or barrels, according to grade and quality, sell from 7 cents up. Beeswax, 28. We are producers of honey, and do not handle on commission.
WM. A. SELSER,
Feb. 28. 10 Vine St., Philadelphia.

DENVER.—The demand for comb honey is lighter than usual at this time of year, while the trade in extracted is fairly good. We quote No. 1 white, per case of 24 sections, $3 25; No. 1 light amber, $3.10; No. 2, $2.75 to $2 90; No. 1 white extracted, 9 to 10; light amber extracted, 8 to 9; strained, 6¾ to 7½. We pay 25 cts. per lb. for clean yellow wax delivered here.
THE COLORADO HONEY-PRODUCERS' ASS'N,
March 3. F. Rauchfuss, Mgr., Denver.

CINCINNATI.—The market on comb honey is very dull. There is no demand. We quote white clover at 16; extracted amber, fair demand at 6 to 6¼; water-white sage, brisk at 9½ to 10. Beeswax is selling slowly at $33 00 per 100 lbs. C. H. W. WEBER,
Feb. 29. Cincinnati, O.


# Do we handle Good Hives

Do we handle good —SAY! Just read this letter for an answer to *that* question:

**Central Tennessee Bee-keepers' Association**

Franklin, Tenn., March 2, 1908.

The Fred W. Muth Co., Cincinnati, O.

*Dear Sirs:*—The hives and supplies I ordered from you came promptly to hand, and I have been busy the past week nailing them up. I must say this is the best lot of supplies it has ever been my lot to handle. *They could not be surpassed* in quality of lumber or accuracy of cutting. I am particularly pleased with the MUTH SPECIAL HIVE. It comes nearer being the ideal hive than any other I have ever seen.

Thanking you for the prompt and efficient manner in which the order was filled, I remain
Yours very truly, J. M. BUCHANAN, Secretary.

Unsolicited—right off the Reel of Appreciation! That's the way we get our testimonials—no framed-up requests—customers feel they have to tell us how good we treat them—that's all.

Read that letter again, and send for our free catalog of Bee Supplies.

**Muth Special Hives** cost no more than any other style of Dovetailed hives, but they're worth 99 per cent more than we ask. The cover and bottom are absolutely warp-proof, and, in addition, there is a honey-board whereby a Porter bee-escape can be placed to take off honey without a sting.

Confidentially, we buy and sell as much honey as any other firm in the business. That's going some! We handle every thing the bee-keeper ought to have, and at right prices. Let us prove it to you.

**THE FRED W. MUTH COMPANY**

**51 WALNUT STREET** THE BUSY BEE-MEN **CINCINNATI, OHIO**

CHICAGO.—The market for honey is a dragging one. Sales are few, and volume small. Prices are nominal in view of conditions that are so unsatisfactory. Beeswax sells at 28 to 30. R. A. BURNETT & CO.,
March 9. Chicago, Ill.

SAN FRANCISCO.—Some water-white extracted is again in the market, but offerings of all lines are very light, and prices are firm. It is reported that some is held in the country, but arrivals are small. Very little is changing hands in this market. We quote: Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber extracted, 7 to 7½; dark amber and candied, 5¼ to 5¾.—*Pacific Rural Press*,
March 7.

ST. PAUL.—Receipts very light; demand moderate and prices steady. The prices below represent those obtained for shipment in small lots. Fancy white clover, new, 18; fancy Cal., 24 combs in a case, $4.00; strained, in 60-lb. cans, 10. W. H. PATTON, Sec.,
Mar. 9. St. Paul, Minn.

KANSAS CITY.—The receipts of comb honey are more liberal. The demand for both comb and extracted is light. We quote: Fancy white, 24-section case, $3.25; No. 1, white, $3 00; No. 2 and amber, $2.75; extracted white, 8; amber, 7. Beeswax, 23.
C. C. CLEMONS & CO.,
Mar. 3. Kansas City, Mo.

LIVERPOOL.—Market fair, slow demand. Quotations to-day are, honey, Chilian, 3¾ to 6½; Peruvian, 3¾ to 6½; California, 7½ to 9¾; Jamaican, 4 to 9¾. Beeswax, African, 28 to 29; Jamaican, 34 to 35; American, 30 to 33; West Indian, 29 to 32; Chilian, 30 to 35.
TAYLOR & CO.,
Feb. 22. 7 Tithebarn St., Liverpool.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PATENTS No attorney's fee until patent is allowed. Write for "Inventor's Guide."
Franklin H. Hough, Loan & Trust Bldg., Washington, D.C.

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

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$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.

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J. T. CALVERT, Business Manager

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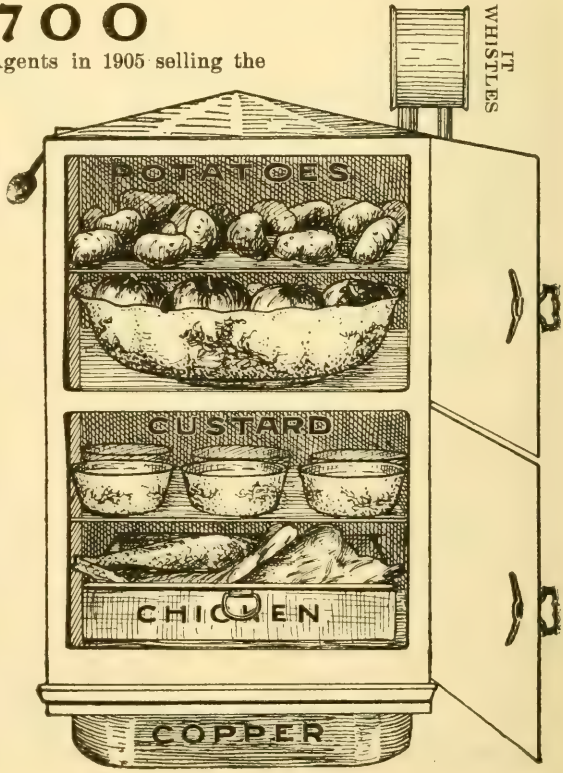

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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z. HUTCHINSON, editor and proprietor of the *Bee-keepers' Review*, and author of Advanced Bee Culture.

No bee-keeper's library can be at all complete without a copy of this magnificent apiarian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal.*

This work of 536 pages is, as its name implies, a complete cyclopædia of every thing pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that, "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of GLEANINGS, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and out-apiaries; Dr. E. F. Phillips on the eye, parthenogenesis, and scent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say anything about a book of which already 100,000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee-keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner, and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal.* Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide," and "The Honey-bee."

# Gleanings in Bee Culture

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SAVING MONEY ON AN INCUBATOR.

The Belle City Incubator Co., box 69, Racine, Wis., have asked us to make special mention of the fact that they are now making a phenomenally low offer to incubator purchasers. It is this: They agree to furnish (freight prepaid) a 120-egg incubator, guaranteed perfect, at just half the usual rate, or $7.15. For only $11.00 they will include with the incubator a good brooder which ordinarily costs from $6.00 to $9.00. This is what they term a bargain offer, and it certainly looks like that to us. They strongly guarantee both the incubator and brooder, so one need not hesitate to buy. It would be well to look up the advertisement of this firm on page 381 of this issue; and while you have the matter in mind it might also be well to order a copy of their book, "Hatching Facts," which they send free. Poultry catalogs are generally worth sending for, and this one certainly is no exception to the rule.

---

"SURE HATCH" INCUBATORS.

The makers of these famous incubators are very anxious to have all the poultry-raisers who read this journal send to them for their latest catalog. They believe that this will be to the mutual advantage of both parties. Their catalog shows how hundreds of men and women are making money with their poultry by using the Sure Hatch incubators. These chicken-machines are made in all sizes, from that of the small amateur to the bonanza professional. They are shipped with the freight prepaid, either from the factory at Fremont, Neb., or from the branch at Indianapolis. This insures quick delivery. To make assurance doubly sure, the maker of the Sure Hatch insures the machine against breakage for *five years*. This seems like a long time to guarantee a machine of this description, but *we* do not doubt for a moment that they will replace a broken part within that time. To get better acquainted it would be well to get their book, entitled "Poultry Profits." It is very surprising, the great amount of valuable knowledge which may be found in an incubator catalog.


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# WHAT BRIGHT MEN SAY OF GLEANINGS

## Hear what an Authority on Trade Journalism says of GLEANINGS. It is written by Editor F. Dundas Todd, formerly of the PHOTO-BEACON, Chicago, Ill.

I enclose one dollar to pay for my subscription to GLEANINGS. I want the bee knowledge you provide—emphatically want it, for you are running one of the finest trade papers that is printed, and, for a house organ, one that is remarkably free from house prejudice. You are a first-rate editor, and I want to tell you frankly what I think of you. I can speak plainly when I kick, but I try, even if it be a trifle harder, to be as plain when I like what a fellow does.

After receiving the foregoing we wrote Mr. Todd, asking if he would have any objections to our using this paragraph. In reply he writes as follows:

Why, certainly use the paragraph of my letter. You deserve it. I have been journalist long enough to develop contempt for a selfish stock-house journal, and to admire a man who can see bigger and wider, as you can. In photography the one-sided house journals have all failed; and as a money proposition only, you are wise to be open. I like the way you throw the columns open to ideas that conflict with the goods your firm manufactures.

The accusation has been made in times past that this journal was biased in the interests of our supply business. Our editorial force have been instructed to publish the truth about any thing and every thing, no matter whether it conflicts with the supply business or not. We have certainly made an honest effort; and if we have succeeded in the minds of unprejudiced, candid observers it is no small gratification. Mr. Todd has been long in the editorial field and the general publishing business, and his statement certainly should have weight.

## What a Celebrated Authority on Farming says:

Hudson, O., Jan. 8, 1908.

*Dear Mr. Root:*—I want to congratulate you and your sons, and all others connected with GLEANINGS, on the great improvements you have been making on this magazine. Its columns are filled with helpful articles, and nothing that isn't of the highest tone ever appears. It is beautiful in its make-up. The paper, printing, and pictures are strictly first-class. The double-page picture in the Jan. 1st issue is fine enough to frame. It is an educational matter to the young people (and we all ought to keep young) to have so perfect a magazine come into the home. Even the advertisements teach order, Heaven's first law, and neatness and harmony. And now the magazine comes in an envelope, unrolled. It would have pleased you to hear what I said when the first copy came in that improved condition. I enjoy nice things—beautiful and perfect things. For weeks I have had it on my mind to write you, but didn't get at it; but when I read page 43 I went directly up to my study and got busy.

T. B. TERRY, Hudson, O.

We highly appreciate the foregoing, knowing Mr. Terry's opinions are not for sale at any price. Moreover, he is one of our best authorities on general farming and rural life in the United States. He is one of nature's noblemen, self-educated, self-reliant, and true. Most of our readers know of Mr. Terry, and admire him for the work he has accomplished. Coming from so worthy a man, this testimonial has a peculiar value to us.

## Read what Mr. Hunter, the Corn King of Ohio, has to say:

*The A. I. Root Co., Medina, O.* Seven Mile, O., July 10, 1907.

*Gentlemen:*—I have a great respect for GLEANINGS, and, on our table, containing twenty to thirty of the leading journals and papers, it is the gem of the lot.

Yours very truly, CALVIN S. HUNTER.

## What the late Veteran Henry Alley said:

Had I been well I surely would have sent you some strong praise of the several copies of GLEANINGS. You have outdone yourselves. No magazine or publication I have seen comes up to the beauty, both outside and in, of any copy of GLEANINGS.

Mr. Alley's opinions were never for sale at any price, and what he said he meant in very truth.

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The chemicals which have hitherto been used by the farmers to protect their fruit-trees are now being freely used by all public parks and cemeteries with any pretensions to perfection of management. The trees are kept in better health, they look greener, hold their leaves longer, and, of course, are really more beautiful to the eye of man. To do this work, power-driven spraying-machines are needed.

One of the best firms we are acquainted with in this line of work is the old reliable firm, The Deming Co., of Salem, O., who manufacture on a large scale every sort of spraying-apparatus of the most modern description.

The most powerful machine they make is a gasoline-power apparatus which does the business in a masterly, wholesale fashion, by which a big orchard may be sprayed in short order. But they also make apparatus to meet the wants of the smallest garden. We have no doubt that all the outfits turned out by the Deming Co. are thoroughly efficient and satisfactory when used according to directions. They have an enviable reputation of years' standing. Drop the company your address on a postal card, and they agree to send you promptly by return mail some very interesting literature on insect pests, etc.

### QUITE A BOOK.

The Ohio Carriage Manufacturing Co., of Columbus, Ohio, have just turned off the press one of the handsomest catalogs ever issued by any firm. Of course, it's free; but it takes quite a lot of money to turn out such a catalog. It is intended to show in a masterly manner the various styles of "split hickory" vehicles made by the firm. It is our opinion that it will do this better than a flying visit to a warehouse where one sees the different carriages for less than half a minute. With this handsome book a prospective buyer can sit down of a winter evening and devote an hour, more or less, to the study of each particular style he is interested in.

In spite of the great cost of such a catalog, this firm is probably able to offer you a vehicle very much cheaper than one which maintains show-warehouses, agents, and a big staff of salesmen. We know they are thoroughly reliable, having sold carriages in this manner for many years. If you are at all interested we strongly advise sending for this book, even if you do not require a vehicle right now. Take time to study it.

### CATALOGS RECEIVED.

Catalog of cypress tanks for holding water and other liquids, by W. E. Caldwell, Louisville, Ky.

Catalog of "Roof-Fix," a liquid material guaranteed to stop leaks in roofs. The Anderson Manufacturing Co., Elyria, Ohio.

The "Good Enough" incubator, brooder, and bee-hive catalog of C. J. Werner, Superior, Nebraska. Interesting to western readers.

# BEES VS. LABOR

In other words, shall a man spend all his time with a limited number of colonies, giving them extra care, or shall he adopt short-cut methods and

**"KEEP MORE BEES"?**

Probably this subject never had a more thorough overhauling than it receives in the March issue of the *Bee-keepers' Review*, and from such men as Taylor, Townsend, Doolittle, and the editor—seven pages are devoted to the discussion.

Another excellent topic in this issue is handled by that veteran of Northern Michigan, Mr. S. D. Chapman, and I think he puts up the best argument yet made in favor of

**REQUEENING ANNUALLY.**

He tells why he requeens, how he does the work, and then shows that the cost need not exceed five cents per colony—and that for labor.

The *Review* is always packed full of just such interesting,

**REALLY HELPFUL,**

practical articles as these. It is one of the journals that the man keeping bees to make money can't afford to do without.

Just at present you can get all the back numbers of 1907, and your name on the subscription list for 1908, for only $1.00, but some of the issues of 1907 are

**GETTING PRETTY LOW,**

and you ought to order soon if you wish a complete file for 1907.

Your money back if you are not satisfied when you get the back numbers, and you may keep the back numbers in the bargain.

**W. Z. HUTCHINSON, .. .. FLINT, MICH.**

# QUEENS FOR 1908

J. E. HAND, the veteran bee-keeper and EXPERT QUEEN-BREEDER, will devote a part of his time the coming season to the rearing of CHOICE QUEENS from a superior strain of LONG-TONGUE RED-CLOVER ITALIANS that have gained a world-wide reputation for HARDINESS, GENTLENESS, AND SUPERIOR HONEY-GATHERING QUALITIES. Send for his circular. It will open your eyes to a few points in queen-rearing that will save you dollars.

**HIGHLAND BEE AND POULTRY FARM, J. E. HAND, Proprietor, BIRMINGHAM, ERIE CO., O.**

# Lewis Bee-supplies at Factory Prices

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# This Coupon worth 25 Cents!

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

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**AMERICAN - BEE - JOURNAL**

A 32-page illustrated 50-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keeper. . . . Best writers.

**It will increase your Honey-money!**

If you will send us your name and address with 25 cents (stamps or coin) together with this coupon, we will send you a trial trip of our journal for 12 months. Order now, and let us begin with this month's fine number. Address

**American Bee Journal, 118 W. Jackson, Chicago, Illinois**

TO THE

# BEE-KEEPERS OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

**E. GRAINGER & COMPANY,**
**Deer Park,**
**Toronto, Ontario, Canada.**

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

# BIENENZÜCHTER!

**von Deutschland, Schweiz, Oesterreich, u. s. w., senden Sie fuer unsere 1907 Preisliste von**

Bienenwohnungen, Rauchapparaten,
Honigschleudern, Handschuhen,
Bienenschleiern, Walzwerken,
Futterapparaten,
Porter's Bienenflucht,
Fluglochschiebern für Kasten,
Königinenabsperrgittern,
Weiselkäfigen,
Schwarmfangbeuteln,
Entdecklungsmessern,
Dampfwachsschmelzern,
Wabenenentdecklungsapparaten, und allen anderen Bienengerätschaften der

**A. I. ROOT COMPANY**
Grösste Fabrik ihres gleichen in der Welt

**EMILE BONDONNEAU**
General Vertreter für Europa und Kolonien
**142 Faubourg Saint Denis, Paris, 10me.**

# "Root Quality"

We are MICHIGAN headquarters for "ROOT QUALITY" goods. If you keep bees and live in MICHIGAN, we want to send you our 1908 catalog. We can supply you with Root's goods to your advantage.

# M. H. HUNT & SON

**WAYNE CO.** **REDFORD, MICH.**

*M. H. Hunt & Son.*

*Dear Sirs:—Please find enclosed $1 15 for which please send me GLEANINGS one year (new or renewal) and, as a premium, a good bee-veil with a silk tulle front, postpaid.*

*Name* _____

*Address* _____

No matter where you are in the United States, we want your subscription to GLEANINGS. If you renew soon, take advantage of this and have an extra veil to use this summer.

# $UCCE$$ IN BEE-KEEPING

The man who makes a $ucce$$ in bee-keeping is the one who does things when they should be done.

The time to buy goods is before they are needed; not when the rush comes.

Let us send you our catalog for 1908, so you can make out an order now.

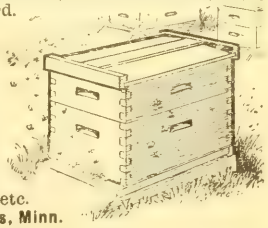
**THE A. I. ROOT COMPANY**

**SYRACUSE, :: :: :: NEW YORK**

# BEE-KEEPING will be a profitable industry this season.

Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

## Get Ready Now for More Honey



**Let us send you our catalog.** We are manufacturers and sell only our own make of bee-supplies. Minneapolis is the largest lumber-distributing point; the Mississippi river furnishes us power, and our organization and labor conditions are the best for economical production. **Send us an estimate of your requirements and let us give you prices.** We have a large stock of standard bee-supplies on hand. Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Comb Foundation, Smokers, Extractors, Shipping-cases, etc.

**MINNESOTA BEE SUPPLY COMPANY, 23 Nicollet Island, Minneapolis, Minn.**

# Keep your on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once. For prompt shipments and good service, we are at your command.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO,, MISSOURI.**

# What's the Matter With Hilton?

## WHY!

He has got his new goods fresh from The A. I. Root factory, and his 1908 catalog, and wants you to send for one free—40 pages illustrating and describing Root's goods at Root's prices. Send him a list of what goods you want, and let him tell you how much they will cost you.

Cash or supplies for beeswax at all times.

**GEORGE E. HILTON**

**FREMONT, :: :: MICHIGAN**

---

OUR SUPPLY BUSINESS HAS BEEN IN

# New York City

for 15 years. It has increased each year. We want YOUR order this year, and will quote you attractive prices. Our prices are f. o. b. cars here. We furnish bees in any quantities. Have seven hundred colonies in our own yards. Catalog free.

**I. J. STRINGHAM,**

Apiaries, Glen Cove, L. I. 105 Park Pl., N. Y. City.

---

# Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage.

**RAWLINGS IMPLEMENT COMPANY**

**9 and 11 W. Pratt St. Baltimore, Md.**

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## THE DANZENBAKER SMOKER

PAT. OCT. 3,'06, JUNE 4,'07

**GOLD MEDALS**

St. Louis Exposition, 1904
Jamestown Exposition, 1907

**IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR**

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case,** and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed,** giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot:** no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt,** expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

---

**1884** **1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M. Jenkins**

**Wetumpka, : : Alabama**

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# Dittmer's

## COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**

**Dubois, .. Pennsylvania**

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**

H. G. ACKLIN, MANAGER

**1024 Mississippi Street, St. Paul, Minn.**

# At St. Louis

On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

**Root's Bee-supplies**

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**

DEPT. B,

1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**

**Dallas, : : . Texas**

## The Time To Place Your Order for QUEENS

for spring delivery is here. Order now (with partial payment if not convenient to send all) and state when you want delivery. When ready for the queens, send the remainder. By so doing I shall be able to handle your order without the usual delays incident to the rush orders when the season is on.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested, in May and June, | $1.00 | $5.50 | $10.00 |
| Untested, after July 1 . . | .75 | 4.00 | 7.50 |

Selects, 25 cents extra. Tested, May and June, $1.50; after July 1, $1.25. Nuclei and full colonies ready May 1. Catalog for 1908 free. Send for one.

**GEO. W. BARNES, Box 340, NORWALK, O.**

| | | 1 | 6 | 12 |
|---|---|---|---|---|
| Abhsbaz Caucasian | Tested queen | $1.45 | $7 00 | $13.00 |
| | Select tested | 2.00 | 11.00 | 20 00 |
| | Select breeding | 3.00 | 17.00 | 32 00 |
| | Extra select breeding | 7.00 | | |
| Banats | Tested | 2.00 | 11.00 | 20.00 |
| | Select tested | 2.50 | 14.50 | 25.00 |
| | Select tested breeding | 5.00 | | |

Safe delivery and genuineness of breed guaranteed. Write orders distinctly, especially the address, and indicate by letter the queen ordered.

I. Ivanhoff, Georgieuvsk, Province Terskaya, Russia (Caucasia).

## Westwood Red-clover Queens

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O**

## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment Untested, $1; tested, $1.25. Address

New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.

## W. H. Laws

is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled Testimonials enough to fill this book. If you are going t improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10 00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

## NOT CHEAP QUEENS, BUT QUEENS CHEAP

500 Best Strain Italian Queens Ready to Mail March 1st.

Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12 00.
Nuclei with untested queens: 1, $1.75; 2, $2.25; full colonies, $4.75.
Nuclei with tested queens: 1, $2.00; 2, $2.50; full colonies, $5.00.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK, ARK**

**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **...Boston**

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**

## Queens Queens

of the

## FINEST POSSIBLE BREEDING

BRED BY

**F. J. WARDELL,**
**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen . . . . . | $1.25 |
| Select untested queen . . . . | 1.50 |
| Tested queen . . . . . | 2.50 |
| Select tested queen . . . . . | 3.50 |
| Breeding queens . . . . . | 6.00 |
| Select breeding queens . . . . | 9.00 |
| Extra select " 1 year old, | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

## Taylor's Queens for 1908

J W. Taylor & Son have made a specialty of breeding for the best honey-gatherers. Our three and five banded Italians can't be beat, or haven't been, as honey-gatherers. Untested, $1.00 each, or $9.00 a dozen; tested queens, $1.25 each, or $12.00 a dozen Select tested queens, $1.50 each; breeders, the very best, $3.00 to $5.00 each. Send all orders to

**J. W. TAYLOR & SON, Beeville, Bee Co., Texas.**

## Queens FOR 1908.

Finest Goldens bred in America. Send for my latest circular and prices — "and be convinced."

**DANIEL WURTH, . PITKIN, ARK.**

## How are Your Bees?

Any Queenless Colonies?

If so, send for a queen at once. We can furnish by return mail fine tested queens, reared last fall, wintered in four-frame nuclei, three-band Italians, none better, $1.00 each. Satisfaction guaranteed. Send for price list.

**J. W. K. SHAW & CO.,**
**Iberia Parish. Loreauville, La.**

# FREE! 50 lbs. Comb Foundation FREE!

## WEED'S NEW-PROCESS COMB FOUNDATION.

# PRIZES GIVEN AWAY

ABSOLUTELY FREE IN A CONTEST.

**FIRST PRIZE—25 lbs. Comb Fdn.** **THIRD PRIZE—5 lbs. Comb Fdn.**
**SECOND " —10 lbs. Comb Fdn.** **FOURTH " —5 lbs. Comb Fdn.**
**FIFTH PRIZE—5 lbs. Comb Fdn.**

THE ABOVE PRIZES will be given absolutely free to those who will make the largest number of words out of the letters found in the name "Toepperwein." The letters may be used over as many times as desired, but in no single word oftener than found in the name "Toepperwein." Only words found in Webster's dictionary are admitted. The words must all be plainly written in columns, and numbered.

This contest is absolutely free to any one and anywhere. It is a fair contest, and one has the same chance as the other. These contests are very instructive, and just the thing for schoolchildren to pass the evenings. The contest will close May 1, 1908, and all lists with words must then be in, and in May 15th GLEANINGS the results will be published, giving the names of the winners and all the words of the one who wins the first prize. The winners have the privilege of choosing any grade of foundation. We feel confident that the winners will be highly pleased with the prizes, as the comb foundation is as fine and perfect as any machinery can make, and is made right here in our factory out of this clear Southern beeswax.

Now do not lay this aside and put it off until some other time, but begin right now and start the list. Write the words in a little memorandum-book and carry it in your pocket; and every time you think of another word mark it down. There are a great many words to be made out of the name "Toepperwein," and you have just as good a chance as any one else; so do not let any time go by, thinking some one else may have more words. Now, understand you are welcome to enter this contest, no matter whether you own bees or not, nor whether you are old or young, nor where you live. In case any of the winners have even numbers, then the amounts will be equally divided between such winners.

## ROOT'S BEE-SUPPLIES.

We always carry a large and complete stock of The A. I. Root Co.'s make of bee-supplies at Root's factory prices. Write us for illustrated catalog and price list.

## HONEY AND BEESWAX.

We buy honey and beeswax at all times. If you have any to offer, write us stating quantity you have, quality, and your best price delivered at San Antonio. We also work beeswax into comb foundation by the pound at reasonable rates. We should like to have some business from associations in other States who have large quantities to work up. Our capacity is 500 lbs. per day.

We have just received a set of new machinery, and our *Weed New Process Foundation* is perfect and gives perfect satisfaction everywhere.

Whenever you are in San Antonio make our office your headquarters and let us show you through our plant. Stay here a while and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

## UDO & MAX TOEPPERWEIN,

**1322 South Flores St.** **SAN ANTONIO, TEXAS.**

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# "Bee in His Bonnet."

*By the Bee Crank.*

The old Scotch expression related to the visionary in contrast with the man of action. But it isn't exactly square to the bee, who may buzz a little now and then, just for recreation, to compare it with the folks who do nothing else. Now, if you have been building air castles on the honey harvest you expect to gather this season and have made no definite plans, have neglected to order your supplies, why not get busy **now?**

The best is none too good for you. You can't afford any other kind. You want Root's goods and you want them of Pouder, because he can get them to you quickly. I have sixteen railroads and almost as many electric roads at my command, and I can make prompt and economical shipments of hives, sections, comb foundation, and any other supplies that you may need.

My new catalog will help you in planning for your new equipment, and a postal brings it.

**Beeswax Wanted.** I pay highest market price for beeswax, cash or trade. I will allow 28 cents cash or 30 cents in exchange for supplies. If you wish to exchange for foundation, I will ship foundation the day wax arrives. Send large shipments by freight and small ones by express.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Company, Medina, Ohio

E. R. ROOT, EDITOR — A. L. BOYDEN, ADVERTISING MGR.
H. H. ROOT, ASST. ED. — J. T. CALVERT, BUSINESS MGR.
A. I. ROOT, EDITOR OF HOME DEPARTMENT

Vol. XXXVI. MARCH 15, 1908. No. 6


## STRAY STRAWS
by Dr. C. C. MILLER

DR. BRUENNICH, *Leipz. Bztg.*, 24, reports a young queen stinging a worker to death. I saw one case of the kind, and never but one.

THAT PARCELS-POST rate of 5 cents for first pound and 2 cents for each additional pound, p. 279, has reference only to a distributing office and its rural routes, and could never apply to a distance as great as 100 miles.

G. K. HUBBARD writes: "I wonder if it would not fulfill the requirements of the Nebraska pure-food law to label a case of comb honey 'None of the sections in this case weigh less than 14 oz. or more than 17 oz.'" I'm watching to see what those Nebraskans do.

YOUR ANSWER, Mr. Editor, page 276, that more than ¼ inch between bottom-bars of Langstroth frames is needed to look up between them, clears the matter. I never think of looking between bottom-bars, and didn't know that other people did. Of course, ¼ inch wouldn't give much chance for looking.

ASPHALT PAPER is strongly recommended, *Deutsche Bzcht.*, 18, to put in the bottom of hives in winter to catch the droppings. Does that mean asbestos paper, or what? [Asphalt is similar to tar; but, unlike tar, has no odor, and will stand a greater degree of heat without running or becoming sticky. It therefore makes a coating much superior to tar. In short, asphalt paper looks like tar paper, but is much superior to it.—ED.]

I AGREE with all you say, Mr. Editor, p. 276, about testing heat by the hand, and most emphatically when you advise measuring by a thermometer. Please note that I gave no conclusions — merely items of the experiment. The objection to using the hand for a thermometer, aside from the great variation of hands, is emphasized by the chance for misunderstanding as illustrated by your urging *holding* instead of *dipping*, neither of which words is given in the report. Hershiser said "stand" and you said "put," either of which might mean a quick dip or holding ten minutes.

F. DUNDAS TODD suggests "division" as a name for one of the parts of a divisible hive. Sounds all right, and doesn't bump into the name of any thing else in bee-keeping. [We have no objections to the word "division." In referring to this general subject we may say that we have a big grist of matter on the proper word to designate the several parts of a divisible-brood-chamber hive. Owing to the crowded condition of our columns we shall not be able to publish any of these articles; but we will say right here that we favor the word "division," and suggest that our correspondents adopt it. In any case we wish them to use *any* phrase or word that can not be misconstrued. Brevity, at the expense of clearness, always defeats itself.—ED.]

ALLEN LATHAM, you've filled page 291 with exceedingly interesting reading. I've always counted you a genius; but how you can succeed in getting bees to do such remarkable work with bottom-starters is beyond me —must be locality. That queen reared by me, whose bees filled sections with "solid chunks of honey with daylight showing all around the chunk except at the top." I am sure that queen would not have acted so if she had stayed here—at least I could not possibly get my bees to do such a thing here, and all that bad work that you tell about your other bees doing with bottom-starters—why, I couldn't possibly get my bees to do any thing of the kind. They just make beautiful sections, tons and tons of them, with no imperfections, and with no effort on my part. You say you follow my directions and "use a bottom-starter not over half an inch wide, and usually less." *Et tu, Brute!* Where did you ever see me advise any thing less than ⅝ inch? But I can hardly believe that so shallow a starter can cause all the trouble. Seriously I can not understand it at all, and I'd give two spools and a potato

pop-gun to talk it over with you for half an hour.

I wish, however, you might try this: In the same super put part of the sections with bottom-starters less than ½ inch, and part ⅝ inch. It may be it wouldn't work so well with "extra-thin" foundation. I use "thin."

C. P. DADANT says that if bees are unusually long-lived it's because they are lazy. I don't want to believe that if I can help it. Of course, there's no denying that bees live longer when idle than when working hard, and so it may be that some colonies have a longer lease of life just because each worker takes life easy. But that does not conflict with the possibility that there may be such a thing as a colony whose workers live longer than the average, while at the same time working just as hard as the average. And in consideration of the fact that the average life of a bee as a fielder is 26 days or less, the addition of a single day to its gathering career is an important item; for I take it for granted that the added day would be on the fielding end.

Now, what could I afford to pay for a queen which would result in that added day for a whole apiary?

Suppose one has an average crop of 10,000 lbs. annually, at 15 cts. a pound, bringing $1500. One twenty-sixth of that is $57.00. A queen that would bring that *annual* increase would be cheap at $50.00—yes, at $100.

YOUR BELIEF, Mr. Editor, p. 275, that thick syrup "may be better than a thin one which the bees are required at some expense to their vitality to reduce down to the body of ordinary honey," is all right for late feeding; for early feeding, I doubt. Evaporating is then a regular business of the bees, and I don't believe it is any such great strain on them. An important point is that, along with the evaporating, they make the feed better. [We fed thin syrup last fall, early in the season; but along in December we noticed in some colonies an alarming diminution in the force of the bees. While we do not say positively, yet we are a little fearful that this early feeding with thin syrup wore out bees that might have been useful in maintaining the body heat of the cluster during winter.

And, again, is it definitely established that the syrup which the bees invert is a better winter food than one which they can not invert, or, at least, to only a small extent? In view of recent testimony we confess to a feeling of uncertainty on both of these propositions.—ED.]

SOME THINGS said about improvement of stock are likely to scare out the average bee-keeper from any attempt in that direction. The different characteristics to be striven for are martialed in array, and he at once throws up his hands in despair. "What can I do about all those things? For instance, 'strength of wing for sustained flight.' Can I go around to each colony, feel of the wings, and decide which is strongest?"

Well, whatever may be the best way, there is one thing certain: The rawest beginner can do something to make his stock better than if he did nothing. That something is merely to breed constantly from the colony that gives the biggest yield. For, after all, the most scientific breeder, who has each trait laid out to breed for, is aiming toward such a combination of traits as shall lead to the greatest yield. The beginner can aim at the same thing by paying no attention to individual traits, only keeping track of yield alone; and, although he may not do as well as the scientific breeder, he'll go a long way in that direction. At any rate I feel sure that by just such a course I've increased my income from my bees quite materially.

OWING to excessive demands on our space we shall be compelled to leave out of this issue some special articles on spring management until our next number.

SWARTHMORE (Mr. E. L. Pratt) has been engaged to give two days' instruction in queen-rearing at the Apicultural School of the Bee-keepers' Association at Vienna, Austria, next June.

IT is said the Royal Baking Powder Company has acquired, within the last few weeks, two great factories near Chicago which they intend to use for the manufacture of glucose in opposition to the Corn Products Co. It is said the latter are chagrined over this move. The sale is the direct outcome of the recent decision of President Roosevelt, which allowed the use of the words "corn syrup" instead of "glucose."

### A SURPLUS OF GOOD COPY.

WE are fairly buried up with good copy, and it will be some months before we can reach it all. Possibly some of it we may not be able to insert in our columns until after it is out of date. We think it only fair to make this statement so that if any of our contributors desire the return of any unused manuscript, so that they may use it elsewhere, they may instruct us accordingly. Of course, we get any amount of matter, but probably less than a tenth of it is set aside to be used as our space will permit.

### BEE-KEEPING IN CALIFORNIA.

IT is a pleasure to note that the publication known as *Sunset Magazine*, published in San Francisco, has an accurate and truthful article on bee-keeping in California, in the

March number. The article bears the title, "Among the Honey-makers," and is by M. E. Dudley. It is primarily designed for the gentler sex, but the men-folks can read it too. It places the honey production of California in a good year at 4500 tons. Several fine views of apiaries accompany the text.

### LABELING THE WEIGHT.

THE clause of the Nebraska pure-food law, which requires the labeling of the weight on all food packages, has just been declared unconstitutional by the circuit court in the case of the State vs. Swift & Co., the beef-packers. The law required *the true net weight* to be printed on all packages.

### CONDITIONS FAVORABLE FOR A CROP IN TEXAS AND CALIFORNIA.

THE latest reports from various sources indicate that there will be a fair crop of honey from California this season. The old crop has been entirely cleaned out, and prices on the coast are remarkably stiff.

Reports from Texas are also very favorable. But during the last two poor years many bees have died, letting their owners become discouraged. But the survivors (it is always the survival of the fittest) ought to be able to get good returns, and to make up for the two poor years that Texas has had.

### OVERLOOKED, PERHAPS.

ONE of the most readable and interesting sections of a modern magazine is the advertising pages—that is to say, if the publisher exercises due care in the selection of advertisers. One of the features of GLEANINGS likely to be overlooked in this connection is the index to advertisements which some journals do not contain, but which is quite a help to the reader. Another feature which some may not have noticed is the department of foreign honey markets. To some of our readers it must be interesting reading.

### ALEXANDER'S LOCALITY.

SEVERAL of our correspondents take issue with Mr. E. W. Alexander on the matter of spring feeding. One or two fail to take into consideration that his locality is noticeably different from their own; for his main honey-flow (buckwheat) does not come on until middle or late summer, while that of most of our subscribers begins in early summer. After one sees Mr. Alexander's special environment he would, perhaps, feel less inclined to criticise his methods. But this does not necessarily signify that the average reader would do well to follow his advice for a locality with different conditions.

### OVERCOATS FOR BEES.

MR. N. E. FRANCE, in this issue, in the special series of articles, draws attention to the fact that many bee-keepers who would not think of going outdoors without an overcoat in chilly weather will nevertheless take their cellar-wintered colonies out of a warm dry cellar and put them on their summer stands without any protection. What is good for man must also be good for bees. The evidence in this issue shows quite conclusively the value of paper winter cases for spring protection. Shall we give our bees overcoats, or shall we let them stand out in the open, where they must necessarily suffer by reason of the sudden change from indoors to out?

### SPRING OR FALL FEEDING—WHICH?

IT will be noticed that the trend of the articles on spring management in this issue is against spring feeding. There are more to follow in the next issue, of the same import. It has for years been considered a wise policy to stimulate brood-rearing in late spring by feeding. Even so good an authority as E. W. Alexander still advocates it; and not only that, but he recommends extracting and feeding back in dilute form. We are curious to know whether the majority of our readers have found spring feeding to be detrimental. No one would question for a minute that colonies short of stores ought to be fed in the spring; but the question is, should the bees be fed up in the fall, and fed liberally, to carry them until settled warm weather, or should they be fed just enough to carry them through winter, and then give them more feed in the spring to stimulate?

There would not be space enough for us to insert extended articles on this subject; but we should like to have two or three hundred postal-card responses. The answers must be couched in not more than two or three sentences. Just write what you have found to give the best results—fall or spring feeding.

### HAS THE ADMINISTRATION BEGUN TO WEAKEN THE NATIONAL PURE-FOOD LAW?

OUR readers will remember that we requested them to write to Secretary Wilson and President Roosevelt to sustain the decision of the Board of Food and Drug Inspection to the effect that glucose be called *glucose* and not "corn syrup." As stated in our last issue, the administration revoked this decision, by which the manufacturers of glucose can now cover up to a great extent the identity of their product under the innocent name of "corn syrup," as if it were a sort of sorghum. The fact is, the glucose people, with their unlimited capital, could send down to Washington chemists and big lawyers by the score, who could present all kinds of plausible reasons; and these same interests, of course, left no stone unturned in the way of getting letters sent in, urging and demanding a recognition of their side of the controversy, while bee-keepers and others had no one on the ground to champion their interests.

Referring to the decision of the administration on this point, the *American Grocer*, published in New York, has this to say:

It is time for the administration to stop taking to itself credit for the enactment of a national pure-food law, now that it has practically nullified one of its most important provisions, namely, an honest label. It has decreed that a syrup made by converting the starch of corn, through the action of hydrochloric acid, may be called corn syrup and not glucose, as it is named commercially.

This decision strikes at the vitals of the food law and opens the way to blenders of spirits to sell their product as whisky; for the users of that fraud, saccharin, to resume operations again, so that the flavor of creosote will again be found in preserved fruits and canned corn.

It is up to the administration to ask Congressmen to introduce at the White House some distillers of pure whisky and manufacturers of pure food, who understand the art of putting up mincemeat, fruit butters, catsups, jams, jellies, and preserves, without the use of chemical preservatives. Thus far the delegations have been from the ranks of whisky-blenders, the users of coal-tar colors, preservatives, and the makers of "corn syrup." They preach the gospel of license; juggle with names with the exception of the honest users of benzoate of soda, who advocate their product being labeled as containing the much-debated article.

There is a national election ahead, and the grocery trade and its allied branches have half a million votes, and we trust every voter interested in pure food will note how the party in power has begun a campaign to nullify the most popular law passed by Congress, and again open the sluiceway of adulteration. Do not be fooled with party protests asserting credit for passing a national pure-food law which is intended to stop absolutely the sale of unwholesome food and secure honest labeling. The ballots of the grocers can punish the sinners.

We do not look at this matter quite as seriously as does our contemporary. If the administration has made a mistake (as it surely has) the mighty protest that is going to be raised will make the "powers that be" more careful in rendering decisions of an allied character in the future.

Of course, this most unfortunate decision will be used as a powerful precedent. The blenders of whisky, and all others who desire to conceal and cover up certain ingredients, are doubtless having a regular jollification, for now they have a precedent by which there is a chance and even a likelihood that they can, to some extent at least, misbrand their product. But be it said to the everlasting credit of Dr. H. W. Wiley, he stoutly stood out against the cabinet. Even though our great and good President, influenced by the majority of his subordinates, was made to feel that "corn syrup" was the proper and legitimate name for glucose, yet, notwithstanding, Dr. Wiley dared to stand alone.

Our government officials can not be too strenuous in enforcing the provisions of the national pure-food law. Their decisions, therefore, should be on the side of safety rather than take the chance of opening the floodgates of fraud.

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### HOW GLUCOSE (CORN SYRUP) IS MADE.

The following clipping was sent through the mails, and we reproduce it here for the benefit of our readers:

Although the glucose-factories all have a big sign of "No Admittance" nailed to their doors, I was once admitted with a chemist, and had the process of the manufacture of glucose described to me as it was being done. The corn is first ground, then soaked in water to get the starch, and the starch water is boiled with sulphuric acid added in the proportion of 1 quart of the acid to 100 gallons of the starch water. This is then sweetened with cane syrup, my Early Amber cane syrup being largely used for this purpose because of its being strongest in saccharine matter. The syrup thus made contains only one-sixth saccharine content, and this is the syrup most people buy. The State Board of Health does not consider this glucose syrup wholesome, and at the Red Wing and Faribault institutions they now make their own syrup.

Glucose is bad for the stomach and kidneys. Scientific physicians claim that the strong mineral acid used in its manufacture destroys the fine tissues of the kidneys.

Farmers can protect themselves against this enemy to health by growing the amber cane and manufacturing their own syrup.

We do not know in what publication this appeared, but no matter. The statements are, in the main, correct, except that hydrochloric acid instead of sulphuric is used in this country, and one process is left out—namely, that soda, after the boiling in hydrochloric acid, is put in the mixture to neutralize the soda—or, rather, we should say, the soda combines with the acid, forming common salt. But, unfortunately for the American stomach, this soda does not take up all the acid; and the capitalists back of the glucose interests, we understand, would give millions if some chemist would tell them *how* this could be done in a *commercial* way. It can be accomplished in the laboratory, but at great expense; but in the glucose-factories it is impracticable, and consequently the glucose in the markets, in its various forms under the name of "corn syrup" and its compounds, contains some unneutralized hydrochloric or sulphuric acid, and this is what plays the mischief with our digestive apparatus. We may disguise the so-called corn syrup (glucose) by putting in cane syrup, but the injurious agent is there just the same.

Reference is made to the fact that "No Admittance" is nailed up on the doors of the glucose-factories. We have been trying to get our chemist into some one of these concerns for several years back, but without success. The fact is, the glucose people do not want the outside public to know the process of manufacturing their product; and now it has leaked out that the wooden buildings in which glucose is made are very short-lived because of the destructive action of the acid fumes during the process of manufacture.

Bee-keepers, on the other hand, have no secrets to cover up. Their bee-yards and their supply-factories are open to the inspection of all reasonable and fair-minded people, especially reporters.

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### THE DIFFICULTIES OF A QUEEN-BREEDER.

It has been the settled policy of the proprietors of this journal to allow none but responsible people to place advertisments in its columns. There seems, however, to be a misunderstanding of what we mean by *responsible*. For example, we have a complaint now against an advertiser up for settlement which shows the difficulty we occasionally have to contend with in making advertisers and purchasers harmonize, even when both parties to the transaction are honest.

A, the buyer of a select breeding-queen

(price $6.00), complain of B, the queen-breeder, because the queen died several months after her safe arrival and introduction. On this account the buyer demands his money back. B, the queen-breeder, says he can not do that, because he was not notified until months after the death of the queen; but to effect a compromise he offers to furnish a good queen in lieu of cash. The customer refuses this offer.

We think most people will absolve us from any responsibility in the matter, more particularly as we have gone to some trouble to get the dispute settled We know the queen-breeder acts on the square-deal principle, and have a high respect for him accordingly. On the other hand, the buyer feels the loss of $6.00 very keenly.

What complicates the situation still more is that we too had a complaint from the same buyer several years ago. He bought a breeding-queen from us which died a few days after receipt. We made the matter good by sending another queen in a nucleus, because we guessed either of two things had happened — the queen was injured in the mails or she was unsuccessfully introduced.

What we wish to point to buyers of queens, more especially breeding-queens heavy with eggs, is the very great desirability of having such queens sent in a nucleus by express. This reduces the risk to a minimum, and is more satisfactory in every way. Heavy queens can not stand the banging of the mail-bags; and middle-aged queens, or the queens old enough to have been well tested, can not stand the shocks of a mail-bag as well as very young queens.

We are of the opinion that none of our subscribers would expect us to do more than we have done in the foregoing case. We can not do wonders or impossibilities.

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### SENDING OUT TRAVEL-STAINED, BROKEN, AND NO. 2 HONEY AND LABELING IT NO. 1.

THE illustration on page 358 shows a very conspicuous example of this very thing. We will explain by saying we received a carload of honey from a broker who bought what he supposed was No. 1; but much of it so graded was hardly No. 2 No, it would not even pass for that. It will have to be cut out and sold for chunk honey. The sections shown in the photo were taken out of the cases at random, and piled one on top of the other, and are a fair average of that one lot. Unfortunately the camera fails to show all the varying shades of travel-stain and bee-glue, but it gives one an idea and at the same time portrays very clearly where the honey was leaky and broken, with only a portion of the surface capped over. Notice, also, that this supposed No. 1 honey was of the non-separatored kind. There are some bee-keepers who can produce good No. 1 stock without separators, but they are few and far between. The great bulk of such honey that we see at commission houses is inferior, and oftentimes a bad lot. The sections are bulged, and when two bulged surfaces come together the results are always the same—both sections are ruined, and in most cases the whole case of honey is knocked down several cents per pound, even though the other sections are No. 1.

The samples shown in the photo do not by considerable represent the whole car of honey, but it was a fair sample of some of the so-called No. 1. I say *some* of this No. 1, because a good portion of it, having been produced by other bee-keepers, came up to the standard of the grade called for. But this particular lot of No. 1 (?) was produced, evidently, by some man who was not as ignorant of what he was doing as he might be. To state the plain facts, it is apparent that he *deliberately* put a lot of No. 2 and off-colored honey in the cases *knowing* they were such, and marked them No. 1. The broker, a large buyer, apparently took the whole lot without examination, and it was only when he sold it to us that he became aware of what had been palmed off on him. We at first refused to accept the car, and you can imagine the telegrams and letters that flew back and forth over this thing.

If there is any thing in this world that hurts the sale of good honey, and injures the honey business in general, it is the bee-keeper who resorts to such dishonest practices as this. We don't wonder that honey-buyers lose patience when they have to deal with such kind of trickery as this. It is not at all strange that some dealers quit handling honey at all.

Speaking about unseparatored honey, we wish to register a most emphatic *protest against trying to get along without separators.* If there ever was a penny-wise-and-pound-foolish policy, this is it In the photo here shown, five cents' worth of separators would have saved something like $2.00 in the valuation of the honey. While the non-separator man did not lose on this one deal, he will have hard work to sell to that same broker again.

We feel so strongly on this subject, that, if the bee-keepers in any locality know of any one who is wrongly grading his honey, calling it No. 1 when it is not even No. 2, we should be glad to have somebody buy a case of it, take it to a photographer, and have a photo taken of it just as it is, showing every section. Send the photo to us; and if the bee-keeper is an old offender we shall publish his name to the bee-keeping world. Such a man ought to be run out of the ranks. He secures only a temporary advantage, but in the end injures himself and every one else.

Please do not get the impression that we are affirming that *no* one can produce good honey without separators; but we do say that the *average* man should not attempt it.

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### ALSIKE VERSUS RED CLOVER.

The following excerpt from the *Indiana Farmer* for Feb. 1 hits the nail on the head in a way that will be quite pleasing to the

bee-keepers of the red-clover States. It would be a good plan for bee-keepers to have this item printed in their local papers, as the facts are as stated, not being overdrawn in the least, nor untrue, and ought to be known by all farmers who now grow red clover. Most bee-keepers ought to sell alsike seed at cost, or even less than cost, to nearby farmers. W. K. M.

Subscribers are asking us about alsike clover as a substitute for red, partly because of the high price of red-clover seed as compared with that of alsike, and partly because of the difficulty of securing a stand of red. The seed of alsike clover is only about half as large as that of red; and as the plant spreads more it should not be sown thick, so that only from 5 to 7 lbs. is required to the acre. The price of alsike just now is $1.50 less per bushel than red, so that there is a saving of more than half in the seed required for a given area. Not many of our farmers have tried alsike, and we must take the testimony of those in other sections as to the plant. It differs from red in being good for four or five years when once set, and in allowing only one cutting in a season. Good moist clay soil suits it best; and as the stalks are long and rather slender it is well to sow a little orchard grass with it to give it support. The two plants mature at the same time, so there is no loss in cutting them together. Alsike is hardier than red, and stands rougher winters without injury, and comes out all right where the other fails. Analysis shows that alsike contains more solid matter and protein than red clover. It is also an excellent honey-plant, yielding more and better honey than the other varieties of clover. It should be sown and treated as red clover, with a little more care in preparing the seed-bed. The ground should be pulverized as fine as possible.

### KOLA FOR BEES.

A writer in *La Apicultura Espanola* advocates the addition of extract of kola to each quart of syrup fed to bees. He says it greatly increases the activity of the bees, apparently with no injurious effects. It is not clear to me what is to be gained by this, seeing that, when bees require to be fed, they do not require a stimulant but rather the reverse. I have known alcohol to have a stimulating effect on bees, but the results were unsatisfactory.

### GERMAN MANUALS OF BEE-KEEPING.

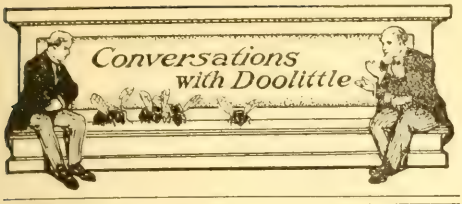
I have received lately two excellent German works on bee-keeping, by Herr Max Kughenmüller, of Constance, Germany. The author is the editor of an excellent German bee-journal published at Stuttgart, the *Allgemeine Zeitung fuer Bienenzucht*, so that the works which are before me may be justly considered up to the times.

Both books are well bound, and well printed on excellent paper. The paper particularly is of the kind that lasts for hundreds of years. The first one noted is "Die Bienenzucht," published by Sprösser & Nägele, of Stuttgart. I have not had the opportunity to read this book through; but it seems to me that, if any one desires to become quickly acquainted with German bee-keeping methods, reading this book carefully will do it. The European writers excel in what may be termed the science of the bee, and Herr Kughenmüller is no exception to this rule.

The other book is by the same authority, but published by Messrs. Richard C. Schmidt & Co., of Leipzig, who are well-known bee-publishers. Its full title is "Betriebsweisen lohnenden Bienenzucht." On its title-page it states that it is written by the practical for the practical; and this seems to be so, for each chapter is written by some successful bee-keeper from every part of Germany. For example, the first chapter was written by Pastor W. Stolzenburg, in Borgfeld, Prussia, and the last chapter is by the editor, Herr Kughenmüller, who lives in Constance, by the lake of that name in Southern Germany. There are articles from Schleswig-Holstein, Alsace, Pomerania, Hanover, Silesia, Gotha, Posen, Rhineland, Switzerland, Scherzingen-Munsterlingen, Austria, Baden, and elsewhere.

That interesting journal, *L'Abeille et sa Culture*, published at Huy, Belgium, signalized the new year by giving a sketch, with portrait, of Réaumur, the illustrious bee-keeper and savant. It says in part:

Reve-Antoine Ferchault de Réaumur was born at La Rochelle, France, Feb. 28, 1683. His name is generally remembered on account of his invention of the thermometer which bears his name. He became at an early age very proficient in mathematics, and published a work on the subject; but bee-keepers are chiefly concerned with his studies in bee culture. At the age of 55 he commenced the publication of a number of communications which he had originally read at meetings of the Academy of Sciences. These books treated on physics, natural history, and technology. He invented white porcelain for use in thermometers, and which is now much used for refrigerators. He also concerned himself with artificial incubation and the preservation of eggs. He was also interested in botany, and conceived a system of classification similar to the Linnean. In natural history he made a special study of the invertebrate animals, notably insects. Between 1734 and 1743 he published his great book, "Mémoirs pour servir á l'Histoire des Insectes," in six volumes, which denoted sagacious observation, ingenuity, and patience. Of all the great naturalists of the 17th and 18th centuries he was certainly the most thorough in his methods. His "Histoire des Abeilles" (History of Bees) is second only to the work of Francis Huber in public estimation as a scientific treatise on bee study. He ceased his activities Oct. 17, 1757, after a long and very useful life.




COMB OR EXTRACTED HONEY, WHICH?

"Which had I better produce, comb or extracted honey?"

"Are you tired of comb-honey production, Mr. Smith?"

"Not if it pays as well as does the extracted But from what I have been told, it would seem that the extracted should pay better. I read only yesterday in one of my old bee papers that extracted honey could be produced more cheaply than comb honey. The writer said there was a saving of 20 lbs. of honey which was required to build 1 lb. of comb in which to store the honey sold in the sections, and that, where the honey was extracted, combs once built could be used as long as the apiarist lived, barring accidents."

"Did you believe him?"

"I could not contradict, for I did not know enough to. He said Huber, who lived a century or more ago, experimented till he found that it took from 20 to 25 lbs. of honey (this to be eaten by the bees) before wax enough to produce a pound of comb could be secreted. Did you never hear of this?"

"Yes. This was a stock argument when the extractor was first known. But beekeepers of this time believe that it does not require nearly that much. In conducting his experiments, Huber confined the bees to the hive, which put them in an abnormal state, so that their struggle for liberty made them use very much of the honey Huber thought was used to produce wax. When bees are very active, and especially when they are uneasy under confinement, they use large quantities of honey to support the necessary vitality which is required all the while to take the place of that used up in the struggle to get out, very much on the principle that a man who is doing hard muscular labor requires much more food than does the one who sits at his desk all day."

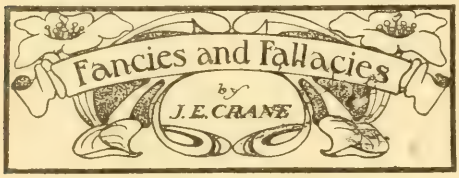
"He said nothing about that; but he figured that extracted honey had the advantage because of the time taken to build the comb, when the comb-builders could just as well be in the field gathering nectar. Then he said further, that, since it takes about 1 lb. of wax to hold 25 lbs. of honey, if the yield in newly built combs in sections was 25 lbs., if I furnished the combs I would secure 50 lbs. of extracted, plus that gathered by the comb-builders, when they were not held in the hive for the production of wax and the building or shaping the same into comb. I have been thinking this over during the night; and it seems to me that, if he is anywhere near right, from 60 to 65 lbs. of extracted honey could be produced from the same colony of bees as easily as could 25 lbs. of comb honey. What do you say?"

"It seems to me he was mixed just a little, although I do not know that I just understand that argument from beginning to end. He mentioned things which I never heard in an argument of that kind before. I am free to admit that it takes about 1 lb. of wax, when built into comb, to hold 25 pounds of honey; but I am not free to admit that the pound of wax costs 25 lbs. of honey to produce; nor am I willing to admit that there would be more gatherers where no combs were being built than would be the case where the bees were filling the section from starters; for it is a rare thing that the comb-builders go into the fields as laborers. It is possible to cause the bees which are generally occupied in comb-building to go into the field as gatherers by throwing the colony into an abnormal condition; but otherwise they would not gather stores whether they were building comb or not. You can very easily prove this for yourself by changing queens in a colony of black or hybrid bees about four weeks before the honey harvest, giving the colony a queen of the yellow race. Note the time the first yellow bees from the new queen begin to emerge from their cells; and twelve days later, when the harvest is at its height, take a look at the entrance of the hive during the forenoon, and you will see only black bees going out after and coming in with their loads of nectar. Now take a look in the sections, where comb-building is going on rapidly, and you will find nearly all the bees there at work, pulling away at the cells and septum to the combs of the yellow race; and if you wait till the sixteenth day you will find the same at the entrance, while there will be scarcely a black bee in the sections. This proves conclusively that the writer had no ground for arguing that 'the comb-builders could just as well be in the field gathering,' for the field-bees rarely build comb under normal circumstances."

"But, after all, don't you think that more extracted honey can be produced than section?"

"Yes. From all of my past experience I should say that, on an average, one-half more extracted honey can be produced from a given number of colonies than section. That is, if a given number of colonies would produce 50 pounds of section honey during a certain harvest, those same colonies would give a surplus of 75 pounds of good thoroughly ripened extracted honey. The reason I do not produce extracted honey for market is that, when it comes to the disposing of the two articles, I can sell nearly double the number of sections with the same labor that it takes to sell half as much extracted, and always secure a half more in price for the section honey, while during many seasons the section honey brings nearly double the price. I know that some claim to get as much for their extracted as for comb, in their home market, but I can not do this; and when it comes to sending the two to a distant market, all know that extracted brings

little more than half the price of section honey. The quotations in any of the bee papers will tell you that."




I agree with Mr. Doolittle most heartily, that there are some strains of very yellow bees, five-banded ones if you please, that are both hardy and good honey-gatherers.

A capital idea, that of cutting out light combs and placing them in a wooden butter-dish. One great difficulty with the honey trade is that it is not pushed as it should be.

In Dec. 1 issue of GLEANINGS Mr. Holtermann enumerates some of the causes of irascibility, and yet has left out one of the most important causes, as it seems to me. When bees are at work a heavy wind seems to make them very irritable, and sometimes human beings are affected in the same way. One day, without much wind, we may handle bees with the greatest pleasure; while the next, with a heavy wind, a good veil of the most approved pattern is very essential to our happiness.

Some of Mr. Coveyou's methods are novel, and seem to be of considerable value to those putting up honey, or bottling, as the government officials would have us say. I fear he would not be allowed our eastern roads for his tricycle, however. I am interested in the suggestion of an automobile for bee-keepers' use. Can you not, Mr. Editor, give us illustrations of the best up-to-date machines that will carry 1500 lbs., or thereabout? I believe a good practical automobile would save time enough so we could run an extra yard.

Although much may depend on the strain of bees or on the flow of honey, yet I believe that Mr. Morrison is not far out of the way in thinking that thin combs will be built more evenly than thick ones. I believe it a mistake that the standard sections are so thick. A comb, including the bee-space of not over 1⅜ to 1½, will not only be built more evenly, but I am satisfied that more of them will be completed; and then, too, they will sell to better advantage, as they are larger, or have more comb surface, and are more showy. They may also be cut to better advantage.

The experience of O. S. Rexford in feeding bees, page 1508, is not only interesting but of great value. How little we know for certain along these lines! One experiment alone is insufficient. Here is an opportunity for our government experiment station to tell us just the best way to feed, and how much to feed, to supply a colony with the equivalent of, say, ten pounds of honey. This experiment would seem to show that, the quicker a colony can be fed, the less will be the loss. The best method of fall feeding is becoming a matter of a great deal of importance in those localities where there is little fall forage and the basswood has been cut off.

Right along this line is the cost in honey of wintering bees out of doors, by Allen Latham, p. 1563. I had the pleasure of meeting Mr. Latham in October, and am free to say that I believe him to be one of the most careful experimenters within our ranks, and yet his experience is so very different from my own that I am tempted to inquire what should make the difference. Some thirty years ago I wished to know the amount of honey required to winter a good colony out of doors. I took three good colonies; and the last of October or first of November, that there might be no mistake, shook off all the bees and weighed the combs. Again, about the first of April I shook and weighed the combs and found the average loss about 17 lbs. One lost almost exactly 17 lbs.; one ¾ lb. more, and the other ¾ less. Thus these three colonies averaged a loss of 3⅔ lbs. a month—nearly double that of Mr. Latham's. What could make the difference? I can think of only two or three things. The first is, he is some two hundred miles further south, and, of course, the winters are somewhat milder. Again, his colonies may not have averaged as strong. They may have been of a more quiet strain of bees, which, as he says, makes quite a difference.

There is another thing I had thought of. Had his hives absorbed any considerable amount of moisture during the winter, thus showing a smaller loss than if the combs alone had been weighed? If this were very perceptible I believe he would have mentioned it. Doubtless the large entrances he uses had much to do with getting rid of surplus moisture.

If half of these colonies had had contracted entrances the result would have been instructive. My experience tallies with that of the editor, that a small entrance is a saving in honey and bees.

I purchased a yard of some forty colonies of bees in the spring of 1906, and found the winter entrance contracted to ¼ by 2 inches, and yet I believe I never saw a yard of bees average as strong as that one; and I believe this entrance, which is equivalent to ½×1 is ample, provided it is given so as not to get clogged with bees, and provision is made to get rid of all surplus moisture.

Your experience, Mr. Editor, at Mr. Mendleson's, is certainly interesting, p. 1565. I was especially interested in the method of separating cappings from honey by heat. It

has for some time been a question how best to separate honey perfectly from cappings.

It may not generally be known that wax will melt at a temperature of 150 to 155°, while most honey will remain unharmed at a temperature of 160. Indeed, you can raise the temperature of clover honey to 170 for a little while without harm. A year ago we bought many hundreds of pounds of honey from a large dealer that had been broken or granulated. By placing it in a large tank with water-jacket the temperature rose to 160°, when the wax came to the top, and, after cooling, was easily separated from the honey. We have had occasion to buy more the past autumn, and treat in the same way, with equal success. Of course, the honey and wax must be stirred often so as to keep the temperature even through the mass.

The past summer at one of my yards, during my absence, quite an amount of honey and cappings came off together, which I found separated easily by means of the double boiler. Where a large amount of feeding is required in the fall I have found that a very good method is to take cappings after letting what honey drain out that will readily, keep them till we are ready to feed, then soak them out in water and use the rinsings for melting sugar in. Some use these rinsings for vinegar, but I prefer to use them for feeding.

Prospects in Texas are good.

The Southwest has enjoyed a mild winter.

An average of three frames with brood in January, and bees were in splendid condition.

The way we throw hives around, handling hundreds of colonies, nails to hold hive, tags *will* be driven into the wall of the hive-bodies in time. With the bent staples there is no trouble. See p. 139, Feb. 1.

Little cubes of honey, in paraffine wrappers, etc., to be served in hotels and dining-cars, is a good idea. It seems that the North will some time enter into the production of "chunk" honey yet.

Honey is a luxury for those who use it only occasionally and keep it in the house to place on the table just when visitors call. For those who know the true value of honey, especially its heathfulness as a food, and who use it on the table regularly, it is not a luxury but a necessity.

The tendency with too many bee-keepers is to let a great many things go to waste and continually buy anew, which costs money. More economy and less extravagance is what the American bee-keeper needs.

Contrary to the arguments of some of our authorities, I believe that hives well painted will last very much longer, keep in shape better, and look nicer than unpainted ones. These three points in favor of painted hives are enough to make me put a new coat of paint on all of my hives, supers, bottoms, covers, and all other supplies and implements this spring before the honey-flow.

### NARROW VS. WIDE BOTTOM-BARS.

Wide bottom-bars with only ¼-inch space between them would retard communication between stories very much. It is already detrimental with wide top-bars, leaving only ¼-inch space between them. That's why *my* top-bars are ⅞ inch wide and ½ inch thick; and there are no more brace-combs than with wider ones in the same hive. The bottom-bars are only ⅜ inch. It is easy to look up between the combs; and a great advantage is that all the queen-cells will be built right past these narrow bars from the lower edge of the combs of the upper story of the divisible brood-chamber. I say *all;* for those that will not be built there, if the combs are all solid slabs, are too few to mention. Where would the cells be with wide bottom-bars? and what would be the advantage of such width?

### GLUCOSE OR "CORN SYRUP."

We have tried some of the stuff known as "corn syrup," hence are in position to side with those who are making such a vigorous protest against calling a thing such, which it is not. *Glucose* should be the name for it, for the people would then know what they buy. Of course, the bee-keepers will favor this. Now for my experiment: Taking a tumbler of honey and a similar one of "corn syrup" it will be found that it takes twice as much of the latter on bread "to get a taste," and then it does not give as much of a taste as half the amount of honey would. The syrup costs "*only* 50 cents for a ten-pound bucket, while honey is $1.00;" but the consumer does not know that he must use more than two buckets of it to one of honey; and instead of getting the good that he would from honey he eats thrice the quantity of the injurious glucose stuff.

### HOT AIR FOR LIQUEFYING HONEY.

It seems that the time will come when hot air will be used more for heating and reliquefying honey than the old method of placing the vessels in hot water. I stumbled across this idea quite a while ago. A 60-lb. can of granulated extracted honey was set on the brick wall surrounding a large boiler that was kept going night and day. On the following day all the honey had melted and was as thin as water. The can was at least

a foot away from the boiler, but nearly above it, where the heat was greater. Then, again, I have often set small vessels of honey quite close to the stove to have the contents melted, but it has been only lately that I have given it much thought.

While out at one of my neighbor bee-keeper's, Wald. C. Conrads, he spoke of an idea that seems good to me, but it will have to be put into practice before we can be certain whether it will work.

The idea is to have an apparatus very much like an incubator, but built on a larger scale. This "incubator" could be made large enough to hold six or eight 60-lb. cans of honey. The lamp arrangement would be the same as on egg-incubators, only large enough to give the required amount of heat. After putting the cans in the box the heat would be regulated to the proper temperature, and the register would keep it there. It would be necessary to leave the honey only long enough to be thoroughly heated to the required point, after which it could be replaced by a new lot of cans as quickly as possible, so the machine could go on with the same heat for days at a time. It would have to be ascertained at what point the temperature must be kept in the box to give the required results. It might have to be more than 100° Fahrenheit. The contents of the cans, *if these are left in the heat long enough*, would have the same temperature throughout; but for rapid work it might be best to put on more heat. In some instances a larger machine would be needed.

DIVISIBLE-BROOD-CHAMBER HIVES.

Among dozens of inquiries, one of interest to many who may contemplate giving this kind of hive a trial will be given herewith. It is as follows:

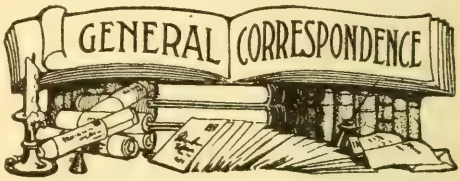
"I write to ask some questions about your shallow hives. I asked one editor why it would not do to use shallow supers with ordinary shallow frames—the advantage in this being that, if one did not like the divisible-brood-chamber system, he could go back to the deep brood-chamber without disposing of his shallow hives. The answer was, 'They would do in a way; but one objection would be that the top-bars of the frames would be too wide, and interfere with the operations.' I do not see the force of this objection. Is not the comb wider than the top-bar? and could one not order frames with narrower top-bars? Do you use the system that J. E. Hand outlined in GLEANINGS?"

My first divisible hives were nothing but the regular ten-frame shallow extracting-supers with 5⅝-in. Hoffman self-spacing frames. These were used throughout from the bottom up. My idea was exactly the same as the questioner's. If these shallow hives should prove unsatisfactory they were to be used as supers on the deep-brood-chamber hives, but this was never done. More were put in use as divisible-brood-chamber hives instead, until now I have hundreds of them in my apiaries. Having these side by side with both eight and ten frame deep hives I can more readily notice their advantages.

And this is the very way I would urge others to give this kind of hive a trial before plunging into an expense that may be regretted later. There is nothing to lose in this way, as the bottoms and covers are the same as for ten-frame L. hives.

It is true that the top-bars of the regular frames are too wide for ready examination, and sometimes it is a hindrance in that it does not allow sufficient communication between stories in some colonies, keeping the queen from passing freely from one story to another. Nevertheless I have thousands of these frames in use with good results. My ideal frames have top-bars only ⅞ inch wide the entire length, and ½ inch deep, the other parts of the frames being the same. I have used them for ten years, and there was no trouble with burr-combs or sagging; besides, these frames allow freer communication, better observation, and are stronger. There is no comb-guide or groove to weaken the top-bar, the foundation being fastened with hot wax.

My system of management is different from Mr. J. E Hand's, in that it is not so complicated. It will be written up later.




## SPRING MANAGEMENT.

### Protecting Hives with Paper; Prevention of Mixing when Colonies are Set out of the Cellar; Feeding in the Spring; does it Pay?

BY E. D. TOWNSEND.

If I were wintering colonies in small hives with sealed covers, and had a well-protected location, I do not think it would pay me to paper the hives; but if I were using a hive larger than the ten-frame Langstroth I would paper in all cases, for I do not think that the large hive has as many bees in comparison to the size of the hive as the eight and ten frame hives have. If this is the case, the extra room to warm during the breeding season of spring would, in my estimation, justify the papering. If a yard of bees is located in a windy place (and I think the majority are) then it will also pay to paper.

COMPARATIVE ADVANTAGES OF BLACK AND WHITE PAPER.

It is with a good deal of satisfaction that I find GLEANINGS showing *white* paper for protecting colonies during winter and spring. Although I do not *winter* bees in papered hives I have been almost alone in the use of

white-felt building-paper for spring protection; and while the journals have been recommending tarred paper for spring protection I have been using the white with good results.

The reason that I have "steered clear" of black paper for papering hives is that, several years ago, I had experience with hives painted a dark color, some of which were of the chaff pattern, but built with a thin front painted a dark color. The results were that these dark-colored hives would absorb the sun heat so as to attract the bees out on many cold days, so that they rarely wintered a colony in good condition. They were, therefore, abandoned for a better kind.

Mr. S. D. Chapman, during the spring of 1906, wrapped every other hive in his home yard, consisting of over two hundred colonies, with tarred paper. By having half the colonies in the same apiary wrapped with paper and half not wrapped he was able to give the plan a very fair test. All of the colonies were wintered in a cellar, and Mr. Chapman is very particular to have all light colonies fed early in the fall for the purpose of having all the covers sealed down so there will be no chance for a draft through the hives after they are set out of the cellar in the spring. The location where this test was carried on is well protected from the prevailing winds, especially those from the north and west.

The ones that were covered with the tarred paper absorbed the heat from the sun to such an extent the bees were lured from the hives on days that were too cold for them to fly. This meant that the colonies in the papered hives at the beginning of the honey-flow in June were not nearly so far advanced as those in hives that were not protected. In view of this, Mr. Chapman has decided that no extra protection is needed if the yard is well sheltered from the winds, and if the hive-covers can be well sealed the previous fall.

White paper does not cause the hive to become so excessively hot when the sun shines as the black paper does; and if it has been well folded down and fastened at the bottom of the hive the bees are kept as warm as is necessary. Colonies so protected went through the severe freeze of May 10, 1906, without the loss of a particle of brood, while many colonies in hives not papered lost heavily, and some of these were so greatly reduced that they were able to gather no surplus honey that season. Generally speaking, night is the time when the extra protection is needed, for the air during the day is warm enough. Since white paper at night is just as good in all respects as the black, it is obvious that it is the better material to use, since it does not absorb the heat of the sun during the day and make the hive too hot.

I use white-felt building-paper, and it is so cheap that I throw it away and buy new each year. It is true that any sheets that might not be torn could be rolled up and saved; but the new paper folds so much better than the old stiff paper kept over from the year before that I do not think it would be much of a saving to try to use the old. This white-felt paper comes in rolls 36 inches wide, and costs about 65 cts. a roll. One roll of paper this width will cover about 35 hives, and it is not hard to see that, if the paper is of any value at all, the expense of less than two cents per hive can not be considered. The tarred paper is usually but 32 inches wide. While this might do for an eight-frame hive it is not wide enough to suit me for the ten-frame size.

### HOW TO WRAP THE HIVES.

If the hive-cover is sealed down I put the paper over the hive—cover and all; but if the cover has been loosened, or if there are any openings at the top of the hive, I remove the cover and put the paper next to the bees. The paper can be used more advantageously in this way, for it comes down to the bottom of the hive in better shape. Furthermore, it is easier to fold the paper around a hive that has no cover. The best arrangement of all is a hive with a thin super-cover that comes just flush with the outside all around. I remove the outer cover and fold the paper directly over the inner cover, being careful to put it on smooth, so that there are no wrinkles at the sides. I then fold over the ends in such a manner that the water can not possibly run down between the folds. I secure the bottom of the paper with a piece of lath as long as the side of the hive, and fasten it with a nail in the center. These pieces of lath should be tacked at the bottom of the paper, one on each side.

The lath have the advantage over the string in that the lower edge of the paper is held perfectly tight against the hive at all points, so there is no chance for a circulation of air between the paper and the hive. If nothing is used but a string tied around the bottom of the hive, there is likely to be a loose wrinkled edge where the wind and cold air can get in. If the work has been done well, there is no chance for the heat from the bees to escape except through the entrance of the hive. I believe this to be a very desirable condition.

We are wintering 325 colonies of bees in a cellar in Charlevoix Co. Nearly all of the covers are loosened so that there is some ventilation at the top.

The yard in which these colonies are placed in the summer is well protected; and when the hives are set on the summer stands the propolis is cleaned from the upper edge of the hive and from the under side of the cover. A sheet of felt paper the size of the outside of the hive is put on, held down by the cover. A ten-pound stone is finally placed on top; and it is my opinion that, since the soft paper fills up any small opening between the hive and the cover, there is no more chance for draft than in a hive with a sealed cover. However, in all our yards where the wind is likely to be strong the hives will be papered according to the plan given before.

### REMOVING BEES FROM THE CELLAR.

In removing colonies from the cellar, no

attempt is made to set them on the stands they occupied the previous season; for I have found that it makes no difference as to the mixing of the bees whether the hives occupy the same stands year after year or not.

Unless precautions are taken, the bees will drift to one side of the yard when the hives are taken from the cellar, all of them trying, apparently, to enter a very few hives. This means that, in some cases, a hive will be deserted; and even the queen, thinking she is being left alone, will fly out and join the busy throng, trying to get into the few hives at one side of the yard. I have had this experience two or three times; and after the mixing is started I have found that it pays to contract the entrances of the strong colonies so that only a few bees can emerge at a time. When this is done the flying forces of all the colonies are more nearly equalized. After this the colonies should be shifted about to some extent; that is, if a certain hive already has its share of bees, and if more bees keep coming to it so that the prospects are that it will become overcrowded, it should be carried to some part of the yard where the hives are not getting their share. One of the hives light in bees is set in the place occupied by the strong colony. This should be kept up until all the colonies are as near alike in regard to strength as it is possible to get them. After finishing such work, however, it is generally found that the plan is not very satisfactory; hence it is well to prevent such drifting on the part of the bees in the future.

### HOW TO PREVENT DRIFTING.

In order to prevent this state of affairs it is necessary, first, to understand what causes the trouble. Improper methods in wintering account for some of it; for, if the bees are "just dying" for a fly, they are more likely to boil out of the hives without carefully marking their locations. This, of course, means a general mix-up.

Removing the colonies from the cellar on a very warm day also tends to cause drifting. The disturbance and the warm air together cause the bees to leave the hives in such numbers that they are almost demoralized. A large entrance is detrimental in this case, for it allows the bees to leave the hives too rapidly, so that, in a short space of time, the air is almost full of lost bees. A high wind aggravates matters, for this surging mass of lost bees may be blown to one side of the yard. It would seem that the leeward side of the yard (the side toward which the wind blows) would get the greatest number of bees; but such is not the case. I have found that the windward side gets the bees—that is, the side toward the wind.

Hubbard Bros., of Boyne Falls, Mich., had a peculiar case of drifting last spring. Their yard is located on a ridge, one side of which slopes to the east and the other to the west. The hives were set out of the cellar in the night, and in the morning the sun shone brightly and the bees on the east side were attracted out by the morning sun, and were flying strongly before those on the west side even started to fly. The result was that the bees from the west side were so attracted by the great commotion on the east side that a good share of them went over and mingled with the flying throng so that there were finally entirely too many bees on the side of the yard which got the sunlight first, while the other side had but a few. It seems to me that in such a case I would try shading the east side until the sun is high enough to shine on all the hives at once; and then when the bees have begun to fly to some extent the shadeboards, or whatever had been used for shade, could be removed. In this way it seems to me the flying of the bees could be regulated, especially if the precaution is taken to contract the entrance down to about $\frac{5}{8}\times 2$ inches.

It must be borne in mind that the bees from the strong colonies are the ones that make the great demonstration at the entrance, so that bees from other weak colonies are attracted to them. I know of no better way to regulate this than to contract the entrances of the strong colonies as explained above. This means that the bees from such hives can not fly any faster than those from the weaker ones, so that all are flying with about the same force.

If the hives are removed from the cellar in the early part of the season, before the weather gets too warm, there will be less mixing on the part of the bees when they fly for the first time. This is a good point in favor of removing the bees earlier, for such mixing is quite a serious matter to the honey-producer.

### THE BEST TIME TO REMOVE COLONIES FROM THE CELLAR.

Whenever the indications are that the next day will be a suitable one for the bees to fly I go to one of the clamps and remove all but about two inches of dirt from the straw that covers the hives. This is left on so that the bees will not try to fly before they are finally uncovered. In the evening, after it is so late that bees would not try to fly from the pits, I remove the rest of the dirt and the straw. When this is done, there is quite a demonstration among the bees on account of the fresh air which reaches them; but, since it is now so dark that they can not fly, there is no mixing. By morning the bees will have quieted down, since the nights are usually cool at this time of the year. As soon as it is light in the morning I quietly place the hives on the permanent stands, and hardly a bee will come out. By this time they are so used to the fresh air that they usually fly very moderately, and rarely get mixed up An ideal day for the first fly would be one when the air is warm but the sky hazy. With these conditions the flying is very moderate and there is no mixing.

Any colonies that are light in stores are placed in a row by themselves near the honey-house. This saves a good deal of work, and such weak colonies are not so likely to be forgotten as if they were placed in some remote corner of the yard, for they may be seen every time the honey-house is entered.

On this account they get better care than if they are scattered all over the yard.

STIMULATIVE FEEDING DURING THE SPRING NOT ADVISED.

For some reason, here in Michigan there do not seem to be many who practice spring feeding for stimulating. I can not say whether this is on account of the bad weather in the spring, which makes it difficult to get bees to take the feed when they need it most, or whether experience has taught the bee-keepers of this locality that a colony with brood-nest made rich with honey the previous fall is in better condition. All indications point to the latter cause.

There is one bee-keeper, however, Mr. E. E. Coveyou, of Petoskey, who thinks it pays him well to feed for stimulative purposes during the spring. I will let him tell his experience in his own words. He says:

"After the weather in the spring is settled, and the bees have begun brood-rearing long enough so that young bees are hatching, I aim to keep them breeding as fast as possible. Lest the weather should turn cold, or a frost come as it did last spring, I proceed to feed every colony at once. My experience last spring was quite serious. In one apiary 131 colonies that were fed continuously before and after the frost gave an average of 87 lbs. of honey to the colony. Another apiary, six miles from Petoskey, of 118 colonies, was not fed, although it was otherwise in just as good condition, for each colony had a good deal of brood started before the frost. I went to this apiary about a week after the frost, and, to my sorrow, I found that the bees had dragged out the drones, and the conditions seemed to be more like those in September This was when the raspberries were just coming into bloom. The yield from this apiary was 30 lbs. of surplus per colony; and if there was any difference in the two locations, this last apiary had the better one. I am sure that I could have obtained 4000 lbs. more honey from this yard if the bees had been fed 500 to 1000 lbs. of sugar syrup in the spring."

Remus, Mich.

## SPRING MANAGEMENT.

### Building Up Colonies for the Honey-flow; a Unique Scheme of Exchanging Brood between Weak and Strong Colonies.

BY OREL L. HERSHISER.

[Mr. Hershiser states in a letter that in this article he assumes two apiaries which are on an equality in every respect in the spring, the locality also being the same, in order to explain more clearly his plan, and to show the difference that would result from special care over that where no special care is given. The average bee-keeper will be able to make such modifications of the plan as his particular case requires.

Mr. Hershiser thinks that this has been the most effective plan for building up weak colonies and bringing the maximum of workers into the hives that he has ever tried. He has had some experience with the Alexander plan of placing a weak colony over a strong one, but has finally adopted his own plan in preference. Mr. Alexander has twice as much time and twice as much good weather after the 20th of June, so it is easier for the colony below, in his plan, to keep the extra amount of room warm enough for both queens to lay to their full capacity; and since he has until August to accomplish the desired result a little delay in the spring is not important. The Hershiser plan, on the other hand, contemplates getting all the queens to laying to their full capacity from the time manipulations are begun in early spring.—ED.]

Shall we have workers according to the harvest when it is ready? An affirmative answer to that question may mean a full and abundant harvest. A good growing season, and weather conditions favorable for the abundant secretion of nectar, will afford only a partial harvest, ranging from something less than a full crop to little more than nothing, according to the condition of the colonies, if they contain less than a full complement of workers. Let us not answer the question in the negative, but turn our attention to how we may with greatest effect build up the colonies to overflowing with workers for the honey harvest.

The great need of skill in handling the bees that survive is strongly emphasized when we remember the heavy winter and spring losses that recur so frequently, notwithstanding all the pains bestowed in fall preparation. Every spring finds many bee-keepers, even among the most careful and experienced specialists, with not only heavy losses, but with a large proportion of the colonies that have survived, in weak condition. However, let no bee-keeper be dismayed by heavy losses, but, rather, let him study how best to prevent them in the future. If the losses are heavy, above all let him make the most of the survivors, remembering, as many bee-keepers of long experience have observed, that a bountiful honey-flow nearly always follows a severe winter and spring.

Occasionally bees winter so well that there is little or nothing to do with them to better their condition; but more often every apiary of considerable size will come through the winter with the surviving colonies ranging all the way from very strong to very weak, and this condition exists whether the bees are wintered in the cellar or on the summer stand. Without some special care and manipulation, these weak colonies are of little or no service to their owner. Especially is this true of those apiarists whose main source of honey is clover or basswood, or both, as weak colonies have but a short time to build up and get in condition so early in the summer; but even apiaries so circumstanced may be made to yield a handsome profit, if skillfully managed, which otherwise, if there is a preponderance of weak colonies, would gather hardly enough honey for the following winter's stores.

On the first warm day of spring the apiary should be looked over with a view of supplying food to all colonies that are short, but they should not be disturbed except to supply such needs. I do not regard early stimulative feeding as desirable except, perhaps, to get one or two strong colonies in condition for early queen-rearing. All entrances should be contracted to small proportions—for example, what would amount

to one-half inch square to ½×2 inches. If packed for outside wintering the packing should not be removed until settled warm weather. If severe cold weather follows the setting of the bees out of the cellar the entrance to the hives should be contracted to a fly-space for only two or three bees; and if the hives have a flat cover an additional flat board laid on the cover will help greatly in conserving the heat of the colony. Tar-paper wrapping of the hive is recommended by a few specialists whose success in honey production gives great weight to their opinions. I have not had occasion to try it. The gist of the whole matter of early spring management is to keep the colonies warm and dry; and, having seen that they have plenty of stores, let them alone until settled warm weather.

It is a waste of time to attempt to unite weak colonies early in the spring. Usually the uniting of several weak colonies will result in one colony no stronger than if it had been left undisturbed by the addition of other bees.

When settled warm weather has come, and all danger of spring dwindling has passed, it is time to get busy with active preparation of the colonies for the harvest. Generally speaking this season is about apple-blossom time in the northern and eastern States and the southern Canadian provinces.

There are several methods of building up colonies, in anticipation of the honey-flow, employed by specialists; but I purpose describing only the one that has given the best results in my own experience. For the purpose of more clearly illustrating this method let us suppose a good-sized apiary, one hundred colonies of which have come safely through the spring-dwindling period after a severe winter and spring. Upon examination we find that of these hundred colonies twenty-five are strong, and bid fair to be running over with bees by the commencement of the main honey-flow (white clover), which will open in five or six weeks, and be in its height a week thereafter. Of the seventy-five remaining colonies, fifty are in medium condition, with from three to four L. combs fairly well filled with brood, and twenty-five colonies are weak with from two to three L. frames containing brood. Assume that it will be a good honey season and a good location, and that the twenty-five strong colonies will, without manipulation, other than supplying the needed supers, store an average of 100 lbs. of surplus honey, or a total of 2500 lbs., and that each will cast one swarm which will gather winter stores, any surplus from swarms being credited to the parent colonies; that the fifty colonies in medium condition will gather enough honey on the average for winter stores but no surplus, the assumption being that there is no fall flow, and that none of these will swarm, and that the twenty-five weak colonies will rear enough bees and store enough honey during the season to make eight good colonies ready for winter when doubled up in the fall. From this assumption the net returns, not counting labor or expenses, would be 2500 lbs. of honey and an increase of eight colonies, or 108 colonies fall count. At the close of the season the possibilities of this apiary, if it had been in the pink of condition for the honey-flow, is plainly pointed out. Instead of a net crop of 2500 lbs., not counting labor or expense, and an increase of eight colonies, there would have been nearly or quite 10,000 lbs. of honey, and a liberal increase amounting to approximately 100 per cent, or, instead of the increase, a corresponding increase in the amount of surplus honey, all of which is evidenced by what the 25 strong colonies accomplished. The apiary has yielded less than one-fourth of its latent possibilities. That is not enough for the progressive bee-keeper. Let us, then, diligently inquire how we could have made those seventy-five profitless colonies yield at least a fair profit.

It is well known that the egg-laying capacity of the queen is not necessarily impaired by reason of the colony having dwindled to small proportions. A young vigorous queen in a dwindled colony has as much of latent value stored up in her as her equal in a populous colony, and she is willing and anxious to yield it up; but to do so she must have the proper environment. Dwindling is probably due to a variety of causes other than low vitality of the bees, and the progeny of the queens of dwindled colonies are as likely to be extra vigorous honey-gatherers as otherwise. In fact, dwindling may be the result, in some cases, of so much vigor in the bees that they venture out for water and nectar in weather so cold as to cause their destruction. Populous colonies of such bees are the ones that roll up a bountiful surplus if it is to be had. The importance of getting as many as possible of the progeny of such queens into the honey harvest is, therefore, apparent. It is equally clear that, for lack of warmth, a weak colony is incapable of incubating many of the eggs the queen might lay, or of nurturing the young bees. If we can so manipulate our colonies as to secure the maximum of egg-laying of all our queens at the season which will put the largest possible force of vigorous workers into the harvest, it is plain that we shall be far and away ahead for our pains in the amount of honey secured by the close of the season.

### HOW TO EQUALIZE WITHOUT WEAKENING THE STRONG COLONIES.

Let us classify the colonies comprising the apiary in the above illustration into three groups, placing the twenty-five strong colonies in the first, the fifty of medium strength in the second, and the remaining twenty-five weak colonies in the third class. This classification is made without changing the position of the colonies in the apiary, and is made when settled warm weather arrives and spring dwindling has ceased. Now go to one of the weak colonies and select the two combs containing eggs and brood, and shake the bees clean therefrom into their own hive, leaving no brood unless it be a

comb from which the young bees are emerging in considerable numbers. Then go to one of the strong colonies and select as many combs well filled with capped and hatching brood as were taken from the weak colony, and replace them with the combs taken from the latter. Shake most of the bees from these combs of hatching brood into their own hive, being sure not to take their queen. Give one of these combs to the weak colony from which the combs of eggs and larvæ have been taken; and if it has bees enough to care for both of them they may be given; otherwise one of these combs of hatching brood may be used in another of the colonies of the third class. All the colonies of the third class should be thus supplied with combs of hatching brood from the colonies of the first class; and the poorly filled combs of eggs and brood from the colonies of the third class should be given to the colonies of the first class in exchange. This manipulation will result in a rapid increase of bees to all colonies in the third class. As the young bees emerge the queen will occupy the cells with eggs, and the addition of so many young bees emerging from the full combs of capped brood that have been supplied will create heat enough to induce the queen to fill one or two additional combs with eggs as fast as her capacity for reproduction will admit. Having commenced these manipulations from four to six weeks prior to the opening of the main honey-flow the efficiency for honey-gathering of the colonies of the first class has been very little, if any, impaired, as the queens in these populous colonies will immediately occupy the remaining cells in these exchanged combs with eggs which will develop into field bees in time to be of the greatest use in the forthcoming honey-flow. Swarming will undoubtedly be retarded in the strong colonies as a result of the curtailment of young bees at this time; but, if delayed or defeated, it will result in enough more honey to amount to a full compensation. A swarm thus retarded will be enough larger and better to be well worth having when it does finally issue.

Buffalo, N. Y.

*Continued.*

[The plan here outlined in the last paragraph we consider excellent, and we are sure it will work. The special feature of it is that it allows all queens to lay to almost their full capacity, whether they have strong colonies or not.—Ed.]

## SPRING PROTECTION.

### Paper Winter Cases.

BY N. E. FRANCE.

In the Northern States spring protection is of great importance. With eleven years of early spring inspection of bees in Wisconsin I find that the general causes of weak colonies are old queens, shortage of honey, and unprotected hives. Quite often in one neighborhood I find one apiary in which nearly every colony is weak and several dead, while quite near will be another apiary with strong colonies. I at once seek the cause. I always want young queens from strong colonies in early fall (August) so as to get my hives filled late in the fall with young bees. Young queens in early spring also begin brood-rearing earlier, and have plenty of young bees to take the place of the old bees fast dying with age. As for fall feeding, my old statement is still good—*a little too much winter stores will be all right in the spring.* Every time I find strong colonies in the spring, plenty of stores are in the hives. "More in the feed than in the breed" is true.

I am surprised that in the cold climates where we wear overcoats many take the bees from the cellar in a tender condition, and do not place an overcoat of building-paper or an outer case around the hive until settled warm weather. In many places while inspecting apiaries in the spring I have asked the owner to wrap half the hives with black building-paper and see for himself the results. *In every case it has convinced the owner that the sudden changes of spring weather did not affect the colonies in protected hives, while the others continued to dwindle and die.* I always want an apiary in a location protected from the high winds.

If spring feeding must be done, sealed combs of good honey with cappings partly scraped off, and placed next to the cluster of bees, give satisfaction. Warm liquid honey or sugar syrup makes good spring feed if needed; but I prefer my spring feeding in the fall.

Platteville, Wis.

## SPRING MANAGEMENT.

### Preparing Supers; How to Put Starters in Sections.

BY DR. C. C. MILLER.

I want to say some words especially for producers of comb honey with not much experience.

In starting out in producing honey it will very likely occur to you, without my suggesting it, that you should feel your way somewhat carefully, economizing wherever it is possible. You can economize in the matter of foundation. Instead of filling the section you can use triangular starters coming half way down, and the expense will be only one-fourth as much. Instead of using super-springs you can save expense by using wooden wedges costing almost nothing. You can get along with only two supers—yes, you might save by having only one super for each colony, emptying out the finished sections and filling again as often as needed. By waiting until the honey-flow is on before getting any sections ready, you can tell better how many sections you will need, and save the expense of having a lot of su-

pers filled with sections lying over till the next year, or may be longer.

With regard to practicing all that kind of economy, I have a single word of advice—*don't*.

Let us take the last item first. I can't take the time to give you all the reasons for it, but I advise that you get ready, before bees fly, all the supers of sections you will get ready for that year. One of the reasons for it is that you will not then be caught with a heavy flow of honey, no dish ready to catch it, and a lot of honey lost while you send off to the supply-dealer for the dish.

How many supers of sections shall you have ready in advance? In the first place you should have for each colony one superful of sections that you deliberately count on as not to be filled at all *that* season; for toward the close of the season there will come a time when you think no more room will be needed, and yet there is a possibility that some colonies may need it. You don't know just which they are, and the safe way is to give the extra room to all. Given on top, the bees will do little or nothing with it if they don't need it; and if you take it off as soon as the bees stop storing, it will be all right for a future harvest. Besides that extra super you must have enough ready, not for an average season, but for the biggest season that may occur. If you can find out that in the past the biggest season that ever happened yielded an average of five supers per colony, then you must have ready five supers and one extra, or six supers in all for each colony.

"That's a lot of expense every year for nothing?" Look here. Every year for many a year I've had my house insured against fire, and have paid out a lot of money for nothing, for my house never burned down. I expect to keep on paying, and I don't expect my house to burn down; but if it should—see the point? Same way about insuring against loss by not being ready for that big year.

Let me earnestly advise that you invest in at least one super-spring for each super. With a wooden wedge you can make the sections crowd up tight, perhaps even tighter than with springs, but they'll not stay so. The sections will shrink, and then they'll be loose unless you have springs that will follow up and keep crowding in spite of the shrinking.

Just as earnestly—yes, a little more earnestly—I want to advise that you do not make the mistake of trying to economize on foundation. You know it is generally believed that 50 per cent more extracted honey than comb can be obtained—some claim two or three times as much. That's because the bees are saved the labor of building comb for the extracted. Well, don't you see that at least part of that labor is saved by having full sheets of foundation? and so the crop ought to be increased by that much.

Another thing: The chief secret of preventing brood in sections is to have them filled full of *worker* foundation. If only a small starter is used, the bees are pretty sure to build some drone comb in the vacancy, and then the queen will come up for the sake of laying in the drone-cells. With full foundation in sections it is so rare a thing for the queen to come up that I never think of having an excluder under sections.

A very important item in this connection is the manner in which the section is filled with foundation. Let the starter reach clear down to the bottom-bar, and when warmed up by the bees it will bag and buckle. To avoid that, the starter must fall a little short of reaching the bottom. There will then be no buckling, but another trouble arises. In too many cases the bees, instead of fastening the foundation to the bottom-bar of the section, will gnaw away a passage beneath it, making an unsightly section and one not safe for shipment. The case is aggravated by the fact that, when there is a space below, there is likely to be more or less space at the sides.

Some have fastened the foundation on all four sides with satisfactory results, but others who have tried it say that the foundation still bags, as reported especially by E. F. Atwater.

To solve the problem of having the comb well built down to the bottom, and at the same time to have no bagging, the vacancy to allow for stretching must be, not clear down at the bottom, but a little higher up. This is accomplished by having the starter in two parts, the bottom starter standing up about $\frac{5}{8}$ inch, and the top starter coming down within $\frac{1}{8}$ inch or so of the bottom starter. With such starters coming within about $\frac{1}{16}$ inch of the wood at the sides, I have had no trouble in getting tons of sections beautifully built out on all four sides. Even if the sections are not to be shipped, the increased beauty of appearance pays well for the little extra time required to put in the two starters; for it requires no more foundation than for a single starter reaching down nearly to the wood.

To those who have never tried it I can hardly commend too highly the use of the bottom starter.

Marengo, Ill.

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### HONEY AS A FOOD.

THE *Prairie Farmer* publishes the following:

> Late investigations lead to the belief that honey, the earliest form of sugar that human beings could obtain, is still about the best. It is counted, as the result of these experiments, among the most nutritious and delicate of foods. Not only does honey seem to act as a cure for diseases of the throat, but as a somewhat remarkable purifier of the blood. The only obstacle in the way of its more general use appears to be that many people can not eat it without stomachic pain.

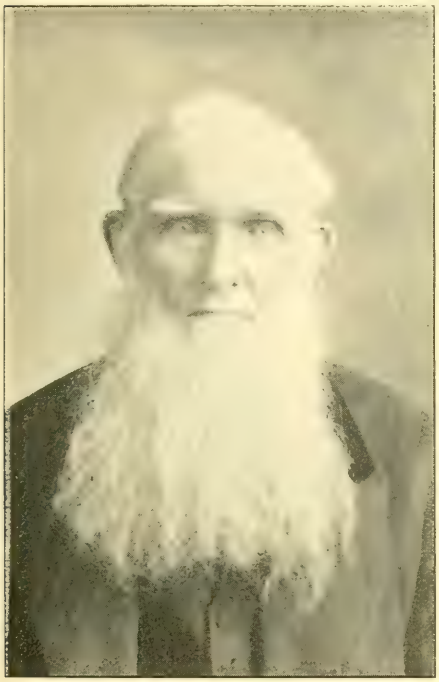
We wonder where the editor of the *Prairie Farmer* obtained the idea that honey causes stomachic pain. To those who are not used to it, honey tastes so well that they are induced to eat too much of it when the chance is given them. It is unfair to blame the honey for this indiscretion, however. Please place the blame where it belongs.

## E. FRANCE.

### Trapper, Naturalist, Bee-keeper, and Fruit-grower.

BY E. R. ROOT.

Mr. Edwin France, father of N. E. France, General Manager of the National Bee-keepers' Association, passed away on the morning of Feb. 7, at the ripe age of 84 years. But the senior France was not illustrious simply because of his illustrious son, but for what he has done himself. He produced, during the 80's, some immense crops of honey, and at one time he was regarded as one of the most successful bee-keepers in Wisconsin. Beginning in 1880, and all during that decade, and till 1895, he was a frequent and valued contributor to these columns. He began his writing about the time the present editor began to take charge of this journal. Looking back over these 25 years and more, I take just a little pride in having "discovered," as I believe, a real and original genius—one whose articles fairly bristled with practicalities, for whatever he undertook paid.



E. FRANCE.

While not an educated man, it was very evident that E. France was a wonderful student of nature. Incidentally I learned that, through his early experiences as a trapper, he came in close contact with animal life, especially that in its wild state; and when it came to knowing bee nature he was one of the best-posted men in our ranks. He was indeed a very keen and close observer—a man who could see not only beauties in nature, but turn his knowledge to a practical account. He made money, not only with bees, but in growing fruit and in farming, and, what was more, he had a faculty of telling others how to do it. No wonder that the junior France, under the tutelage of such a father, has been so useful a man to the bee-keeping interests at large. To be really *useful* means far more nowadays than to be only great. The world, though somewhat tardily, is beginning to see this.

The senior France really began bee-keeping about the year 1870; but he had had considerable experience some years before that. Starting with 123 colonies in 1871 we find him making a gradual increase until 1886, when with 395 colonies he took nearly 43,000 lbs. of honey, increasing to 507 colonies. While he had some reverses he seemed to have a faculty of keeping up these remarkable yields for a number of years. But during these days he had the support of a son who seems to combine all the qualities of his father, and who, in later years, assumed charge of the bee business of E. France & Son.

The senior France was a believer in large hives and strong colonies. Starting with a very deep frame he finally settled upon the Langstroth, adopting what is known as the France quadruple tenement hive. This contains four powerful colonies, the same being wintered outdoors, for the hive is double-walled. His honey-extractor (for he produced only extracted) was of the non-reversible type; and with this simple machine it was remarkable the amount of honey he could take in a day.

I said that Mr. France was a naturalist, and so he was; and being one of the pioneers he trapped and hunted during the winter, at which times he endured all kinds of hardships, many and many a time the Indians camping on his trail. The stories he could and did tell of wolves and wolf-hunts would doubtless interest many of our boy readers, for he knew wolf nature as very few men do. Too bad that some of his experiences in his early life could not have been put in book form. I can imagine that, during his declining years, he must have smiled broadly at some of the nonsense written by nature-fakirs, especially when they attempt to tell some of the wonderful performances of bears and wolves.

But if I were to attempt to give a complete life-history of the elder France I would also have to write a biography of his son, N. E. France, for their lives were very closely interlinked. But our older readers, at least, I assume, are familar with the fact that the junior France is not only the General Manager of the National Bee-keepers' Association, but foul-brood inspector for Wisconsin, president of the Wisconsin Bee-keepers' Association, and lecturer at farmers' institutes. The fact that he has served in these various capacities for so many years is ample proof of the appreciation in which he is held. Indeed, his genius and ability have not only

been recognized in his own State of Wisconsin, but he is known and respected by the two or three thousand members of the National Bee-keepers' Association.

The senior France has been in failing health for a number of years. He had a fall last October from which he never fully recovered, and which was really the immediate cause of his death. During the time of the last meeting of the National at Harrisburg, Mr. N. E. France felt that he would not be able to leave his father; but the latter, I understand, urged him to go, which he did. It must have been a comfort to the old father in his last days to learn of the sincere appreciation in which his son is held by the members of the National, as was shown at the Harrisburg convention.

## HENRY ALLEY.

BY W. K. MORRISON.

The readers of GLEANINGS have already been informed of the death of the veteran queen-breeder whose name is inscribed above. The Salem, Mass., *Evening News* of Feb. 11 thus alludes to the event:

Henry Alley, one of the best-known and most respected citizens of this town, died at his home on Larch Row last night, aged 72 years, after a brief illness of heart trouble.

He was born in Newburyport, but had lived in this town practically all his life. He was long active in town affairs, and was frequently heard at town meetings. He had served as a police officer, on the board of health, and as cattle-inspector for many years. He was an ardent Republican, and had long been a member of the town committee.

Mr. Alley was known all over the county as an expert in bee culture, and had edited many standard works on that topic. His queen-bees and a patented appliance for handling bees were sent all over the world. For the last five years he had done a big business in curing hams, he having devised a process which won him much fame in this line.

Thus disappears from view one of the early lights of American apiculture, the last of a brilliant galaxy which included such names as Langstroth, Quinby, Gallup, Hetherington, Wagner, Grimm, King, Cary, and Mrs. Tupper. He was the pioneer in scientific queen-rearing, and did much to place America far in advance of all other countries in bee-breeding—a lead which it still maintains.

Of course he had the advantage of being first in the field; but this does not detract in the least from his reputation, for he had to blaze out his path alone and unaided To his credit be it said he was one of the first to appreciate the supreme value of Langstroth's invention, and always vigorously defended him when others attempted to lay claim to the rights of the father of American apiculture. Mr. Alley was no mean inventor himself, for, besides inventing and devising a system of queen-breeding, he also invented the Bay State hive, Alley's drone and queen trap, Alley's nursery cage, and baby-nuclei hives.

It may be well to state that here in Medina, after faithfully trying all sorts of devices, the queen-breeders of The A. I. Root Co. have returned to a modification of Alley's baby nuclei as somewhat superior to any other. They have also returned to the use of Alley's nursery cage and nursery frame, and that, too, after experimenting with and using many similar devices

It may be well to say something right here about Mr. Alley's system of queen-breeding. He never practiced "grafting," but, on the contrary, held it was very injurious to the young queen. One reason he gave was that handling so de icate a creature with an ear-spoon is hurtful; also that it is treated as a worker for two or three days, and for that reason is stunted for want of royal jelly at a critical time.

He claimed for his larvæ that they were

HENRY ALLEY.

fed royal jelly immediately they hatched from the egg. He laid special stress on this point; but it must be admitted that very fine queens are also reared by the grafting process which is now so popular. It is, however, only fair to say that some of the very best queens ever used here at the Home of the Honey-bees were purchased from Mr. Alley, and it is well known his queens were uniformly good.

One of his pupils was Mr. E. L. Pratt, better known as Swarthmore, whose system of queen-raising is based on that of Alley's.

As already intimated, he commenced bee-keeping very soon after Langstroth's hive appeared, and very soon thereafter proceeded to contribute to the pages of the *American Bee Journal.* He was severe on what

he thought was wrong, and for that reason made some enemies; but he was not resentful himself when others criticised him.

In 1883 was published "The Bee-keeper's Handy Book," by Henry Alley, wherein he gave the world the benefit of his 27 years' experience, of which 24 had been as a specialist in queen-breeding This work was well received, and 2000 copies were sold within a year and a half. Much of it is taken up with his method of rearing queens. This, being well illustrated and clearly described, enhanced his reputation as an expert bee-breeder.

As is well known, he reared his queens from the egg by cutting a comb containing eggs into narrow strips (about three cells wide). A certain number of the eggs were (or are) destroyed with a match-stick, so that those which are left may have ample room to allow of the construction of a queen-cell. When the strip has been duly prepared, the under side of it is dipped into melted wax, and by this means it is attached to the lower edge of a comb which has been built half way to the bottom-bar. The bees seeing the cells arranged mouth downward, and every thing so handy, proceed to build queen-cells around each egg; and as they are absolutely queenless, yet strong in numbers, they seldom fail to rear a large proportion into good queens. It is true that the various operations require a lightness of touch and a delicacy of treatment which some are incapable of; but Mr Alley always maintained that such people ought not to attempt to rear queens.

In 1883 Mr. Silas M Locke, of Salem, Mass., one of Mr. Alley's students, started his sprightly bee journal, *The American Apiculturist*, and in this paper the subject of our sketch had the opportunity to state his views freely. It was one of the best bee-papers ever started in this country; but, most unfortunately, Mr. Locke died just as the journal had succeeded in fully demonstrating its usefulness. Mr. Alley then put on the editor's harness; but journalism was not his forte, and the paper died a natural death in 1894.

From time to time Mr. Alley issued his book on queen-rearing, which consisted of a part of his "Handy Book," adding little improvements and inventions which he had made in the interim. He also kept up his queen-breeding operations to the last, having established a reputation for the high quality of his queens.

One of his last acts was to write (Jan. 24) a personal letter to Mr. E. R. Root, in which he expressed his appreciation of GLEANINGS in this wise:

"Had I been well I surely would have sent you some strong praise of the several late copies of GLEANINGS. You have outdone even yourselves. No magazine or publication I have seen comes up to the beauty, both outside and in, of any copy of GLEANINGS."

Peace to his ashes. He was a great bee-keeper.

## STORM-DOORS.

### Bees Flying Out on Bright Days and Dying on the Snow.

BY E. R. ROOT.

On page 96 of our issue for Jan. 15, in a footnote to the article by C. H. W. Weber I referred to storm-doors, so to speak, that we had placed on all of our outdoor hives, embodying a principle suggested to us by Mr. A. J. Halter, of Akron. It will be remembered that he has been using them for over two seasons, and believes them to be not only a saver of bee-life, but a protection from piercing winds which might otherwise blow directly into the entrances, thus chilling the colony.

As we are now approaching spring, a further report on these storm-doors ought to be made. We had been having a very cold spell of weather, for us, during which there had been a heavy fall of snow. On the 10th and 11th the weather moderated very decidedly. There was a clear sky, and the sun shone with a brilliancy that we do not often see in February. The hives had storm-doors *a la* Halter over all entrances, and I was curious to know just what the effect of these might be in keeping the bees in. The atmosphere was balmy from 10 to 2 o'clock on both days; but there was such a large amount of snow I was certain that any bees that lodged thereon would never return to their hives. The storm-doors, because they kept out the sun, had the effect of keeping the bees in the hive till about the middle of the day; but as the atmosphere warmed up it percolated through the entrances to the colonies. The bees, allured by the warmth, but not by the light, came out. The air was full of them; and the way they clustered over the hives was alarming I did not fear so much for those that lodged on wooden objects or on bare ground as I did those that fell directly on the snow. These, I was sure, would never get back, and they did not. But those on the hives and on ground where there was no snow, after resting for a few moments, would take wing and return to the hive.

In order to give the reader an idea of what was prevailing in our yard among the hives I am reproducing here a number of photos which I took on the occasion. Fig. 1 shows one of our regular double-walled chaff hives, over the entrance of which was leaning a so-called storm-door. Just notice how the bees were clustered over the hive and on top of it! They had discovered that it was warm, and the temperature induced them to come out and have a playspell and void their feces. While I was taking the pictures my clothes became badly spotted—not from unhealthy droppings, but from those as a result of the natural retention on the part of the bees that were wintering in an ordinary normal way.

I do not care how well the bees are doing; if they have been confined in the hive for over a week, either summer or winter, they will spot objects round about. But this spotting does not indicate any condition that is

alarming. But when bees come out at the entrance and stain the front of a hive with a very dark and ill-smelling stuff, then the condition of the colony is dangerous if not hopeless, especially if there is no immediate prospect of settled warm weather within the following month. But, to return to Fig. 1:

FIG. 1.—HOW THE BEES TOOK AN AIRING ON A WARM DAY IN FEBRUARY AT MEDINA.

I took a photo of this particular hive because it shows admirably just how the bees were clustering on all the hives in which there were strong colonies. The bees on the cover had taken a flight, had voided their feces, and now, apparently, were taking a rest preparatory to going into the hive. Those bees that lodged on the snow were immediately chilled; but for some reason, fortunately, the great majority of the bees lodged on some wooden object, especially on the hives. At half-past one I had some fears that they might not return; but as the atmosphere turned a little cooler, and the sun was going down, all these bees took wing and reentered their hives, and at half-past two there was scarcely a bee to be seen on any wooden object; and the few that were in sight were keeping around the storm-doors about as shown in Fig. 2.

Mr. A. J. Halter, having visited us a few days previously, on looking at these lean-to boards expressed the conviction that our little notches on the front edge were altogether too small—that the bees, many of them, would not pass through them, and, failing to discover the side passage, would become chilled and die. But this certainly did not prove so in our case. By reference to Fig. 1 it will be noticed how the bees were going through the side passages, seeming to have discovered that this was a more rapid way of getting into the hive. While neither photo shows it, I found in many instances where the bees were crawling through the notches on the front edge of the board.

On the 14th I visited Mr. Halter at his apiary in Akron, and found that he had the same arrangement except that his notches were very much larger. He explained that, according to his experience, bees would not go through those small notches—that we would be losing many bees; that the large notches were almost a necessity, as otherwise the entrance would become clogged with the dead.

FIG. 2.—THE MODIFIED HALTER STORM-DOOR AS USED ON THE OUTDOOR HIVES AT MEDINA.

On returning home I instructed our apiarist to examine the entrances at random; but in no single case could he find that there had been any clogging; for on the nice warm day spoken of the inmates of the hive carried out their dead, leaving the passageway clean.

It is my own private opinion that these storm-doors do not prevent bees from flying out on bright alluring days, but only tend to discourage such coming out; that, moreover, they do, to a very great extent, prevent

piercing winds from blowing in directly on the cluster of bees, and I therefore deem their use an advantage. Unless some untoward circumstances shall show otherwise, we shall use these next season.

But this can not be denied: That with them the bees still come out, and, alighting on the snow, die there. These bees are not superannuated nor diseased, as I found by picking up dozens of them that were chilled through and warming them with my breath. As soon as they revived they would take wing and fly direct to their entrance. Quite a number I smashed to see if the discharge from the intestines showed the least diseased matter; on the contrary, it seemed to be perfectly healthy—proving conclusively, as I believe, that, had there not been any snow on the ground, they would have added greatly to the prosperity and strength of the colonies to which they severally belonged.

I am thoroughly convinced that the flying-out of bees, no matter how warm the atmosphere, when snow is on the ground, is attended with considerable loss. This loss is greater in mild climates, subject to occasional thaws, than in those localities where winter comes snug and cold, and continues so until spring arrives, which, when it does arrive, continues to be warm. In a locality such as we have here in Medina, we have warm and cold weather off and on all through winter. It is these bright sunny days when the snow is on the ground that causes considerable mortality.

This brings me to the question, "Should we not keep the bees shut in the hives until warm days?" You will remember that I tried this two winters ago, shutting them in with wire-cloth porticos, and then removing them on warm days. But the result was disastrous, for apparently a few bees would attempt to escape during the time of their confinement—that is to say, a few superan-

FIG. 3.—PAPER WINTER CASE AND HALTER STORM-DOOR.

nuated or diseased ones would try to get out of the hive, which, failing to do, would stir up the whole colony. The cluster would expand, become chilled, and in the attempt to ward off the cold would consume largely of the stores, and this would lead to dysentery. I don't *know* that this was what happened; but I surmised it from indications.

FIG. 4.—WINTER CASE OF SECOND-HAND WRAPPING-PAPER AS USED AT MEDINA.

Even though I removed the porticos on bright suitable days, mischief had been done; and most of the hives on which these porticos were attached, the same being removed when the weather favored, resulted in the death of the colony.

THE WEBER ENTRANCE-CONTROLLER.

It will be remembered, also, that on page 96 we illustrated the Weber device. This is a contrivance to let the air pass through freely into the hive through darkened passageways and at the same time confine the bees within the hive. When the operator desires to let them have a flight, on suitable days he can do so by lifting a slide so that the bees of the colony may pass out direct.

The question may arise whether or not while confined at other times they would not stir up a commotion within the colony, resulting in disaster, as was explained in the case of the porticos just mentioned. But in the Weber device all rays of daylight are entirely shut out, and the only way by which the bees would know their entrance would be from the direction of the fresh air which would pass through wire-cloth partitions, closing the darkened passageways. Right here, I suspect, is a vital difference between the Weber device and the wire-cloth porticos which allow the light from without to pass freely into the entrance.

As explained on page 96, we had put some of them into use; but so far we have been unable to come to any conclusion, as there are no indications at present that would seem to warrant us in forming an opinion either way.

Figs. 3 and 4 show a hive protected by heavy wrapping-paper, the folds of which are held in place by a short piece of rope or twine. These colonies in these two hives are apparently wintering just as well as those in double-walled chaff hives; and while the paper is not put on very neatly, yet for the purpose of experiment we took second-hand wrapping-paper, just as it came, and folded it over these two hives as shown. To prevent leakage from the top we put on regular hive-covers.

Fig. 3 shows the regular Halter storm-door and how the bees were clustering around over the top of the hive, the photos having been taken the same day as the other two.

We hope to give, about six weeks hence, a full account of how these two colonies have wintered. We might remark, however, in closing, that the paper on No. 3 was hardly wide enough to cover up the entire hive as it should. But as many of our subscribers have to take what they can get, we took any old thing we could find.

A HONEY-PLANT THAT BLOOMS AFTER THE FIRST FROST IN THE FALL.

## A FALL HONEY-PLANT.

### Blossoms that do Not Appear until After the First Frost.

BY W. W. CRIM.

I am sending you a picture of a colony of bees which is conveniently near the flowers. I have been keeping bees here for about 25 years, and until three years ago I never had a fall flow of honey. Five years ago this winter we had a very heavy snowstorm followed by a strong west wind which carried a black dust with it that settled all over the snow. It is generally supposed that seeds of this plant were carried here by the wind and lodged with the black dust. The seeds are very light, and arranged in the seed-pod similarly to those of the thistle. The small white flowers which have a yellow center appear very late in the season, generally after there has been a light frost; but, although it is so late, the bees get considerable honey from them. The first season the plant bloomed here the bees gathered about 15 lbs. of honey per colony from it. The second year I think I received fully 20 lbs. per colony, and the last season only about 10 lbs., as we had some frost almost every morning it was in bloom. If this weed (I know no other name for it) did not bloom so late it would do us more good than the white clover. Clover can not be depended on for a crop of honey here, but this weed has never failed entirely. The worst trouble is that it blooms at a season when the weather is very uncertain. The bees are able to work on the blossoms only a small part of the time. It takes a pretty hard freeze to kill them, for I saw bees working on them after we had had more than one-fourth inch of ice this fall. Stock of all kinds will eat them. The seed comes up in the spring, making a plant that looks much like "white top," and these stand until the second year before blooming. They grow everywhere except where the stock get at them. I have a small patch in an unused part of my bee-lot where they are as high as my head, and so thick and strong that I can scarcely walk through them.

The honey is almost as white as that from clover, but has a slightly yellow tinge, and a very rank, disagreeable smell and flavor when first gathered—much worse than basswood; but when fully ripe it has scarcely any smell, and a rather pleasant flavor. It seems to be good for winter stores, although it candies early in the winter. I wish it would bloom twenty or thirty days earlier in the season, for I hate to see so much sweetness wasted on account of a little tardiness each season.

Pekin, Ind.

## ORNAMENTAL HIVES.

BY W. E. STEINER.

Seeing so many different kinds of ornamental hives I decided to make some that would be both ornamental and useful. I got the style from the Pearl Agnes, and suggestions from different persons, and the hive shown in Fig. 1 was the result.

It is a standard eight-frame hive, the sides being framed together from 2 by $\frac{7}{8}$-inch yellow pine. After framing, openings through the sides, 6×15, are closed with glass on the inside and a tight-fitting door on the outside. The bottom-board is nailed to the hive, and the entrance is provided with a small door which, if closed, will have an opening only 4×$4\frac{1}{4}$. If the door is open, as during the summer, the entrance is $6\frac{1}{2}$×$\frac{7}{8}$. At both ends are removable plugs which act as ventilators. These holes are $\frac{3}{4}$ inch in diameter, and covered with wire cloth on the inside.

FIG. 1.—STEINER'S ORNAMANTAL HIVE.

FIG. 2.—A REGULAR HIVE MADE TO REPRESENT A LOG CABIN.

In the illustration the hive has one super; but there is also a second one. Each super holds 24 4×5 plain sections with fences

The roof parts from the super $1\frac{1}{2}$ inches below the eaves. At this point a flat cover is made across the gabled roof, making an open space in the gable, which is handy for storing bee-veils, records, etc. A door opens into this from the rear gable.

Fig. 2 shows a standard eight-frame hive with two supers containing 24 sections each. The outside is covered with willow wood, giving a log-cabin effect The hive is painted green, and the ends of the small logs red.

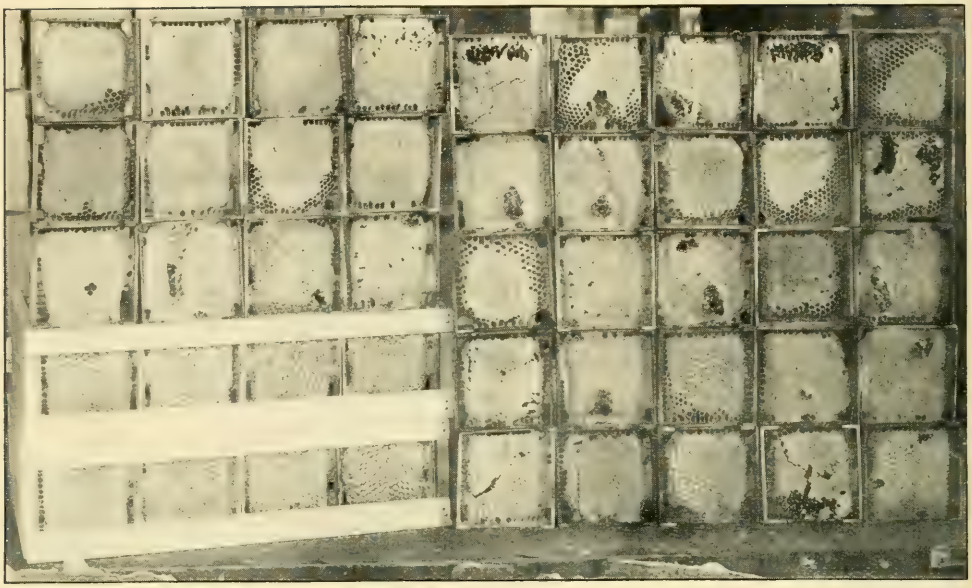
Myerstown, Pa.

## SEALED COMBS OF HONEY FOR SPRING FEEDING.

**The Practice of Extracting in the Spring and Feeding Back to Induce Brood-rearing, a la Alexander, Condemned; Spring Feeding of any Kind Not Favored, and Why.**

BY ALLEN LATHAM.

The editor, on page 1428, in a footnote to Stray Straws, invites subscribers to offer their experience and opinion. The Straw has reference to an article by Mr. Alexander, which appeared on page 1376. I feel strongly that Mr. Alexander errs in this matter—at least in recommending others to follow his custom; errs, because what does not succeed with him is succeeding with others, and



A SAMPLE OF A PART OF A CAR OF WESTERN HONEY WHICH WAS SOLD TO THE A. I. ROOT CO., AND GRADED NO. 1; SEE EDITORIAL ON PAGE 339.

also errs because spring feeding by syrup or even dilute honey is a questionable practice.

I have had almost no experience with buckwheat honey, and but little with candied sealed honey in spring. That such honey delays the building-up of bees in the spring is attested by Mr. Alexander. Such being the case, let him and others similarly situated follow his teaching. Let all others think twice before adopting his teaching.

Most of us are not situated as is Mr. Alexander. The stores in spring are liquid honey, or, in the case of previous fall-feeding, liquid sealed syrup. Such is the case with me, and allow me, therefore, to state my own experience along this line.

I have for years compared the building-up of colonies that were fed in spring with that of those which were let alone because of their abundance of sealed stores. I can not now recall one single instance in which the spring-fed colony excelled the other. I can recall a few instances in which the fed colony developed into a very satisfactory colony, but no case of marked superiority.

Locality may have much to do with these results, and I have figured it out as follows: The matter rests upon the pollen supply. If one is situated where the early pollen supply is sufficient and *reliable*, then the bees will respond well to spring feeding or to any kind of feeding. With me the pollen supply is most unreliable some springs. There are spells of weather when for a week the bees can not gather pollen. At such a time no kind of feeding will keep up brood-rearing. The queen may continue to lay, but all unsealed brood will be eaten by the bees, although that nearly matured may be sealed. If eggs are allowed to hatch, the young larvæ soon disappear. But let a warm spell come, the pollen be abundant, and every colony becomes endowed with a new lease of life. Within four or five days there will be great patches of glistening fat larvæ.

Some one breaks in here and asks, "Why doesn't such a state of the weather and scarcity of pollen affect the unfed colony with equal severity with the colony which has been stimulated?" There are three reasons at least. In the first place the unfed colony has not been overstimulated too early in the season, and hence the bees have not exhausted the pollen in sight.

Secondly, the unfed colony is uncovering a supply of pollen every day, pollen packed away the year before, and kept sweet and good under its sealing of honey.

Thirdly, the unfed colony has a greater store of pollen to begin with.

No one will deny the possibility of starting a colony into too rapid breeding and thus exhausting the pollen supply before the new pollen is sufficiently abundant. Such a thing may not happen with the expert, and probably does not with Mr. Alexander, if for no other reason than that he waits till about May first before beginning to stimulate his colonies with feed; but it is almost sure to happen with the enthusiastic beginner who will start in to follow Mr. Alexander's advice. The results are very disastrous—tired queen, discouraged bees, and a general apathy difficult to overcome.

That the unfed colony should have a better initial supply of pollen in the first place may not at first be evident, but the explanation is simple. As is well known, all normal

colonies keep a fringe of pollen about the brood-nest. As the brood-nest normally shrinks with the waning of the season, and the accumulation of honey increases, this pollen fringe becomes engulfed in the honey, and is preserved for spring consumption. There are several pounds of this honey-preserved pollen in every well-stocked colony. Such a colony in spring can increase almost to swarming strength without bringing into the hive any thing besides water. Even to the old and experienced bee-keeper the speed with which these combs of honey and pollen become bees is astonishing.

Far otherwise is it with the colony whose combs have been kept empty by the extractor, and which is fed in fall for winter, and again in spring for breeding. Such a colony stores as much as possible of its winter feed in cells free of pollen, for it is fed at a time when the brood-nest is no longer strictly normal as regards its fringe of pollen. Very little pollen is preserved, and such as happens to lie in open cells becomes sour or moldy. This pollen is unfit for breeding, is not relished by the bees, and so in such a colony the breeding does not go on prosperously.

Extracting the brood-nest in early May, to be sure, may not bring about such a result as is pictured in the preceding paragraph; but, even if not attended with loss, it surely is not worth while in this locality. My experience with my large let-alone hives proves this: As may be known to some of my readers, I practice a sort of happy-go-lucky mode of keeping some of my colonies. I have some 75 colonies in large hives—those having a capacity of over three cubic feet, holding a score of frames having dimensions exceeding those of the Langstroth frame. The brood-nest of about ten-Langstroth-frame capacity is in front, and is separated from the store-frames by zinc. The brood-nest is seldom disturbed except from necessity, sometimes for a year or more. When fall comes these brood-nests are heavy with honey and pollen, and are populated by a huge host, often as many as 40,000 bees. To open one of these brood-nests late in April would astonish you bee-keepers who talk about your colonies covering three, five, or seven frames at that season. Many of these colonies in April, if queen-right, will rival strong colonies in May. These colonies are never stimulated in any way. Nor are they molly-coddled in any way. Even their entrances are left unchanged in size the year round, the width of the hive and one inch deep, mouse-guarded by a *cheval-de-frise* of nails.

Some of these large colonies have on one or two occasions been fortunate enough to enjoy a flow of honey in May, and the results were most gratifying.

I therefore feel constrained to cry out against all spring feeding for stimulation. Having only good will for all who offer such advice, I must nevertheless denounce the advice as unsound. The advice is likely to bring disappointment, even if it does not bring any thing worse. There are times when we must feed in spring, but let us not create such conditions voluntarily. A queen which will respond properly to spring feeding will attend to her duties under any normal condition. A queen which will not fill her brood-nest under normal conditions, with combs of sealed honey about her dominions, can not be made to do it through any sort of feeding. Feeding her colony will result in clogging the brood-nest with honey or syrup instead of with bees.

Norwich, Ct.

## FEEDING BACK IN THE SPRING.

**The Alexander Plan for Extracting and Feeding Back in the Spring Not Indorsed; Spring Feeding Discouraged; Not too Much Honey but a Poor Queen the Cause of Little Brood.**

BY M. A. GILL.

I have been reading with much interest the article from E. W. Alexander upon the question of brood-rearing in the spring, and there are a few places in his plans upon which I should like to turn a little sidelight, so that beginners in nearly every place in the United States except around Delanson, N. Y., won't get it into their heads that they can extract three or four thousand pounds of honey (old honey) before fruit-bloom while getting their bees strong for the harvest.

There are several things except honey that are absolutely necessary to obtain before brood-rearing can be carried on successfully in the spring of the year. The first essential is a good queen; second, proper temperature, both inside and outside of the hive; third, natural pollen coming in if there is a scarcity in the hive.

The fact that a card of honey hung into one of Mr. Alexander's colonies in the month of May acts like a dummy and prevents the queen from spreading her brood across the hive proves beyond cavil or doubt that Delanson is a most wonderful spring location.

Either in Wisconsin or Colorado at this time of year it is neither necessary nor profitable to use the extractor to remove old honey; for just at that time of year (if the three essentials already mentioned exist) the bees start up an automatic reversible extractor so that I am more liable to be short three thousand pounds than to have a surplus.

In my twelve apiaries I have three that I judge are something like Mr. Alexander's, and some seasons they would get a little too much honey for their best good in brood-rearing, which I take away and haul to other yards that are destitute and exchange for empty combs; and I do not believe that the great mass of bee-keepers need have any fears about taking Mr. Doolittle's advice in giving combs of sealed honey in the month of May; for if conditions are right they will turn it into brood, and no other kind of feeding or fussing will avail any thing until conditions are right.

The question of *profitable* stimulative feeding in early spring is one that requires as

much skill and experience as any one branch of the business; and advice upon this important point can not be handed out like pills by a medicine-peddler. Each one must study his own particular field and flora, and ascertain when we need the workers. At any rate, don't commence stimulative feeding too soon; and if you commence at all, keep it up liberally until the flow comes; for bees that are being fed lose much of their hustle for natural stores, and await your coming like a beggar on the street corner. Like Mr Alexander, I too have been over the ground for 30 years, and will say I very much doubt if it pays to practice stimulative feeding, for the purpose of brood-rearing, in early spring.

But be sure to feed enough so there is no starving; and if you are not in a location where nature will back up good prolific queens for thirty days before the honey-flow, move to one that will, for there are plenty of such locations. As Mr. Alexander says, the month of May is the time for all bee-men to be most active, for we *must* have brood in this month; but I would rather my queens would save their strength and forces until this date than to do extensive early breeding.

Mr. Alexander speaks of neighbors' bees being too weak to work in supers, and says it is because there is too much honey in the brood-nest. Now, is he mistaken, or am I? for I think that, when a normal colony of bees has lived off from the stores in any hive from August until the next June, and the combs are still so full of honey that there is no room for brood, then that is a plain indictment against the queen, and it is her fault that the honey is there in excess.

I believe with Mr. Alexander that every hive should contain a large amount of empty worker comb during May and June; but what is worrying ninety-nine out of every hundred bee-keepers in the United States is that this comb will get empty too soon before the flow comes, so that a comb of sealed honey would not long serve as a dummy in most locations.

I think very likely that if Dr. Lyon had taken a picture of the *inside* of Mr. Alexander's hive the past spring, he wouldn't have found as many bees as he did on the *outside* of the hives one year ago. So we are all bound, more or less, by that inexorable law of nature that says you can not raise brood until the conditions are right. And there is *no* condition so favorable as natural warmth, a little natural honey coming in at the entrance, and natural pollen in abundance; and these conditions so often exist for thirty days before the main honey-flow that it does not pay to make stimulative feeding a part of our plan.

Longmont, Col., Nov. 4.

[Mr. Gill is always a valued correspondent; but in the foregoing he has quite outdone himself. A bee-keeper with 12 apiaries ought to know something about practical management; but when such a man disagrees with another strong man in the person of Alexander, the beginner may not know which way to turn. Our own experience, together with that of those who write on the subject in this issue, seems to support Mr. Gill. Indeed, we may say that the average beginner should avoid spring feeding if he can—certainly if the hive is well supplied with sealed stores.—Ed.]

## CELLAR VENTILATION.

**When and How to Set the Bees Out; Alexander's Spring Feeding Not Indorsed; the Let-alone Policy for the Beginners Favored.**

BY R. F. HOLTERMANN.

To me, from my youth up, agriculture in its various forms has appeared to give abundant scope for the highest exercise of intelligent thought and study. The person who pursues a cast-iron rule season after season in bee-keeping, or in other lines of agriculture, does not act intelligently, nor does he obtain the measure of success secured by the one who studies season after season, and who tries to acquaint himself with weather signs and conditions, and then seeks in his management to act according to these varying conditions. This is particularly true of spring management.

To those who have their bees on their summer stands all winter, having them packed, and provided with an abundance of good stores, I shall have nothing special to say. There may, however, be certain suggestions in this article which some might find to their advantage to act upon in future plans.

### WHEN TO SET BEES OUT OF THE CELLAR.

Those who winter in repositories must, toward spring, exercise some judgment as to when to set out their bees. General weather conditions, the condition of the ground upon which the bees are to stand, the specific locality of the apiary, the condition of the bees, the number of the colonies in the repository, and the nature of the repository, all must be considered in a decision upon this important question. After all this has been considered we must run our risk as to the nature of the weather in the future, no matter what our decision (setting out or not setting out). If the weather keeps cold, and the ground where the hives have to be placed is covered with snow, it is practically impossible to set out the bees. I have seen hundreds of bees perish, all belonging to one colony, because there was an insignificant coating of ice on the ground in front of the entrance when other colonies in the apiary, and without the small patch of ice, did not suffer. The location of my home apiary, where the cellar is situated, is well sheltered with elevations of land, timber, buildings, and fences. When the bees are set out they are in a very sheltered place, and they can be set out when others in a more exposed place would, perhaps, do better by remaining in winter quarters. Let me say here it is an immense advantage to have an apiary located in a place sheltered from wind; and the average bee-

keeper in village, town, or city has in this respect an advantage over the average country bee-keeper, particularly in spring, autumn, and winter. Right here let me put in a plea on the ground of beauty, comfort, and enhanced intrinsic value of property for those who own their homes, to plant more evergreen trees about their buildings and orchards.

From many years' experience so far as conditions will allow, I am an advocate of what might be termed early setting out. If many colonies, or a considerable percentage of colonies, have broken cluster; if they are uneasy, and readily fly to a candlelight in the cellar, the sooner the bees get a cleansing flight the better if they can do so with safety, especially if they will be in a sheltered place. The loss of vitality from day to day under conditions of unrest is very great. It does not take long to kill bees by worry, be it in or out of the cellar; and a cleansing flight has a wonderful effect in this direction. More than that, I am satisfied that one restless colony where hives are piled one above the other, and side by side, transmits that restlessness to others, and herein is one weak point in cellar wintering. The condition of the bees then as to the above points might influence me in deciding on the time of setting out.

The more bees there are in the cellar, other things being equal, the more difficult it is to keep them quiet when the outside temperature rises, for their activity adds *very greatly* to a temperature already too high. It is also very much more difficult to keep up ventilation when the outside temperature is about the same as that inside. In 1903 the first bees were set out by me March 14, the last, March 19; the first pollen was gathered March 19. In 1904, first, March 22; the last, April 5, at which date the buds had not even swelled. In 1906 the first pollen was gathered April 12. In 1907 the first bees were set out March 12; the last, March 18, and the first pollen was gathered March 29, after which we had several months of what we thought was altogether too much like winter to suit bees.

As to the manner of setting out, I should like to air the cellar well so that it will not be, as to purity of air, a great change to carry them out. I have followed with great satisfaction the plan suggested some years ago in GLEANINGS by E W. Alexander; viz., to set them out previous to the morning upon which we calculate they shall fly. The previous evening or early night is a good time. If they do not get a flight for a day or two after, I have found it an advantage. There will be less excitement when they fly; weaker colonies, and colonies not needing a flight badly, may not fly as soon as others do, and there will be less confusion and less loss to weaker colonies by having their bees drift to the hives where the bees are flying in great numbers; particularly is there this danger if the wind is blowing hard.

Having nearly an acre of ground in my apiary, and the bees scattered, when brought home in the fall, over the entire ground, and setting out only a part of the bees at a time (there are 500 colonies in the cellar now), and placing the first together in one part of the apiary, and all without regard to their previous location, I am thoroughly convinced that wintering them as I winter them, and confined for the length of time they are, bees, when they take their first flight, relocate themselves and do not return to last year's stand.

I do not think it good practice to seek to keep bees in winter quarters by changing the air at night and shutting off ventilation during the day. Such changes are too violent, and produce constant activity and brood-rearing. A colony perfectly wintered in the cellar should have no brood when placed on the summer stand.

### ALEXANDER'S PLAN OF EXTRACTING AND FEEDING BACK IN THE SPRING NOT INDORSED.

Under the heading of "Brood-rearing in the Spring," page 1377, last year, is a statement by E. W. Alexander which, in my estimation, would be dangerous for many to follow. After referring to combs of honey inserted in the brood-chamber for stimulative purposes about May 1, he writes, "If we uncapped them it was sure to start a bad case of robbing; if they were left capped, then they simply formed a division-board which prevented the queen from spreading her brood across the hive." With the latter statement I would heartily agree; but not with the former if the colony is strong enough to stand that kind of treatment, particularly if the work is done toward evening.

In the same column, however, so far as robbing is concerned, Mr. Alexander, to get rid of this objectionable robbing, suggests a remedy far worse than the disease. He states, "After realizing the folly of this erroneous method of spring feeding we commenced to extract all capped honey from the brood-nest about May 1, and in its place, when necessary, we fed a little warm thin honey or sugar syrup daily for about a month." How can there be a bad case of robbing from merely uncapping one comb, when there is no such objection to taking combs of honey and brood out of the hive, ex racting the capped honey, then putting back the combs wet with adhering honey? and if this handling at a critical time were not enough objection, I think the danger of unduly displacing the brood-chamber as to order of brood and pollen is great enough to warrant me in raising a note of warning, in all kindness, and saying *don't.*

Mr. Alexander's advice, to see that the brood-chamber is not clogged with pollen and honey, is good. Many a queen does not get proper room, yet more harm is done by the average bee-keeper in not having enough of these in the hive.

As to robbing, prevention is worth much. Discard bottom-boards, hives, and covers which, through defects, compel the bees to guard any thing but their entrance to the

hive. Take out combs which the bees can not properly protect by covering them, otherwise with cool nights strong colonies are out and flying the next morning and ready to rob before weaker colonies, owing to the chilling of the outside of the cluster, can become active and defend their hives and stores.

DON'T CHANGE THE APPEARANCE OF THE HIVE.

Mr. Jacob Alpaugh, Eden, Ont., in a conversation with me, pointed out the danger of changing during uncertain weather, and, after the bees had located themselves, the outside appearance of the front of the hive. This is sometimes done with shade-boards, etc. Once located as the bees fly out, they do not examine the front; and in cool weather, returning and finding a changed condition, they hesitate, fly about, and become chilled. He states that, if they once fall, they may again take wing; but they appear stupefied, and generally fly away never to return. I am satisfied that Mr. Alpaugh is correct in his observations and deductions.

In conclusion, let me say spring management is of great importance. The greater the inexperience of the bee-keeper, the less what he knows, the safer the *let-alone* policy after seeing that the bees have a good queen and plenty of stores. To those of more experience, a scriptural injunction will not be out of place: "Prove all things; hold fast to that which is good."

Brantford, Canada.

## BUILDING UP COLONIES.

**Colonies Divided into Three Classes; Swarms from the Strongest Hived with the Weakest; Strengthening Medium Colonies with Frames of Brood.**

BY WM. W. CASE.

In the spring every apiary contains three classes of colonies—weak, medium, and strong. The first are generally regarded as useless, by some as nuisances, and as having worthless queens; the second generally get in good enough shape for a little surplus, while too frequently the latter expend their energy in giving off swarms, giving their profits in increase and not in honey. Such I find to be too frequently the case with a far too large number of bee-keepers, especially those who keep small apiaries for honey, and who have no room for (nor desire) increase.

There are certain well-known conditions that are essential to the production of a bountiful honey crop; and a general law governing these conditions, without which, no matter how favorable nectar conditions are, satisfactory results can not be attained in net returns. An apiary, to be a profit-payer, must consist of a number of colonies, greater or less, all of which are in a homogeneous condition of strength, that strength to be kept up by the progeny of a first-class queen, and then not ruined at the time of the honey harvest by an uncontrollable attack of swarming fever that turns a honey-flow into increase and not honey.

The bane of most apiaries in the spring is the weak colony, a colony usually regarded as worthless, or as a candidate for combs of brood from more fortunate neighbors—a plan which badly injures the stronger stocks at that time of the year, and is of but little value to the weak colony. A weak colony is frequently unable to care for more brood-combs properly, so the result is the death of the brood from chilling, or the bees that hatch will be of such low vitality as to be practically worthless.

Others try to help the weak ones by feeding and nursing, and sometimes succeed in building them up to satisfactory strength, but only at the *close* and not the *beginning* of the season, with a result of barely enough stores to carry them again through the succeeding winter and give nothing whatever for daily bread for the owner.

In but few sections of the North is it at all worth while to try to feed a weak colony to working condition in time for a flow from clover, and it is only throwing away good money to rob strong colonies of brood to build them up. If feeding for stimulative brood-rearing must be indulged in at all, we should feed the very best ones and get every bee hatched possible before swarming commences, and let the weak ones take care of themselves, of course seeing to it that they are kept supplied with honey, as warm as possible, and protected from robbers.

Now, with the advent of swarming, comes the day when our weak colonies become our money-makers. When the first swarm issues, go to the strongest weak colony, one, say, that has reached five or six partly filled combs of brood, but which will remain too weak of itself to yield surplus; smoke thoroughly to cause the bees to fill themselves with honey, and catch and cage the queen and remove her. Now hive the swarm *right into this weak colony* and give plenty of room for surplus. As all the bees are well filled with honey there will rarely be any dispute. This poor worthless colony has now become, like magic, one of the very best in the apiary, and possesses every requirement for yielding a large surplus, viz., a medium amount of brood, a large force of field bees stimulated by having swarmed, a good force of nurse bees already in the hive, and a first-class queen. Such a colony will rarely swarm again during the season, as, by the time they are again gorged with brood, the honey-flow will generally be so far advanced as to discourage further swarming.

Now to return to the hive from which the swarm issued. Next day about noon, when the few field bees are out foraging, smoke the bees; and, if you have time, remove all queen-cells and turn the queen taken from the weak colony loose on the combs. She will be accepted ninety-nine times out of a hundred, and no questions asked. If rushed for time, just turn her loose on the combs anyhow, and she will take care of the queen-cells herself. In about a week this colony

will have regained its normal strength, and, having a laying queen, will constantly increase that strength through the honey season, and will but rarely swarm. This queen may acquit herself as one of the very best in the apiary the rest of the season.

Now from two colonies, the one worthless and the other one liable to do too much swarming, have been evolved two colonies, both in perfect condition for a large yield of finest honey. Continue this treatment, always selecting the strongest weak one, as the weaker ones each day all naturally become stronger, until all weak colonies are brought up to the standard of extra working condition.

TREATMENT OF THE MEDIUM COLONIES.

But now how about those medium colonies, too strong to be treated as above, and not strong enough to be very profitable in their condition? If we occasionally rehive a swarm on the old stand and in the old hive, and take out four of the best combs of brood, putting sheets of foundation in their places, we can give two combs of brood to two each of those colonies, taking out a couple of poor combs of brood to make room for them, which can be formed into a nucleus and given a queen-cell. These two full frames of brood should immediately bring the medium colonies to the required strength for work, while the swarm hived on the old stand should also give a nice surplus.

WHAT TO DO IF THERE ARE MORE SWARMS THAN WEAK COLONIES.

Should the indications be that there will be more swarms than weak colonies, select the very best colonies as regards both purity and industry, and, when they swarm, remove the hive, from which the swarm issued, to a new stand, and hive the swarm on the old stand, giving it, say, three combs of brood from the old stock, and three or four sheets of foundation, and give plenty of surplus room. This colony, having all the old bees, and some brood, should also give a nice surplus.

Now to go back to the old stock removed to the new stand. Take two nucleus-hives, made to take frames the same size as those in the hive; place them on separate stands, give each one or two combs of brood and a good cell from the hive, and let all three raise queens. Any surplus cells can be cut out and used in other nuclei formed in the same way for the next seven days, thus hastening hatching several days and also increasing the number of queens raised from choice mothers.

After all the queens in both nuclei and central hive are *laying and have filled all their combs with brood*, the queens may be taken from the nuclei and used to replace the poorest queens in the apiary, and the brood and bees united with the main colony, thus giving it at once seven or eight full combs of brood, and making it at once a full colony. Queens reared in this manner have no superiors in beedom.

This method is simple enough for the amateur with half a dozen colonies, and equally valuable for the largest of home apiaries. It is also elastic; i. e., it can be modified to suit many different conditions; keeps every colony to the top notch of strength during the honey-flow, keeps every queen working full time during the whole season, and keeps every colony, nuclei excepted, with a laying queen all the time, and makes swarming a blessing instead of a nuisance; allows a moderate increase through the nucleus system, and keeps the apiary supplied with a class of queens having no superiors on earth.

Any tendency to degeneration from close breeding can be immediately checked by the purchase of choice breeding-queens of other strains—not to replace but to *blend* with the best strains already in the apiary; and any one breeding on these lines would in a short time refuse to have his whole apiary requeened free of charge by the best breeder in the country.

If the apiary is run for comb honey, care must be used to produce nothing but a fancy article—one that will command the top, or a premium over the top quotations; and it is just as easy to produce a crop all A 1 to fancy as it is to produce all number two or worse.

Comb honey, if to command the very best prices, must be removed from the hive about as fast as finished, and before becoming travel-stained, and properly stored and cured, and not left on the hive until the season's close. If every separator used in the apiary, wood or tin, is not thoroughly washed and *wiped dry* before being used in the supers, much of the capped surface is bound to have a non-attractive smutty appearance; and all drawn combs in sections from the previous season, no matter how white, must have the ends of the cells cut down before using, or an expert will condemn every section so used, at a glance. Likewise it is difficult to produce nice honey on a hive containing old dark combs unless they contain freshly sealed honey at their tops.

If the apiary is run for extracted honey, and we expect the honey to bring the top price as a table delicacy, it can not become too ripe before extracting; and for best quality of product it should remain on the hive three to six weeks after sealing before being extracted; while for general market honey it may be extracted as soon as sealed, but not before.

Frenchtown, N. J.

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## PROTECTION DURING THE WINTER.

### Temporary Sheds vs. Outer Cases.

BY W. T. DAVIDSON.

Nothing that I know of at present will beat a good shed for wintering bees. I can pack my hives in straw in a good shed, and get excellent results. I wintered my bees three winters in a shed without the loss of a colony. Sheds are very unhandy to work under, but I think I have designed one that will be

handy. I will make the cover out of boards in 12-ft. sections, covered with some kind of roofing. In summer, when I don't need the cover, I can remove it.

But such a shed will cost about as much as good pine winter cases. I bought pine flooring for $2.00 per 100 ft., and made some winter cases. If bottom-boards, covers, and all are made, it takes about 20 feet of lumber per case. According to these figures, 100 ft. will make five cases. The lumber in these five cases will cost $2 00, which is 40 cts. per case. There is a little more to add to this—that is, the roofing. Either paper or metal roofing can be used; but my advice is to use the best roofing that can be had. Such covers can be used for shade-boards in summer. For this locality I don't think this size of winter case for eight-frame hives would cost over 50 or 60 cts. per case for material, and I believe that they would last a lifetime. I can pack my bees for winter right on their summer stands, and not move them enough to disturb them. In extremely cold climates the cases can be made larger. The case has a bottom-board and cover and a body all separate. Put the bottom-board under the hive; set the body down over the hive; put on your packing; put on the cover, and your bees are ready for winter.

These winter cases cost a little money and labor to begin with; but while you are looking at the cost of the winter cases you must count the cost of wrapping the hives with paper, and that you will have to buy new paper every year. I do not believe that the paper wrapper is half as good as a winter case. After you fold old newspapers under the wrapper, count the cost for fifteen years on the paper wrapping and you will begin to see a winter case made like some I have, and painted, should last more than 30 years. It is hard for me to decide which is better—a good shed or a good winter case. Right now I am in favor of the winter case. It is not what a thing costs, but what it is worth.

Velpen, Ind.

## RENDERING COLONIES NORMAL.

### Some Strong Colonies Saved, and a Weak One Made Good.

BY A. J. BURNS.

Some time ago I found several colonies whose queens were laying drone eggs, and several more with laying workers, all strong in bees, and with an abundance of honey—too good to break up if I could save them, so I sent for some new queens, not having any extra ones in the yard. I at once set about preparing a place for them by selecting strong colonies with vigorous queens by putting the queen below an excluder, and as much of the sealed brood above as practicable. The queens came in about two weeks. I had then an upper story of strong young bees which I set off on a close-fitting frame covered with a fine wire screen as a bottom-board, thus confining the bees, but giving them good ventilation. I carried them into the honey-house, where, within an hour, I placed a cage containing a new queen between the frames just as they came, and left them until the next morning, when I removed the hive containing the old queen on to the old stand a short distance away, and placed these upper stories with the new queens on the old stand on a regular bottom. At the end of 24 hours I gave the bees access to the candy, where they had not already reached it. At the end of three or four days many of the bees had gone back to the old stand. I then went around and pinched out the drone-layers, shaved off the heads of what brood was capped, and sprinkled sulphur over the unsealed brood, and treated the brood of the fertile workers in the same manner. The following day I put them temporarily aside and placed the hive and queen, displaced by the new queen, on their stand; covered it with a paper through which I had punched a hole with a leadpencil, and on top of these their hives that I had put aside, making the hives three-story, and the mutilated brood in the third story—no honey except what might be in the frames containing this brood. In a few days all the bees were down with the queen, the mutilated brood above deserted.

At another place I noticed a colony that seemed very light; and on uncovering it a score or two of robbers came tumbling out, although I did not notice any on the outside as I came up. Upon examining I found the honey all gone except the least bit in one corner of a frame covered by about a tablespoonful of bees, and in their midst a queen, all apparently about to expire. I put in three or four frames of honey from elsewhere, closed up the entrance bee-tight, and covered up the hive. The next day, between nine and ten o'clock, I set an empty hive on top, covering it with a tight-fitting frame covered with screen wire, and laid the cover on top; then with a nucleus box and large funnel I went around where the bees could be spared and took out a few bees at a place, being careful not to get a queen until I had in my box bees enough to make a good fair colony, which I carried to the honey-house, and put them in a darkened corner for between six and eight hours, and at sundown I took them to this queen and her bees, uncovered the hive, unhooked the cover to the nucleus-box, took it between my hands, holding the cover shut while I jarred it on the ground to settle the bees to the side opposite the cover; and before they had time to recover themselves I dumped them into the empty hive and covered it with the screen frame and placed the hive-cover on top. The next morning they were all down among the frames. I left the hive shut up for three full days, and at sundown of the third day I opened the entrance. I did not look at them until the second day after, when I found the bees spread over the combs, some of them industriously cleaning and polishing cells, and the queen hustling around among them,

depositing eggs as if all had always lived there; and at this writing, some ten or twelve days later, there is quite a patch of brood on two of the frames, part of it sealed. I see no reason why they should not do as well as any other colony.

San Diego, Cal., Nov. 11.

## LIFTING HEAVY CANS OF HONEY.

### A Rope and Tackle for the Purpose ; Fastening Foundation.

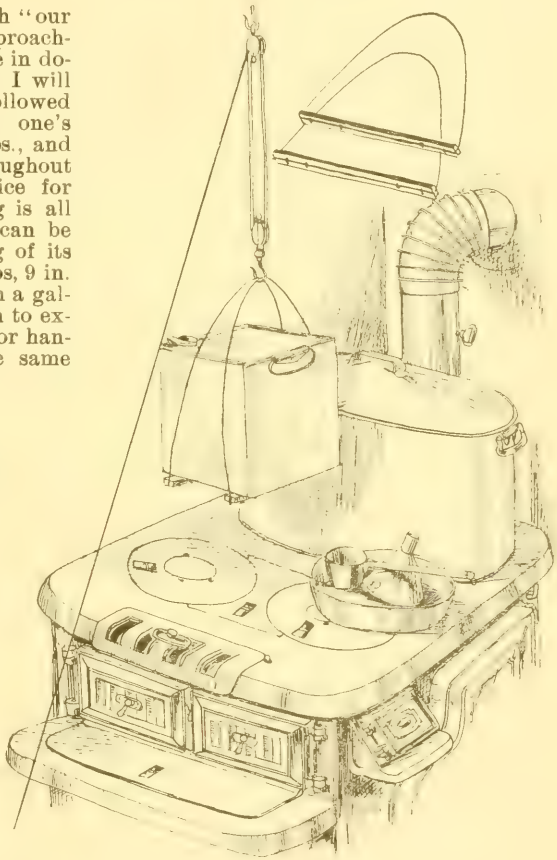
BY C. F. SMITH.

Some kinds of work connected with "our chosen pursuit," that we formerly approached with dread, we now find pleasure in doing because of improved methods. I will describe two plans that I have followed for the past year or two. When one's sales do not aggregate over 10,000 lbs., and they are quite evenly distributed throughout the year, the block-and-pulley device for lifting 60-lb. cans during the melting is all right. In a rush, two wash-boilers can be used. Each can must have a sling of its own. There must be two ½-inch strips, 9 in. long, for each can to rest on, to which a galvanized wire is stapled, long enough to extend up over the can to form a bail or handle — two for each can, and all the same length. I use two small ½-in. double blocks with ⅜ or ½ in. rope. I insert a ¼-inch screw-hook through the plaster into a joist directly over the front of the stove. I always empty the honey through a cloth strainer into a can around which a few thicknesses of paper are wrapped to hold heat. I use an oil-faucet on this can, with entire satisfaction.

The more experience I have in bottling honey, the less heat I apply. I now heat the water to 130°. A man can hold his fingers in water at that temperature 15 seconds; a woman, 30. The honey does not candy as quickly now as it did formerly when heated to a higher degree. The reason of this, probably, is that the excessive heat evaporates too much, which causes the honey to crystallize. I used to be continually bringing bottles home from the store to remelt; but have not been bothered any since I adopted the 130° rule. I think some kinds of honey will stand more heat than others; but 130° is the limit with me. When sealed at 100° it does not candy under ordinary circumstances. I uncap the cans while melting, and never missed any aroma.

Dread No. 2 that was turned into a pleasure is wiring and putting in foundation. Wire lengthwise of a frame tightly. Lay the wired frame on the foundation with your thumb on or toward the bottom-bar, and draw the wires downward as you imbed with the old rocker imbedder. Now the foundation will gently crowd the top-bar, which, from this method, had better be plain or flat. Imbed three to five hives or supers, leaving the frames piled up, top-bars to the right. I fasten the foundation with melted wax from an oiler, at the rate of four per minute, going over both sides, and I never had one come loose.

The oiler should be large enough to hold at least a pint, and should be provided with a handle. The diameter of the spout at the small end should be about ¼ inch. The opening should be reduced with a tapered



wooden plug pierced with a hole the size of an eight-penny wire nail.

To prevent the wax from chilling, the spout should be wrapped with woolen cloth or asbestos ; but as an additional precaution I drop a hot wire into the opening every time I set the can down.

The wax should first be melted on the stove and then heated by means of a single-wick oil-burner. All the appliances mentioned can be obtained at any hardware store for two or three dollars, and they will pay for themselves in a month.

Cheboygan, Mich.

[Our correspondent has given us several valuable hints. A small tackle like the one shown here can be purchased at any hardware store for a very small sum. A little outfit like this, costing a comparatively small amount, will save a lot of hard work and severe strains on the back and shoulders.

The scheme of pulling the wires *downward* while imbedding, to cause an upward strain when in the hive, is excellent. If any correspondent has suggested it before, we do not now recall it.

Mr Smith refers to one more thing; and that is, he finds it advisable not to heat the water hotter than 130°. We should like to emphasize this advice, because we believe it to be very important.

Incidentally we can not help poking a little fun at Dr. Miller, who had a little fun at our expense because we said at the National convention at Harrisburg that 140° was too hot for one to bear his hand in; but some people can stand a higher degree of heat than others, especially women; and as thermometers are so very cheap we do not see how any one who does any business in bottling can afford to get along without one; and while one is about it he should get a good one.—Ed.]

## TRANSFERRING BEES.

### Why it is Best to Place the Old Hive Below the New One.

BY E. W. ALEXANDER.

In answer to Dr. Miller's ninth "Straw," July 15, 1907, p. 947, as to why I prefer putting the undesirable hive under the one I wish to keep the bees in, instead of on top, I will say I have always found them more inclined to commence work above their brood where the temperature is warmer and more even than under the excluder or near the entrance. I should have mentioned that it would be much better to place a frame of brood in the new hive, then the bees would go up, and the queen continue to lay. She will seldom commence laying in dry combs for several days, either above or below the excluder, unless the colony is strong and honey is coming in fast. One of the principal reasons for putting the old hive under is that, at the end of three weeks, it will contain but little honey, and its combs will be about ready for wax; whereas if the old hive is placed on top, then we have but little honey in the new hive, and the old one is full of honey in an undesirable condition. This is especially so if we use foundation instead of empty combs. It is for these reasons that I prefer putting the old hive under the new one.

In one case the new colony at the end of three weeks will be all that could be desired. In the other case the new colony would be light in honey, and, consequently, scant of brood, and its foundation very poorly drawn out. I do not put the new hive under the old one. The object to be gained is to draw all that is good in the old hive into the new one as soon as possible; and from our experience we find the above to be the better way.

Delanson, N. Y.

## THE ALEXANDER PLAN FOR WEAK COLONIES MODIFIED.

### More Honey Produced if the Two Colonies are not Separated; Producing Comb and Extracted at the Same Time.

BY J. W. DICKSON.

In the Feb. 15th issue of last year, p. 232, I notice an article on the use of excluders. I will give my plan in brief for the production of comb and extracted honey.

In the early spring, just before I commenced to feed for brood-rearing, I set the weakest colonies over the strong ones, with a queen-excluding honey-board between them; feed half a pint at night to each colony till the desired amount of brood is reared. Then when the flow comes on I pinch the head of the poorer queen, take off the zinc, and then add bodies filled with extracting-frames as needed. Next, I place a super on top filled with sections and full sheets of comb; and when the season is over I take off sections, pack them away, after which I take off the extracting-bodies and extract.

I will now tell you what I gain by this method. By this plan I have two hive-bodies filled with brood so they are doubly strong compared with those managed in the ordinary way, and will make more honey than they will to build up on the Alexander plan, then divided when the flow comes on. Then some of my customers want comb honey and some extracted, so I am able to accommodate all. I can produce as much comb honey in this way as I did when I ran for comb honey altogether, and have the extracted besides. Only about 15 per cent of my bees managed on the above plan ever swarm.

Now, I guess you will wonder how I keep from reducing my regular number of colonies. I do that as follows: I run a few colonies for comb honey exclusively, and they will all swarm; then in the spring, if I am a little below the normal number I buy a few colonies in box hives at from $1.00 to $1.50 each, transfer them on my extracting-frames, and go on as usual.

I never use excluders for comb or extracted honey, only as above stated. My idea is to have the bees from two queens united, and at the proper age to work when the flow comes on. By doing this a larger per cent of them will leave these strong hives in search of honey than if managed differently.

[We believe that more bee-keepers would find it to their advantage to produce comb and extracted honey at the same time as above outlined. The plan, as a whole, we believe to be excellent because we have tested something similar and found it to be good. —Ed.]

## TESTING HONEY.

### A Hydrometer for Finding the Specific Gravity.

BY F. D. TOWNSEND.

I formerly used a hydrometer in photography, and have often thought of using one to test the specific gravity of honey, but have never known what temperature to test by, for honey is affected by the temperature in that, the colder the honey, the higher the the test. The thermometer should be of the all-glass kind, and should be tested.

I presume that, on account of its long name, many will hold back from using the hydrometer for a long time, at least, thinking it is something for the "scientific fellow." Really, it is one of the most simple of instruments, and is just as readily understood as the thermometer. I should like to know what temperature the government officials use in testing honey.

Perhaps there are other ways for testing honey. At any rate, we are hungry for news along this line.

One of the uses to which the hydrometer could be put would be testing the specific gravity of all honey at extracting time. In this way a producer could work very intelligently. To illustrate, we will suppose that, for some reason or other, he should decide to extract some honey during the honey-flow; and if he were not quite satisfied whether the honey is well cured he can extract a little, heat it to the required temperature, and test it; and if it falls below the standard he should stop extracting until the honey is thick enough.

Suppose the dealer were progressive, and had supplied himself with a hydrometer and thermometer; the producer could then tell him what his honey tested, and the dealer could answer, perhaps, as follows: "We are paying to-day for white-clover extracted honey the following schedule of prices, based on the specific gravity of the honey," etc. In a note at the bottom he would explain that any honey that did not come up to the lowest test would have to go at a reduced price for baker stock. My idea would be that the dealer, also, should sell to his customers from this same schedule of prices, of course adding his profit.

If ordinary clover honey tested 40, good honey 41, and extra good or the best, 42, the dealer might quote the 42 at 10 cts. per pound, the 41 at 9 cts., and the 40 at 8½. It is evident in my mind that the 42 test would be the most sought-after grade, while the 41 would be a close second. There will be few low-test grades, for it will be too much of a temptation to produce the best, on account of so much difference in price.

The honey business is on a par with the butter trade to-day; and as I have been on both sides of the counter I know from experience just what I'm talking about. A takes a roll of average butter to the grocery when butter is worth 15 cts. a pound, and gets what his butter is worth. B takes a roll of butter of extra-good quality, and, though it is worth 20 cts., he gets only 15, for that is the market price. C brings in a roll of butter of very poor quality, and, though the market price for renovated butter is only 10 cts., he sells it at 15, and therefore really pockets 5 cts. of B's money. The extracted-honey market is managed on the same principle.

Remus, Mich.

[This is a field worth investigating. In the meantime it would, perhaps, be well to bear in mind that locality and the kind of honey would have much to do with this question of specific gravity. York State buckwheat, for example, would naturally have a greater density than the same honey produced elsewhere. Colorado alfalfa would be thicker than alfalfa in some parts of California and Nebraska. What would be regarded as a standard of specific gravity for one locality would not be accepted for another.

Again, different kinds of honey in the same locality would vary greatly as to the number of pounds to the gallon.

Still again, artificially ripened honey and that ripened in the hive by the bees might have exactly the same weight per gallon, and yet one be superior to the other in point of aroma or flavor.

Having said all this, we are of the opinion that bee-keepers might use hydrometers to very good advantage, and that their employment would be far better than mere guesses as to the density of the honey to be extracted.—ED.]

## THE NEW PURE-FOOD LAW.

### Some Questions Concerning it.

BY WM. RUGE.

The pure-food law, I am afraid, will work against a good many bee-keepers like myself, who, not raising enough honey themselves to supply their patrons, have been in the habit of buying honey from other bee-keepers or dealers in honey. You say the main thing for such buyers is to get a guarantee of purity from the seller—that this will render the buyer safe in case the purity of the honey when retailed should be questioned. Now, I can not see how this can be. Suppose I buy a lot of honey from a dealer, with a guarantee, and another lot from another dealer or bee-keeper, both lots of honey to be sold to my customers—consumers and retailers. I have to bottle this honey. Am I supposed to mark *each* bottle in some way to be able to know at any time from whom I bought the honey in any of the bottles, should somebody question the purity of the honey and get me into court? And suppose the honey is pronounced adulterated, and I could say I bought it in this particular bottle from so and so, would not this party—the man who sold me the honey with a guarantee of purity—deny that this honey was from him? and how could I prove that it *was* from

him, and that I did not adulterate it myself? Or suppose I buy from several people and mix all the honey together so as to make one grade—how can I prove afterward from whom the adulterated honey came? The dealer who sold the honey, whether he adulterated it or not, will, in case, of trouble, naturally want me to prove that this was his honey; and how can I do this? The only way I can see would be to have the honey sampled on receipt (each can or package), in presence of witnesses at the depot on arrival; then have it analyzed by a competent chemist; but such expense and loss of time would, of course, stop trade altogether.

I can not see the good of any guarantee, once the honey has gone out of control of the seller and passed into the possession of the buyer, and been bottled by him. The dealer may not know himself that the honey he sells is adulterated; or, if unscrupulous, he may adulterate it himself and give a guarantee of purity—knowing quite well that his buyer can not afterward prove the honey in a particular bottle or package is from him, or that the buyer has not adulterated it himself; consequently I expect that, in case of trouble, it will always in the end be the buyer that will have to suffer in case of conviction—I mean the man who puts up such purchases in small receptacles and sells it to the consumer or retailer.

Seeing the matter as I do, I am afraid to buy any honey. Am I wrong? and can you set me to rights and reassure me about the workings of this pure-food law?

Lake Charles, La.

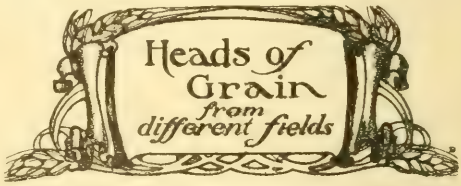
[Our correspondent has given us a hard nut to crack—in fact, we have thought of the same thing. Almost every good law, if it is worth any thing, will work some inconvenience, perhaps hardship, upon innocent law-abiding people Mr. R. states a condition where an honest bottler *might* be made to suffer for the rascality of some one else; but the national pure-food law has been in effect now for some fourteen months, and we have yet to hear of a case like either of those suggested by our correspondent.

Take the case cited: Suppose your bottled honey is pronounced adulterated and it is made up of one or more lots of honey from as many dealers. You should always retain a good-sized sample of each lot. Having done this you can have them all analyzed, and the one showing the adulteration would give you the means to place the blame where it belongs. With a guarantee of purity from the party furnishing such honey you would be cleared of all responsibility and Uncle Sam would proceed to prosecute the party who furnished you the adulterated lot.

Any bottler who does any extended business should be able to determine pretty accurately by the mere taste whether his honey is pure or not. Even if he does not have the knowledge to make such determination he should be careful to buy of honest and well-known honey-producers or dealers. When the honey arrives he should carefully sample by tasting of every can or barrel of honey. If he tastes the honey and buys only of reliable people he will not be likely to run up against the national law, nor, in fact, any State law barring out adulterated goods.

But perhaps our correspondent would like to know how to detect glucose, the most common adulterant in honey, by the mere taste. Let him buy a small quantity of glucose of some confectioner, and then prepare several samples of honey and put into a part of them various percentages of glucose. First he should taste the pure glucose until he is perfectly familiar with its flavor. Next, in a day or so afterward or when the glucose taste is out of his mouth, let him taste the prepared samples. If he does not find himself pretty nearly unerring in detecting which is glucosed we shall be surprised. But suppose he finds his taste is *not* reliable. Let him take a sample of adulterated honey and pour over it a little alcohol and stir it. If glucose is present the honey will become cloudy. While this test is not entirely reliable, yet it will show if any considerable quantity of glucose is used.

In a word, the bottler's best protection is his knowledge of reliable dealers and producers, and his knowledge of good and pure honey when he tastes it.—Ed.]




### UNITING WEAK COLONIES IN THE SPRING.

On first thought, weak colonies could be united to advantage, but the many failures prove the fallacy of this plan. I have a plan, however, which has proven very satisfactory to me for a number of years—simply unite the weak ones with the very strongest. The strong ones can care for the little brood the weak one may have if it is placed close beside the brood of the strong one. This plan will save the weak ones very nicely, and especially where they may be too weak to be united on the Alexander plan. If two valuable queens come together, divide the brood equally with a thin wooden division-board with a double strip of zinc—one piece nailed on either side. That will prevent the queens from visiting each other.

I prefer the board ¼ or ⅜ thick, with a hole ½ inch wide by 5 or 6 long through the center, covered with zinc. Separate the colonies as soon as the hive is well filled with brood. F. H. Cyrenius.

Oswego, N. Y.

### PASTE FOR LABELING TIN.

I notice in Gleanings for Jan. 15 that Mr. N. E. France recommends washing the surface of tin with soda or vinegar before put-

ting on labels with paste. I think I have a way of making paste that is easier and quicker. It is this: I take about a quart of boiling water and enough flour to make a thin paste. I mix the flour in a little cold water before putting it into the boiling water, and stir it until well cooked. I then put in one teaspoonful of powdered alum. Paste made in this way will stick labels to tin as tight as beeswax; but it is necessary to label before filling the tins with honey. This paste will also keep for months. I have never had any trouble with the labels coming off from my tins. CHRIS. GRIMOLDY.

Owen Sound, Ont.

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### A SCHEME OF MANAGEMENT OF BEES FOR THE BUSY FARMER.

I should like to submit my case to you for advice. Two years ago I acquired a swarm of bees. I now have three in ten-frame hives, which I run for comb honey and pleasure. Now, I am a busy farmer, and don't want to increase any further or buy any more hives. How can I manage them to best advantage? JAMES C. WHITE.

Sewell, N. J.

[For a busy farmer we would unhesitatingly recommend running for extracted or chunk honey, tiering up the hives one above the other, giving the queen unlimited room for egg-laying and the bees for the storage of honey. If a large entrance be given at the bottom, and if the hives are two, three, and four stories high, depending upon the strength of the colony and the season, there will be very little swarming. The extracted honey bottled will bring a fair price at the local markets, probably giving as large a net return as comb honey, with far less expenditure of time and labor on the bees, when the farmer is the most busy with his farmwork. If he can not afford an extractor, let him cut the honey out of the brood-frames and sell it in bulk as it is done in Texas. If he is well known in the vicinity he will have no trouble in disposing of his entire crop.

The special feature of this large-hive principle, one tiered upon another, that should appeal to the busy farmer, is the comparative absence of swarming, and the fact that the honey can be taken off the hive at his leisure in late summer or in the fall.—ED.]

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### THE SACKET TRANSPARENT WRAPPER FOR COMB HONEY; FURTHER POINTERS FROM THE INVENTOR.

I have read with much interest Mr. R. A. Burnett's article in reference to my wrapper, in the Jan. 1st issue, page 39, and would like to state that I experimented a great deal with the same before using or sending it out. The heavier the paper is, the less transparent; and to be of any value it must show to the purchaser just what grade he is getting. In fact, I had No. 1 grade, and with some of the paper I tried I found it did not show the true goods; and I found that, although heavier, it did not add very much to the strength.

As for the envelope or bag idea I had a couple of New York envelop concerns try to make up a bag that would be the exact size of the section. This did not work, because the section was not always perfectly square, while the bag was. By this I mean the section before filling was true enough; but when squeezed in the super it was a trifle out, and in inserting the box it tore the wrapper.

Another point was that a bag large enough to take almost any section did not fit tight, and looked messy, and, to my way of thinking, the beauty of the package is its neat appearance, and to have the paper stretched tight with no wrinkles.

I have yet to receive a complaint that the package did not carry well, and that, on account of leakage, other sections were soiled. The paper has the strength, and still has transparency. H. A. SACKETT.

East Orange, N. J.

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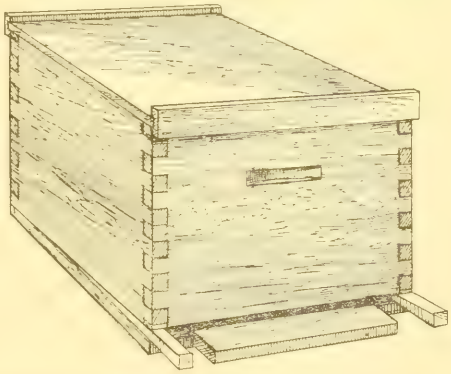
### SEALED COVERS VERSUS ABSORBING CUSHIONS; SEPARATE OUTER CASES USED THE YEAR ROUND.

I don't often contradict editors; but on p. 1312, Oct. 15, in answer to the question, "Are sealed covers better than absorbent cushions?" you say, "Yes." Permit me to say, "No!" An absorbent cushion will never get damp if a little space is left between the cushion and the cover of the hive. If super covers are put over brood-frames and sealed tight by the bees you can find damp musty combs almost any time.

I use ten-frame Dovetail hives and regular supers. The bottom-board is simply a flat board with a wedge under each side of the hive to regulate the entrance. This bot-



WEDGES USED TO CONTROL THE SIZE OF ENTRANCE.

tom-board is made with a little projection in front for alighting-board room.

To prepare the hives for winter I make a case 22×26×20 inches high, and a gable cover out of cheap box boards, and cover it with well-painted canvas or tin, or any thing that will keep out the water. I put an empty super on the hive, and over the frames a piece of straw matting or old carpet is put on, separated from the frames by a Hill device. I fill the super with cork dust, chaff, planer-

shavings, or sawdust; but the last two, if used, must be dry; or if a cushion to fit the super is preferred, the space around the sides of the hive should be filled up, and the colony will be ready to swarm by the first of May.

Jersey Shore, Pa. L. E. Scherer.

[You say "absorbing cushions will never get damp between the cushion and the cover of the hive." There must be a great difference in localities, for here at Medina we tested this thing for over thirty years. Before the sealed-cover idea came to the front we had a great deal of trouble with wet cushions, especially during spring. In every one of these cases there was a large amount of air-space between the cushion and cover; and, besides that, there were means for ventilation in the cover itself. During late years we have adopted the sealed cover—that is, a thin board placed right on top of the brood-nest, which the bees seal down. Over this is placed a tray containing packing or cushion. Since adopting the sealed cover we do not find it necessary to pull out the cushions and dry them on warm sunny days; but with the old absorbing cushions we used to have them wet by the hundreds, and sometimes frozen.

We then conducted a series of experiments, putting half the bees on absorbing cushions and half under sealed covers. As our older readers will remember, the latter came out ahead.

Our own experience here at Medina is not the only one, for we often receive letters from our readers who are having the same trouble with wet cushions under a sealed cover; and these cushions are not wet because there is no space between them and the hive, either.—Ed.]

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### DISINFECTING INFECTED COMBS WITH FORMALIN GAS.

In anticipating the work in the apiary the coming season, some of us are reminded that the germs of foul brood have been lurking around among our bees, and that we must take every precaution to defeat them in further destruction.

As for myself, I have several hundred empty extracting and brood combs, all of which are entirely free of honey, brood, and pollen, and which are dry, and have been so for a year. Some of these combs have had black or European foul brood in them, but, to the naked eye, are as bright and clean as any comb can be.

In the *Bee-keepers' Review* for 1904, page 152, Mr. E. W. Alexander gives a method of formalin fumigation which he says was quite successful in saving European (black) foul-broody combs, but *not* American foul-broody combs. Three years have passed since Mr. Alexander wrote his experience, and I should like to ask whether such treatment is recommended now as being successful.

I also notice a statement by Mr. Adrian Getaz, *American Bee Journal*, 1907, p. 689, as follows: "The experiments made a few years ago by Dr. Howard show that the spores of the foul-brood bacilli do not resist the sunlight and open air more than a day or two. That explains why the hives contaminated do not need disinfecting. The spores they contain are soon destroyed by being exposed to the open air." Is this the accepted theory? and if so, why would not the spores of black brood be dead that have been on these perfectly dry combs for a year that I speak of above? I have melted up all combs that were badly diseased, or that contained a single cell of brood or pollen; but I do not want to melt these nice dry combs if fumigating will answer, and I do not want to fumigate if a year's airing and drying have killed the spores. Wallace Mays.

Benton Harbor, Mich., Feb. 6.

[The use of formalin for disinfecting combs, and even suspected diseased brood, was discussed a couple of years ago in all the bee-journals. Some favorable results were recorded, but there were enough failures to lead us to believe that it was not wise to depend upon such means of disinfection; but we see no objection to applying the fumes of the gas upon clean dry combs such as you speak of; but such combs should be confined in a hermetically sealed box or chamber. An ordinary wooden box with a lid is not tight enough. If a wooden chamber be used it should be made close enough to hold water. Then the gas should be applied full strength for the time prescribed.

We doubt if the formalin gas would disinfect combs affected with the American (old-fashioned) foul brood, for the reason that the dead matter clings to the sides of the cells like so much glue. The microbes under this covering can not be reached by the gas, and hence it would be a waste of time to employ it on such combs; but we think it might be applied to advantage upon those which possibly have been in hives contaminated with European foul (black) brood.

We would not, in the case of hives that actually contained infected colonies, rely upon the air treatment for disinfection. It is the work of but a few moments to throw a lot of loose dry straw into a hive, set fire to it, then stir the straw while ablaze, so that the flame reaches every portion of the hive as well as the cover. The moment the flame blackens the wood in every portion, throw in a cup of water and clap on the cover. We know that sunlight and air are wonderful germicides; but in the case of a disease so serious as American or European foul brood we would advise disinfection of the hives as above stated.—Ed.]

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### HOW TO LIQUEFY BULK COMB HONEY IN PAILS.

On page 88 Louis Scholl says he can not melt chunk honey in pails after it is granulated, without melting the combs. I sell all of my comb honey in friction-top pails, and when cool weather comes the extracted honey that is poured over the combs will granulate. To melt this I set the pail of honey in a large pan of warm water. The water must

be so I can just bare my hand in it and no hotter, or the combs may be melted. I keep the water at the right temperature. The pan should be deep enough so the water comes up close to the top of the pail. We have melted lots of honey this way, and the combs were just as nice as ever. A thermometer would be a good thing for this.

Velpen, Ind. W. T. DAVIDSON.

[Although we have never tried liquefying bulk comb honey, it would seem to us that the warm-air method mentioned on page 145 of the Feb. 1st issue would prove very satisfactory. There would be no danger, certainly, of melting the combs at a temperature of 100°. See "Bee-keeping in the Southwest," in this issue.—ED.]

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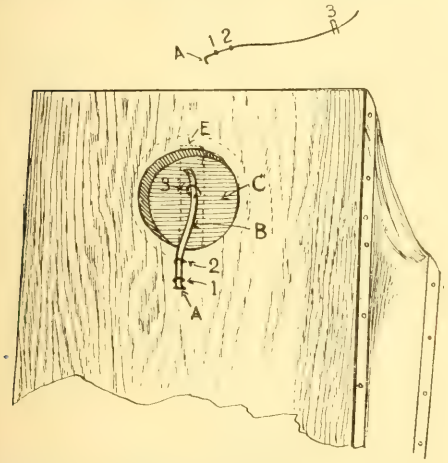
### HOW TO PUT A NEW SPRING ON AN OLD SMOKER-VALVE.

Get a piece of old watch-spring, about three inches long, which can be obtained from almost any jeweler. Lay this spring flat on the outside of the bellows-board, with the bend at *d* projecting into an awl-hole at *a;* 1




and 2 are staples; 3 is a staple or small bent wire nail driven only part way down. Properly put on it will bring the valve up with a snap. If the opening in the board were covered with a piece of wire cloth well tacked on it would keep little fingers from spoiling the valve in the first place. S. S. LAWING.

Ozark, Mo.

[We believe this idea is a good one; but we think that the solution of all valve trouble is no valve. The time is past when such a nuisance as a valve is considered necessary in a smoker bellows.—ED.]

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### COMB HONEY PRODUCED WITHOUT SEPARATORS; BEES WORK MORE READILY IN THE UNOBSTRUCTED SUPERS.

In the Dec. 1st issue, page 1503, is an article from J. E. Hand which I wish to endorse in regard to the question, "Are separators a hindrance to the bees?" From my experience of several years I answer most emphatically, *yes.* I learned by using hives with separators alongside of those without them, and I obtained more honey from the non-separator supers than from those with them; i. e., in many instances the bees refused to work in the separator sections, while those without filled every section. The hives of equal population with shallow extracting-frames produced more honey than those with the $4\frac{1}{4}\times4\frac{1}{4}$ sections with or without separators. This proves to me that, the more the bees can work all in a cluster, the better. I have a few hives of some old pattern, the super of which takes a section $5\times5\frac{1}{4}$, and the bees seem to like these better than a smaller section. I use no separators, and have but few ill-shaped sections. Of course, I use full sheets of comb foundation or three-cornered starters. In fact, I get so much more honey from these old hives than from the new ones with the $4\frac{1}{4}\times4\frac{1}{4}$ sections that I have concluded to discontinue the use of the latter.

Lorena, Texas. D. F. MARRS

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### FRAME-HANDLING; CLIPPING; INTRODUCING THROUGH THE ENTRANCE.

I read the article on page 835 of the June 15th issue, 1907, on handling Danzenbaker frames, and wish wet cloths had been mentioned to spread over the top of the hive, as described in Danzenbaker's book. This I consider almost as valuable as the smoker. As you lift one frame after another, the cloth can be turned back, keeping the bees practically out of the way. A very little smoke blown under one of these covers goes a long way. When ready to close the hive, lift the cloth quickly, and before the bees are much in the way you can have the cover on.

I notice considerable discussion of hive-stands. I use what I saw described in an old number of GLEANINGS — simply three pieces of inch board nailed together in the form of a letter H. This is the cheapest, most portable, and convenient stand I have seen described; keeps the hive dry, up out of the way of toads, etc. The objection might be made that hives could not be tipped up on the bottom-board; but on the rare occasions when this is desirable it can easily be done by shoving the hive forward a few inches on the bottom-board. This gives only four square inches of contact with the bottom-board, doing away with moisture and rotting as nearly as it is possible to, which should make it appeal to Dr. Miller.

I notice many elaborate descriptions of the proper way to catch and hold a queen for clipping. Why catch her at all? I take in the left hand one end of the frame, rest the opposite corner on some solid support, follow her quietly and carefully around with the point of a pair of scissors in the right hand, and, as she pauses, nip off the wing — right wing for even years, left for odd. If a person's hand were not steady enough for this, I imagine a small rubber band lightly stretched between the prongs of a stick would hold her against the comb satisfactorily.

Here is a method of introducing queens I

have not seen mentioned. It is simple, and does the whole thing with one operation, even without opening the hive under certain conditions: I have flat cages (something like the Miller), closed by a cork like plug. When ready to introduce I remove the plug and lay the cage on the bottom-board (I have not found it necessary to place it up among the frames), with the entrance or opening to the cage close up against the side of the hive or bottom-board. Provide a small wire attached to the other end of the cage communicating with hive-entrance; and when you judge she has been in the hive long enough to be accepted, pull the wire lightly, which will drag the cage away from the side of the hive, thus leaving the cage-hole open If thought desirable a little candy-honey dough can be inserted in the opening of the cage at the time of introducing, which the bees will not be able to get at until you change the position of the cage. This is the only method I have used, and have never lost a queen.

I have only a few colonies and limited experience; but as the above plans have worked satisfactorily with me I give them for what they are worth. C. B. Loomis.

Albany, N. Y.

[Mr. Fr. Greiner, a short time ago, illustrated his method of clipping queens' wings, which was, to clip them on the comb. The method is all right if one has steady nerves, and precision as well as celerity of movement. We should suppose that the average person would be as likely to cut off a leg as to clip the wings while doing the act.

The method of introducing queens as you describe would be excellent during the warm part of the year. It could not, of course, be employed during cool weather.

It is possible that the bees of a strong colony might push or crowd the cage themselves, especially if they should be at all hostile toward the queen. This would let her loose among the bees, where they would make short work of her.—Ed.]

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### CAN A VIRGIN QUEEN BE USED ON THE DUAL-QUEEN SYSTEM?

So much has been said in Gleanings the past few months in regard to the double-queen system that it leaves one at a loss to know whether there is any merit in it or not. But I wish some correspondent who has had experience would kindly tell me if I can keep, during a light honey-flow or by feeding, a laying queen in an upper story, separated from the lower story by perforated zinc, and introduce a virgin queen to the lower story and allow her to become fertilized. If so, how long can I keep her there?

Merrill, Iowa. J. R. Thompson.

[We see no reason why the plan here proposed would not work. Will some one who is in position to know please enlighten our correspondent? The only question arises as to whether a virgin queen would be treated on a par with a laying queen above the perforated zinc. We think she would; but if any correspondent thinks otherwise, we should be glad to have him speak up.—Ed.]

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### STORES OF HONEY FOUND BELOW THE BROOD.

Having read with interest the discussion between J. E. Hand and Dr. Miller, p. 1488, I wish to state that I at one time had considerable experience with bees putting stores below the brood when "unrestricted by the hand of man." A carpenter friend and myself were called upon to remove a colony of bees from the side of a two-story house. The bees were occupying several spaces between the studding, and for a height, in part of them, from the plate to the bottom of the window, and two combs thick. You will see from this that they were very strong. They had brood, as I now remember, from near the top down some two or two and a half feet, and fully two feet of honey below the brood.

Girard, Ill., Dec. 14. Chas. M. Gates.

[Perhaps the entrance was at the top. See page 102, Jan. 15.—Ed.]

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### A MODIFICATION OF THE WELLS SYSTEM.

Why not put a wire-cloth division board in the center of a ten or twelve frame hive, with a queen on either side; then an excluder below the super? That would give plenty of brood, stop swarming, and may be they would not kill one of the queens.

Jonesboro, Ind. C. A. Neal.

[The plan here spoken of would be a modification of the Wells system, and at the same time something similar to some of the schemes for two queens. It would probably work so long as the colony was in a prosperous condition; but after the honey season one of the queens probably would be missing. Try it, and report.—Ed.]

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### IN THE CELLAR OR OUTDOORS?

Would it pay to winter bees in a cellar when they could have flights every few weeks through the winter, and sometimes every day for a week at a time if wintered outdoors? W. P. Harpster.

Florence, Kan.

[If your locality is such that the bees could have a flight every few days through the winter we should not think it would pay you to attempt to winter them in a cellar, as the temperature would very likely be such that they would be very restless. With suitable packing we should say that outdoor wintering would be best for you.—Ed.]

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### WIRING FRAMES BY THE AID OF A LARGE NEEDLE.

Perhaps the following may be of value to some of the readers of Gleanings. I find that, in wiring frames, by threading the end of the wire about an inch through the eye of a blunt-pointed needle of proper size I can work much faster than without.

Forksville, Pa. W. L. Norton.

# Notes of Travel

by A. I. ROOT

SOUTHWEST FLORIDA—ITS OBJECTIONABLE FEATURES.

Mrs. Root declares that, while I mention and even dwell at length on the pleasant things to be found in this land of sunshine and perpetual summer, there are some disagreeable things I pass over entirely, and no doubt she is, at least to a certain extent, right about it; and I have promised in this talk to give a truthful glimpse of all these objectionable things I can think of.

A good many have inquired more or less anxiously about mosquitoes, and I am glad to say that here in Bradentown I have never seen any worth mentioning from the 5th of last November up to the present date, Feb. 20. There have been a few evenings when Mrs. Root not only *heard* a mosquito buzz, but I believe she actually found may be half a dozen, all told, so she killed them with a folded newspaper. While down on our island near swampy places we found them a few times quite troublesome; but I do not remember that they ever came up around our cottage so as to annoy us. Little gnats, almost too small to be visible, and so small as to get through window screens, are at times, during damp warm weather, quite vexatious, especially when you happen to be too busy with hands and eyes to give them your attention. When we first moved into our new house there wasn't a house-fly to be seen, and none came for quite a few days. The neighbors assured us, however, that, in due time, especially after we commenced cooking, they would be around. Sure enough, they did come, and for a few days almost drove Mrs. Root frantic. I said:

"Now, Sue, don't get so excited about a few flies. The weather will soon turn cold again, probably; and if it doesn't we will get some fly-paper and give them such a regular fight all round they will conclude this isn't a healthy place for flies."

Let me tell you something here. You can get rid of all sorts of domestic pests, rats, mice, flies, fleas, and even coons, 'possums, and *polecats*, if you go at it with enough energy and vigor. Let them know you mean *business*, and then "go in" and fight them to extermination. We got the fly-paper and caught them until there wasn't standing-room on the paper for another fly. We killed them with "fly-slappers," and still they came; and Mrs. Root said, "I told you so." Then I declared something was baiting them. You bee-keepers know that bees will never stop robbing as long as they find a drop of honey (sticky doorknobs and the like). Well, it is just so with flies, and I declared something must be baiting them around a certain back door. We keep our food in a wire-cloth-covered safe on the back porch in the wood-shed, and she remarked that she was surprised to find flies coming out every time the door was opened. Investigation revealed that this safe was so poorly made that flies were crowding in under the edges of the wire screen. A few tacks and a thorough going over stopped that "baiting." Then when a cool night came, very early in the morning with a brush-broom I killed every fly "roosting" around that safe and back door. Every morning I found fewer and fewer, and soon we both forgot all about the flies until the matter happened to be mentioned, and then we both wondered, because there was not a fly to be found, and it was then *my* turn to say "I told you so."

Now, my friends, this war of extermination will work with all sorts of "vermin." Don't say you haven't time, for it is really a great saving of time. Do you suppose I could write these Home papers with flies crawling over my hands (and bald head), and coming back and *back again*, when I tried to chase them away? As for myself, *I* greatly enjoy coming out ahead in all such fights. A home *isn't* a home, in the true sense of the word, when flies hold "high carnival" in every room and on all occasions.

Now I suppose I shall have to confess before you all something I didn't tell even Mrs. Root about for a long while. I think I did tell you that our one acre of land runs from the road, in front, back a little more than 100 yards to a bay or creek that juts out from the Manatee River; so we have a little piece of salt water at the lower end of our garden, where there are oysters and salt-water fish. When the tide went out one day, Raymond Rood, 11 years old, caught a fish with his hands that made a nice supper for the whole family. Well, one night after I first took possession of my place I thought I would have a bath in salt sea-water on my own premises, without saying a word to anybody. A rotten stump stood on the grassy bank close to the edge of the water, and I said, mentally, "Now, that stump will be just *the* thing to hold all my clothing and keep it nicely out of the dirt." I remember, too, thinking that, as things were so extremely handy, I would take a salt-water bath almost every day. No, dear reader, that was over three months ago; and, to tell the truth, I haven't had my *second* salt-water bath yet. In fact, I have scarcely gone near that part of my premises, *especially* that particular *rotten stump*. It makes me feel sad even yet to think of it. I took my bath Saturday night. Monday morning I confided the matter to Mr. Rood, and explained things by showing him one of my ankles.

"Red bugs!" he ejaculated; and after a little questioning I told him about laying my clothes on that rotten stump. A little later I was itching all over so it took all my time and both hands to scratch the place that itched the worst. Another day, the places I had scratched were scabby sores, and any part of my body, almost, would

have made a splendid picture for a medicine almanac—the kind where they say "before and after" taking their medicine. Mr. Rood and other friends told me to "stop scratching"—let it alone, and it would soon cure itself. It made me think of my time-honored remedy for bee-stings; viz., "after the sting is removed, don't touch it or think of it, but 'get busy' about something else." There are a multitude of remedies, and I went to the drugstore and asked for the best thing; but my colored boy, Charlie, gave me the most sensible remedy of all He said if I rubbed a little coal oil on my ankles, where they usually get on you first, when in the woods, the bugs would keep away; for all insects dislike coal oil or the smell of it.

The man who built our chimney said that rubbing the oil around the tops of your shoes would keep them from getting on your body when walking in the woods.

Now, here is something very funny about these insects, The people who *live here* are seldom annoyed by them. Raymond goes barefooted, with his trowsers rolled up, all through those woods, and wades in where I bathed, and yet the red bugs never touch him. It is mostly the new comers, or "tenderfeet," who get in the fix I was. I had something similar when I first got on the island a year ago, and also when I first arrived in Cuba. If the Department at Washington has ever published a bulletin on red bugs, "jiggers," etc., I should be very glad to see it.

There is no danger in walking through a beaten path or on a traveled road. The insects are said to be mostly on stumps or rotten trees, and new comers should be very careful about sitting down in the woods or even on the ground. One of our Bradentown ministers from the North thought he would go fishing, and he sat on the grassy bank, just as we do back in the old home When Sunday came he was in a fearful plight. Think of stopping in the midst of your sermon to scratch—well, say your ankle, when it has just "got to be scratched."

When Mrs. Root came a month later I was very careful (and *I* thought very kind) to inform her that, before she went out in the Florida woods, she must anoint her ankles and shoetops with coal oil; but she very promptly declared she would do nothing of the kind, "red bugs or no red bugs."* So far she has had only one or two evidences of them, and I have had no trouble since the first week or two. Mr. Rood declares we soon become *immune* to them as one does to bee-stings.

So far as reptiles are concerned, there are no more snakes here, if as many, as in the North.

During very dry weather the sandy roads are a drawback in many parts of Florida; but we have here in Manatee Co. very good roads most of the time, and beautiful roads are now being constructed all over the State, especially near the towns and cities. Neglected farms, and poorly managed farms and gardens, are perhaps *more* plentiful than in the Northern States. I have sometimes thought the reason for this is that so many come here with the notion that profitable crops may be grown without steady hard work with both brain and muscle.

Early in the morning, when the dew is on, the black sandy soil sticks to your feet; and unless great care is taken it is tracked into the house and makes the floors very untidy, and entails lots of work. This is especially the case on new ground just cleared up. After your dooryard is covered with Bermuda or other grass, or after you have walks of wood or cement about the premises, this trouble is mostly over. There are usually very good grassy foot-paths all along the roadsides, especially along the out-of-town roads. During a dry time, when there are high winds, this same black sand blows or drifts into the houses, and calls for a deal of dusting on the part of the tidy housewife.

There, haven't I done pretty well in giving the dark side as well as the sunny one? Mrs. Root's greatest objection to Florida, after all, is that she can not *here* see the children and grandchildren every day by simply crossing the street; but, of course, this objection would apply as well to any locality on earth except the "old Medina home."

By the way, *she* sometimes makes "great discoveries" as well as your humble servant. Her latest one is that the very best remedy for homesickness on earth is to go and find some other new comer who is also homesick, and in cheering him up and showing him your kind sympathy you both get over your trouble.* As there are quite a few bee-keepers with their wives now here from the North, she has done more visiting, especially among strangers, than she has for years past; and a part of her "discovery" is that not only are bee-keepers, as a rule, very bright, intelligent, nice men, but they seem to have managed in some way to get some of the *nicest* women for wives that there are in the whole wide world, and I think she is exactly right about it.

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Nearly 2000 new names have been added to our subscription list within the last month.

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For the benefit of those of our readers who are interested in irrigated lands we wish to record the fact that the first stage in the immense Rio Grande project near El Paso, Texas, has been reached by the completion of the Leesburg diversion dam, in New Mexico. The big dam at Engle will next be proceeded with. The total cost of the project is now estimated at between eight and nine millions of dollars.

* If things come to such a pass that she must go round among people *smelling of coal oil* she would go back to "good old Ohio."

* It just occurs to me that this is the Christian way of getting relief from all our troubles, and there is a beautiful text somewhere in the Bible referring to this very thing. Who will tell us where it is?

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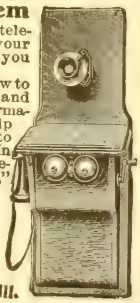

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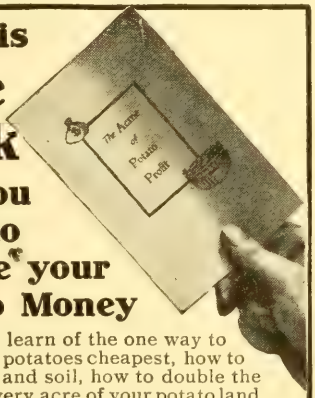


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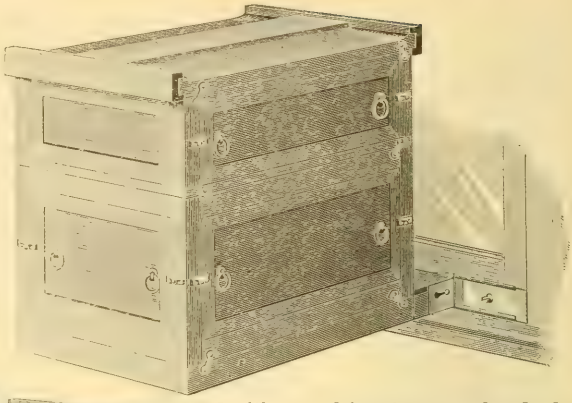
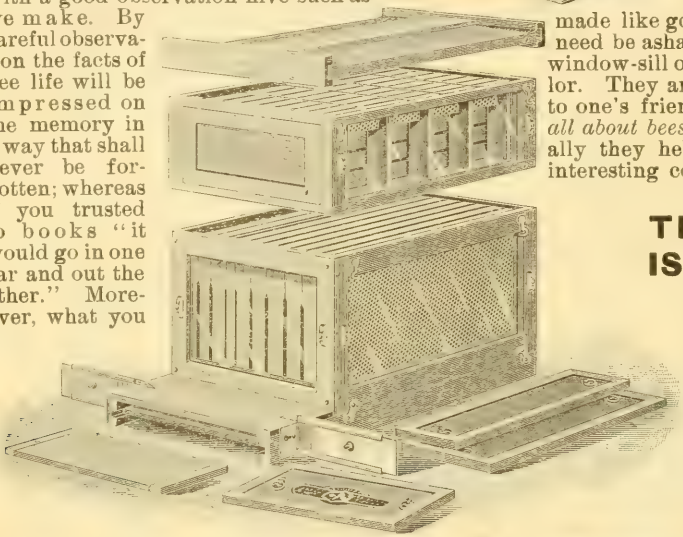
# Root Observation Hives for Nature Study.



At the present time the general tendency is to go to nature for our facts; and students of any phase of natural science are expected to rely on personal observation for the larger part of their knowledge.

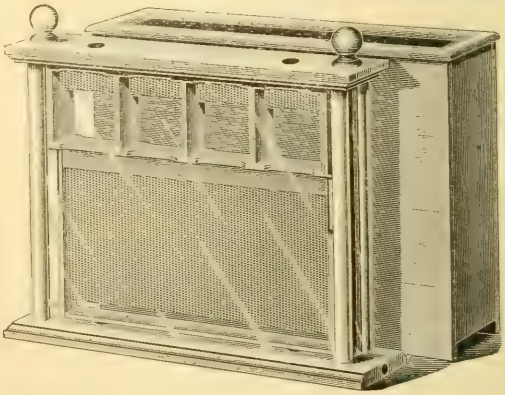
For a thorough and intimate acquaintance with the facts of insect life in general or of bee life in particular there is nothing to be compared with a good observation hive such as we make. By careful observation the facts of bee life will be impressed on the memory in a way that shall never be forgotten; whereas if you trusted to books "it would go in one ear and out the other." Moreover, what you read in books is not always so. We make up these hives in a number of ways to suit various ideas and different-sized purses. In the end they all amount to the same thing—a considerable addition to our stock of real knowledge.



made like good furniture, and nobody need be ashamed to have a hive on the window-sill of the sitting-room or parlor. They are excellent for showing to one's friends who require to learn *all about bees* in one lesson. Incidentally they help the sale of honey by interesting consumers in honey-bees.

## THE COST IS SMALL.

As you will observe by the annexed price list the cost is small. In point of fact, we can suit the slenderest purse. Order one with your regular order for bee-supplies. You will not regret it. On the contrary you will be surprised that you did not have one long ago.



## The CONSTRUCTION IS OF THE BEST.

We make no attempt, in making these observation hives, to reduce the cost to the last cent, because to do so would lead to dissatisfaction and failure. As a matter of fact they are

PRICE LIST OF OBSERVATION HIVES.

| | | | |
|---|---|---|---|
| Observation Hive (8-frame), complete with super, including frames, sections, glass—no bees | $7.50 | In flat, | $5.00 |
| " " " without frames | 7.00 | " | 4.50 |
| " Super " complete, with sections | 2.50 | " | 1.50 |
| " Hive " without super | 5.00 | " | 3.50 |
| " Brood-chamber, complete, with frames—no cover or bottom | 3.75 | " | 2.50 |
| " " without frames | 3.25 | " | 2.00 |
| One-frame Observation Hive for Danz. frame, no super, with case | 2.50 | " | 1.25 |
| " " " for Hoffman L. frames, no super, with case | 2.50 | " | 1.25 |
| " " " for Danz. frames, with super, with case | 3.00 | " | 1.50 |
| " " " for Hoffman L. frames, with super for 4¼ section, with case | 3.00 | " | 1.50 |

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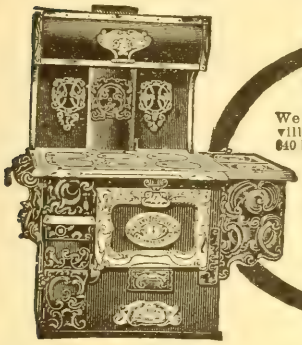

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and see list of towns where we have satisfied customers.

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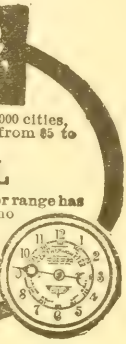



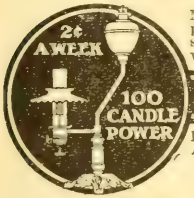


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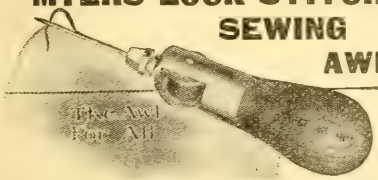

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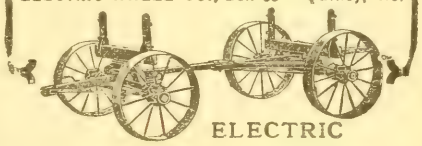




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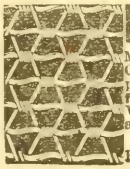

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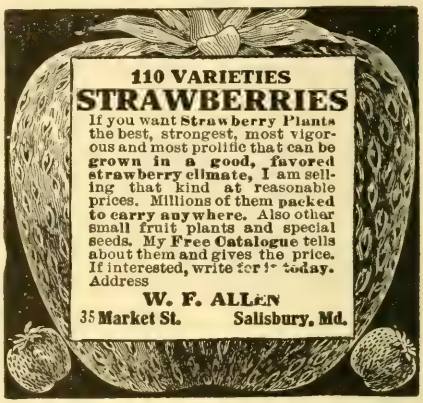

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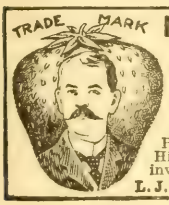


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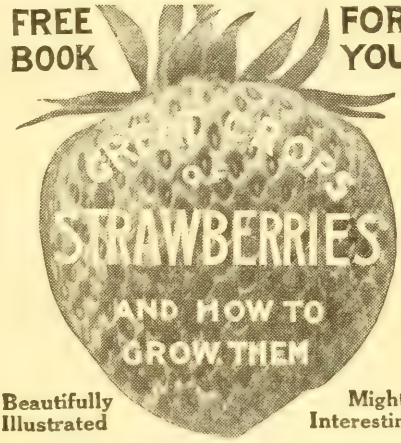


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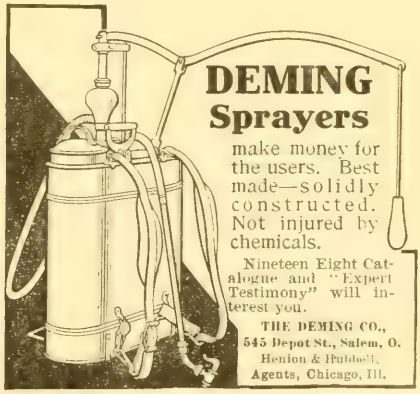

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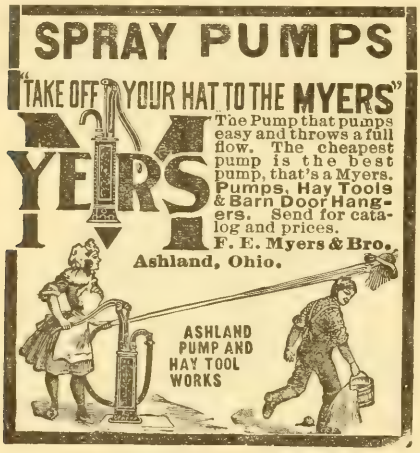


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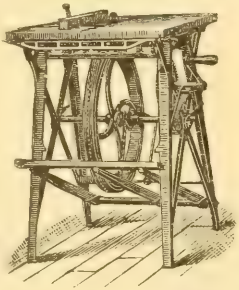

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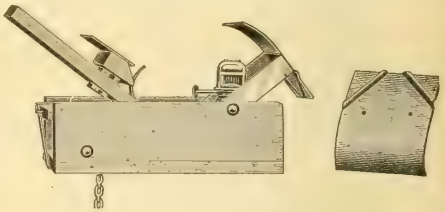

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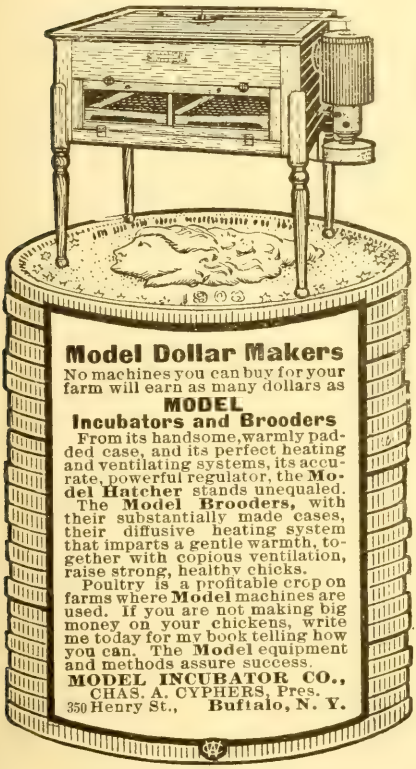

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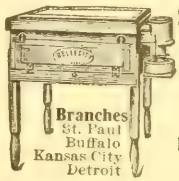
350 Henry St., **Buffalo, N. Y.**



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Double cases all over; best copper tank; nursery; self-regulating. Best 100 chick hot-water Brooder, $4.35. Both ordered together, $11.00. **Satisfaction guaranteed.** No machines at any price are better. Write for our book today or send price now and save waiting.

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**CHICKS THAT LIVE**

get strong and healthy—lay the most eggs—best for market—are chicks hatched in

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Most liberal offer ever made. Wholesale price. $3 to $8 saved. Thousands of users recommend **Gem Incubators and Brooders** as the favorite. Book "Poultry Profit and Proof," tells why. Sent free. **THE GEM INCUBATOR CO.** Box 53. Trotwood, Ohio.

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Just write me a **postal.** Let me pay the postage to you on my Big 1908 "Split Hickory" Vehicle Book. Shows over 125 styles of Vehicles and how you can save $25 to $40 by ordering direct from my factories. My

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No matter how many poultry books you now have, send for ours too. Contains 128 pages of 15 years' rich experience in poultry raising —also tells all about the famous

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and shows you how to hatch and raise chicks for profit. CATALOG FREE. Book on "Proper Care of Chicks, Ducks, Turkeys & Geese"—10c. 50c Poultry paper, one year, 10 cents.

**Des Moines Incubator Co., 190 Second St., Des Moines, Ia.**

**125 Egg Incubator and Brooder Both For $10**

If ordered together we send both for $10 and pay freight. Hot water, copper tanks, double walls, double glass doors. Our free catalog describes them.

**Wisconsin Incubator Co., Box 97, Racine, Wis.**

**Famous Invincible Hatchers From $4.00 Up**

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The safe way to buy an Incubator is on a **Real Free Trial.** Invincible Hatchers are sold that way and results guaranteed. Brooders, Poultry Houses and supplies all at very low prices. **224-page book Free.**

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**Hatch Chickens by Steam with the EXCELSIOR INCUBATOR Or WOODEN HEN**

Simple, perfect, self-regulating. Hatch every fertile egg. Lowest priced first-class hatchers made.

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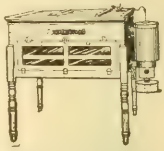
**MORE CHICKS MONEY**



The reason big poultrymen use Prairie State Incubators so generally is because they hatch the most "livable" chicks—reducing the 10-day death loss to lowest degree. Write for free catalog telling how it is done—and get the most valuable book of the year.

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**Poultry Magazine,**

Monthly, 50 to 100 pages, its writers are the most successful Poultrymen and women in the United States. It is

**The POULTRY TRIBUNE,**

nicely illustrated, brimful each month of information on How to Care for Fowls and Make the Most Money with them. In fact so good you can't afford to be without it. Price, 50 cents per year. Send at once for free sample and **SPECIAL OFFER TO YOU.**

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Monthly 24 to 64 pages, best writers and information how to **Make Big Money With Hogs.** It is

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Printed on heavy paper, well illustrated with Prize Winning Animals, Houses, Fixtures, &c. 50 cts. per year. **Our Premium Proposition to Agents** on these two Magazines enables you to get one or a pair or more of pure bred pedigreed pigs, 4 kinds, **absolutely FREE** or a big **Cash Commission** if you choose. Write me today for samples of the two papers and full particulars.

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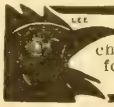
**MAKE MONEY IN POULTRY**

Others do it. You can too. Our big book **"Profitable Poultry"** tells how. Describes largest successful poultry-farm. 45 varieties of beautiful, hardy, pure bred fowls. Quotes **low prices** on fowls, incubators, supplies etc. Sent for 4 cents.

**Berry's Poultry Farm, Box 253, Clarinda, Ia.**



All leading varieties of standard-bred chickens ducks, geese, turkeys, and peafowls. Send 4 cts for large catalog.

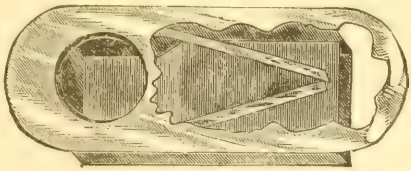
**J. J. BRENNER, D.12, Mankato, Minn.**

**4 LEADING BREEDS of POULTRY**

R. C. Rhode Island Reds, White and Silver-laced Wyandotte eggs per 15, $1.75; Barred Rocks at $1.25 per 15. Muscovie duck-eggs, $3.00 per 9. Fine Italian stand of bees, $5.75 with queen; tested queen, $1.25.

**Address LAFAYETTE POULTRY CO., ALMA, MO.**

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLD'G. CLEVELAND, OHIO.**



# PORTER BEE-ESCAPES

## HIVE ESCAPE

When taking off surplus this is the greatest saving device. It does away with the shaking of the heavy supers, the cruelty of excessive smoking which causes the bees to uncap their honey and start robbing. Just tip the super to the angle of 45 degrees and insert the board. In a few hours it is free of bees; then take off your super. You can as well afford to be without a smoker as without the Porter Bee-escape.

### PRICES

Each, 20 cts.; dozen, $2.25; postpaid. With board, 35 cts. each; $3.25 per 10; by express or freight.

### TESTIMONIALS

They are perfect in action.—British Bee Journal.

No bee-keeper can afford to be without them.—Prof. Cook in American Bee Journal.

Worthy of highest commendation.—Eugene Secor, judge on awards, World's Fair, Chicago.

I would not do without them even if they cost five five dollars apiece.—W. Muth-Rasmussen, Independence, Cal.

They are absolutely perfect. I can not tolerate my own make since using them.—John S. Reese, Winchester, Ky.

They are one of the best things ever brought into any apiary, and should be used in every bee-yard in the whole world.—Wm. McEvoy, Foul-brood Inspector, Ontario, Canada.

There is no robbing or fighting or disturbance in the apiary when the surplus honey is taken off with them. They are simply perfect.—W. Woodley in British Bee Journal.

## HOUSE ESCAPE

To be used over the doors and windows in the extracting-house, or any place you wish to clear of bees. The most persistent robber can not return. Some bee-keepers make a practice of taking off the filled supers and stacking seven or eight in a pile. The Porter Honey-house mounted on a board makes the best kind of escape. Don't wait till to-morrow before you get a supply. You can not afford to be without them longer.

### PRICES

Each, 25c; dozen, $2.75; postpaid.

### TESTIMONIALS

The Porter bee-escape clears the supers of bees so perfectly and quickly and easily that it makes the taking off of honey a pleasure instead of a dread as in former years.—G. M. Doolittle, Borodino, N. Y.

The removal of full honey-boxes has become an amusement since we began using the Porter bee-escape.—Ed. Bertrand, Editor Revue Internationale d'Apiculture, Nyon, Switzerland.

This number of the Review contains more unqualified praise of the Porter bee-escape than any other issue has ever contained of any other implement; but so long as it is deserved, who cares?—Bee-keepers' Review.

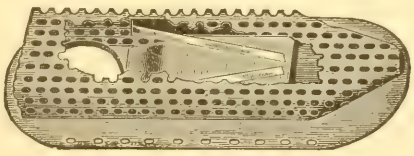
They are the greatest thing on earth for expelling bees from supers.—G. J. Flansburg, South Bethlehem, N. Y.

I would not be without them for four times what they cost.—Dr. W. A. Tufts, Musson, La.

Undoubtedly the best bee-escape is the one invented by R. & E. C. Porter.—W. S. Pouder, Indianapolis, Ind.

Bee-men are certainly behind the times if they can afford to use them and do not.—M. H. Mendleson, Ventura, Cal.

## For Sale by Dealers Everywhere!



**R. & E. C. Porter, Patentees**

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# WESTERN Bee-keepers

.. will ..

SAVE TIME AND FREIGHT

by ordering ROOT'S GOODS from Des Moines, Iowa.

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

JOS. NYSEWANDER
565-7.W.7th St., Des Moines, Ia.

# NEW GOODS! BIG STOCK!

New Warehouse Root's Goods
Prompt Shipment Low Freight

EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

HOWKINS & RUSH
241 BULL ST. SAVANNAH, GA.

# The Hand System

TO satisfy a number of customers we are now making hives to suit the above system, just as the inventor himself uses them. These are not listed in our regular spring catalog, and are not kept in stock at any of our agencies. All orders will be filled from Medina. If ordered early enough, however, they can be forwarded to any one of our branches for redistribution. If you are going to try a few of these hives the coming season, we earnestly urge you to order early before the rush season comes on.

PRICE LIST OF HAND DIVISIONAL HIVE AND PARTS.

We have had numerous calls for divisional hives just as Mr. Hand uses them. We will not list them in our catalog for the coming season, but will make them up to supply on special order, to those who desire to try them, at prices in table below. The outside dimensions being nearly the same as the regular Dovetailed hive, the regular covers and bottoms may be used.

| Each section is 19½ in. long, 5⅛ in. deep outside; upper portion of side removable with clamps to hold it in place. Sections used are 4¼x4¼x1½ plain, split three sides. Furnished in both eight and ten frame size. | Designating or Short Name | Nailed and Painted Each | In Flat | | |
|---|---|---|---|---|---|
| | | | Each | Five | Weight of 5 |
| Hand brood or extracting section, including the frames, springs, clamps, and nails; no foundation | Hand 8-8 | $ 65 | $ 50 | $ 2 25 | 35 |
| | Hand 8-10 | 70 | 55 | 2 50 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and 1-inch foundation starters | Hand 9-8 | 75 | 60 | 2 50 | 35 |
| | Hand 9-10 | 80 | 65 | 2 75 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and full sheets comb foundation | Hand 0-8 | 1 30 | 85 | 4 00 | 38 |
| | Hand 0-10 | 1 40 | 95 | 4 50 | 43 |
| Hand comb-honey section, including section-frames, and fences; no sections or foundation starters | Hand 2-8 | 75 | 60 | 2 75 | 30 |
| | Hand 2-10 | 80 | 65 | 3 00 | 35 |
| Hand comb-honey section, including section-frames, fences, sections, and full sheets foundation | Hand 1-8 | 1 45 | 1 00 | 4 75 | 35 |
| | Hand 1-10 | 1 55 | 1 10 | 5 25 | 40 |
| Hand four-section hive including two brood and two comb-honey sections; no sections or foundation starters | HandCE8822-8 | 3 50 | 2 65 | 12 00 | 180 |
| | HandCE8822-10 | 3 75 | 2 90 | 13 25 | 190 |
| Hand four-section hive including two brood and two comb-honey sections with sections and full sheets foundation | HandCE0011-8 | 6 30 | 4 25 | 20 00 | 200 |
| | HandCE0011-10 | 6 75 | 4 70 | 22 25 | 210 |
| Hand sectional super, no inside fixtures, including clamps nails, and flat tins | Hand Super-8 | 40 | 30 | 1 25 | 22 |
| | Hand Super-10 | 43 | 32 | 1 35 | 24 |

Hand brood-frames, 4⅞x17⅝x1⅜; ends, 1⅜x⅛; top, ⅛x⅜; bottom, ½x¼ ....$2 00 per 100 in flat; $18.00 per 1000
Hand section-frames, 4⅞x17⅝x1½; ends and top, 1½x¼; bottom, 1½x⅜..... 2.50 " " 22.00 "
Hand fences, 4⅞x17⅝. P style ..... 1.75 " " 16.00 "

The A. I. Root Company, Medina, Ohio

## Classified Advertisements.

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Wanted, Situations.

WANTED.—Position in apiary by 16-year-old boy; will work cheap. Address C. W. WEBSTER, Box 337, Prescott, Ariz.

WANTED.—By a young man of good habits, position in an apiary for the coming season; some experience. Address L. C. KUT, Greenfield, Mass.

WANTED.—Position in an apiary for season of 1908; have some experience; age 26; temperate. JOHN CLAUSEN, 5 Buena Vista Ave., San Francisco, Cal.

WANTED.—Work in the apiary the coming season; can furnish the best references; use neither tabacco nor intoxicants; expert. Wages expected, $30 00 per month and board. Southwest Texas preferred. J. N. MOET, Floresville, Texas.

## Help Wanted.

WANTED.—Hustling helper in the bee and honey business. A steady job for the right man. B. WALKER, Clyde, Illinois.

WANTED.—Apiarist to help with 200 stands of bees, all of which are run for extracted honey. Prefer a young man who has had experience in Cuba or some other tropical country. Will pay $25 00 and board per month until Oct. 1. Fare from New York, New Orleans, or Havana, first class, $52.50; second class, $37.50; from Santiago de Cuba, $10.00 less. W. J. YOUNG, Arecibo, P. R.

## Post Cards.

Learn to make and deliver post-cards to sitter in ten minutes at fairs, carnivals, etc. We teach you every thing by mail. See our offer in Feb. 1st and 15th issue. ACME POST-CARD CO., Medina, Ohio.

Post Card Photos.—Any one can make without a camera, from another photo; no knowledge of photography needed but my instructions at 50 cts. E. O. WALTZ, Medina, Ohio.

## Plants.

Why not beautify your home by the use of plants? They give the finishing touches, and are very attractive. We have the finest collection of house and garden plants grown by any florist. Write for price list; it's free. HAMMERSCHMIDT & CLARK, Dept. A. Florists, Medina, Ohio.

## Rugs.

Be sure to send for our circular before you have your old carpet made into rugs. A postal will bring it. SANITARY RUG CO., Delaware, O.

## Poultry Offers.

Business B. P. Rocks. Eggs, 15 for $1; 35 for $2; 60 for $3. MRS. E. J. ADKISSON, Rt. 13, Nashville, Tenn.

FOR SALE.—40 B. P. R. pullets cheap to make room. Eggs in season. MRS. W. L. BENNETT, Misco, O.

FOR SALE.—White Rocks, cocks and cockerels. Write your wants. DR. C. L. VAN OSDOL, Dillsboro, Ind.

FOR SALE.—$1.00 Barred Rock and Pekin duck eggs. Circular. A. W. NEWCOMER, Glen Rock, Pa.

FOR SALE.—Rose Comb Brown Leghorn eggs, 30, $1; 100, $3. A. W. RUTH, Whiting, Iowa.

FOR SALE.—15 Barred P. eggs, $1.00. They excel as winter layers H. G. LARUE, LaRue, O.

FOR SALE.—White Wyandottes, R. C. B. Minorcas, R. C. R. I. Reds, $1.00 per 15. JAMES STEWART, Franklin Furnace, O. R. F. D.

FOR SALE.—White Wyandottes, 15 eggs, 75 cts.; 30, $1.25. Uncle Sam potato, very productive; 1 pound by mail, 30 cts. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—Eggs, White Wyandotte, $1 per 15; $6 per 100. White Holland turkeys, $2 per 9. FRANK C. PELLETT, R. D. 4, Atlantic, Iowa.

FOR SALE.—Indian Runner duck eggs from choice stock, $1.00 per 12; $4.00 per 55; $6.50 per 100. KENT JENNINGS, Mt. Gilead, O.

FOR SALE.—Silverlaced and White Wyandottes. Single and Rose Comb R. I. Reds, choice stock, eggs $2 00 per 30. CHAS. F. L. CLEMONS, Rt. 3, Davenport, Ia.

FOR SALE.—W. P. Rocks, Fishel and Empire strain. I have twenty select females headed by two extra-fine roosters. Eggs, $2.00 per twenty. W. M. PARRISH, Rt. 8, Lawrence, Kan.

FOR SALE.—Eggs for hatching, S. C. Brown, Buff, and White Leghorns; Buff and White Rocks; Buff Wyandottes and S. S. Hamburgs, $2 00 per 15; $3.50 per 30. PETER H. LEVEY, Preston, Minn.

Highland Farm S. C. Brown Leghorns are veritable egg-machines, and will lay their weight in eggs in 30 days—farm range, vigorous stock; bred to lay; eggs, $1 00 per 15; $1.75 per 30. Prompt service and satisfaction guaranteed. J. E. HAND, Birmingham, Erie Co., Ohio.

## For Sale.

Pecans, 6c lb. f. o. b. Ferris, Tex. ORION COUCH.

A bargain.—10-fr. dov'd hives, one-story, at 94c.; two-story, $1.49 ea. J. F. BUCHMAYER, Dept. G, Iowa City, Ia.

FOR SALE.—Dahlias, 20 kinds, $1. Catalog. St. Louis Grand Prize. H. F. BURT, Taunton, Mass.

FOR SALE.—Opaline honey-jars, all kinds; send for price list. HAROLD E. SHORE, Germantown, Pa.

FOR SALE.—Strawberry-plants. Send for catalog. BUSKIRK BROTHERS' NURSERY, Independence, Ohio.

FOR SALE.—Vermont bee-keepers should have my 1908 price list. C. J. LAMB, East Calais, Vt.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. W. P. SMITH, Penn, Miss.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cts. each, postpaid. FRANK ALEXANDER, Delanson, N. Y.

FOR SALE.—Two hundred 8-frame dovetailed hives (Root's make), 200 5-gal. honey-cans in cases (new) at Lovelock, Nevada. Address C. K. ERCANBRACK, Watsonville, Cal.

FOR SALE.—A set of fine smith's tools and machines in good repair, cheap.
E. D. HOWELL, New Hampton, N. Y.

FOR SALE.—Bees, extractor, hives, supers, 10-fr., etc., nearly new; combs straight; no disease. Write for list. Good reason for selling. ISAAC D. KREISS, Benjamin, Pa.

FOR SALE.—Honey-cans used but once, emptied without steam or water, bright and clean; 100 cases or more, per case two cans, 25c; 50 cases, 30c; 25 cases, 32c; less, 35c. E. R. PAHL & CO., Milwaukee, Wis.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—Six H. P. boiler and engine on wheels, all in good condition; used to pump oil-well; have put in gas-engine; will sell on board cars for $75.00. Write for particulars. W. V. BINKERD, box 51, W. Monterey, Pa

FOR SALE OR EXCHANGE.—One 260-egg Excelsior incubator, $10.00; 200 8-fr. hives, 75 cts. each; supers and other supplies; also apple-trees of best varieties, 5 to 6 ft. F. H. MCFARLAND, Hyde Park, Vt.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer. CLEVELAND HEALTH FOOD CO., Cleveland, O.

FOR SALE.—Best Wisconsin sections, per 1000, $4.00; 2000, $7.75; 3000, $11.10; No. 2, 50 cts. less. Discount on Root's and Danz. hives and other supplies. Fifteen eggs, B. P. Rocks and Wyandotte, $1.00; Pekin ducks, 11 eggs, $1.50. H. S. DUBY, St. Anne, Ill.

FOR SALE.—One good part bloodhound dog; will hunt all kinds of game; well broke, $15; Rose Comb Brown Leghorn eggs, full blood; fifteen eggs, 75 cents; per 100, $3.50. Italian queens, 60 cts., untested. GEO. J. FRIESS,
Hudson, Mich.

FOR SALE.—Well-established queen-rearing business, widely advertised for two years; large circle of steady customers; best testimonials; orders at hand; best location and climate; no speculation. Reason for selling, departure for Europe. Write immediately to A. E. TITOFF, Ioamosa, Cal.

FOR SALE.—Eight Danzenbaker hives, complete with ten supers; frames filled with comb; 300 No. 1 sections; a few pounds of comb foundation; smoker, bee-escapes, etc. All used only one season. Good as new. Price $15.00 for complete outfit. Original cost, over $30.00. H. M. WINKEL,
533 Lincoln Ave., Milwaukee, Wis.

FOR SALE.—950 Hoffman frames, P. W.; 25 ten-frame chaff hives, nailed and painted; 50 empty bodies, ten-frame; 50 old-style Danz. covers, flat style, with channel irons, ten frame; 50 old-style A bottoms, ten frame, and one Doolittle wax-extractor. All these goods are new. MRS. MARY PARKER,
Sta. A., R. F. D., Syracuse, N. Y.

FOR SALE.—Automobile. Ford 1904 light touring car, two-cylinder engine, twelve to fourteen horse-power; good running order; two seats; rear seat removable. I have carried five grown people and nine half-grown children ten miles to a picnic. Just the thing for a bee-man. Will sell for $250 cash if taken at once. I have a chance to get a larger car. Will not sell at all if larger car goes before I get offer.
N. E. CLEAVER, Emporium, Pa.

## Honey and Wax Wanted.

WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard,
North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 S. Water St., Chicago, Ill.

## Honey and Wax For Sale.

FOR SALE.—1500 lbs. beeswax.
DR. GEO. D. MITCHELL & CO., Ogden, Utah.

FOR SALE.—40 cases comb honey, 15 extracted; white clover. C. F. PERKINS, 1208 Neil Av., Columbus, O.

FOR SALE.—302 lbs. of No. 1 white-clover comb honey in 4¼ plain sections, no-drip cases; 17 cts. a pound.
E. D. TOWNSEND, Remus, Mecosta Co., Mich.

FOR SALE.—300 cases of light-amber extracted honey at 5½ cts. f. o. b.. Address Box 182,
Tulare, Cal.

FOR SALE.—Fancy W. C. comb honey, 30 cases, $3 00 per case; one or more cases, $3.10.
ADAM A. CLARKE, Plymouth Creek Apiary, LeMars, Ia.

FOR SALE.—5000 lbs. clover and amber honey in 160-lb. kegs. C J. BALDRIDGE, Homestead Farm,
Kendaia, N. Y.

FOR SALE.—4000 lbs. choice white honey in 60-lb. cans—just the thing for bottling purposes.
H. B. PHILLIPS, Auburn, Me.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans.
ROBT. A. HOLEKAMP & SON,
4263 Virginia Avenue, St. Louis, Mo.

FOR SALE.—Choice extracted honey for table use—thick, well-ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample 10 cts. J. P. MOORE, queen-breeder, Morgan, Ky.

FOR SALE.—Fine article buckwheat comb, 22 to 23 pounds net per case, $2.75; balance of our amber at $2.50 per case; six cases candied comb at $2.00 per case. All cases have 24 sections.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

## Bees and Queens.

FOR SALE.—Bees. Correspond with O. E. BURDESS, Birdsall, New York.

Fine stand of Italian bees with tested queen, $5 75; fine tested queen, $1.50. Price list free. J. L. FAJEN, Alma, Mo.

FOR SALE.—All who intend to buy bees, queens, and hives, should write postal for Charles W. Zweily's 1908 catalog. CHARLES W. ZWEILY, Fremont, Ohio.

FOR SALE.—400 colonies Italian bees in 8 or 10 frame Dovetailed hives with Hoffman frames, at $6.00 per colony. In lots of 10, $5.00 per colony.
F. A. GRAY, Redwood Falls, Minn.

MOORE'S strain, and golden Italian queens, untested, $1.00; 6, $5.00; 12, $9.00. Carniolan, Banat, and Caucasian queens, select, $1.25; 6, $6.00; 12, $10.00. Tested, any kind, $1.50; 6, $8.00, Choice breeders, $3.50. Circular free. W. H. RAILS, Orange, Cal.

## Wants and Exchange.

WANTED.—To exchange fine Rip Rap pointer pups for queens or bees. F. J. CARTAN, Medicine Lodge, Kan.

WANTED.—Bees—full colonies and nuclei.
J. H. STONEMAN, Kelwood, Man., Can.

WANTED.—Bees, ranch, or small place in Missouri, in exchange for $900, equity in new 5-room house, rented in St. Louis suburbs. J. L. ROBERTS, Moscow Mills, Mo.

WANTED.—To exchange strawberry, blackberry, and raspberry and rhubarb plants, of the leading varieties, for honey-extractor, fdn., or any thing I can use in apiary. JOHN D. ANTRIM, Rt., box 55, Burlington, N. J.

WANTED.—To buy bees, or will run 500 colonies on shares. Have successfully managed large apiaries. F. B. CAVANAGH, Flint, Mich.

WANTED.—75 colonies of bees; prefer in 10-frame L. hives, easy shipping distance of Chicago. R. B. HOLBROOK, 226 S. Howard Ave., Austin, Ill.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

## Real Estate for Bee-keepers.

FOR SALE.—454 acres of land in Southern California; two sets of buildings, 117 colonies of bees, $10 per acre. Plenty of water. Address Box 64, Fallbrook, Cal.

FOR SALE.—Three village lots with a three-room house, small barn and henhouse, and 1000 colonies of bees in two-story dovetailed comb-honey hives, extractor and all fixtures; good location; satisfactory reasons for selling. Write for particulars if interested. S. LAMONT, Jarretts, Minn.

FOR SALE.—A nine-room house on a ten-acre lot, with apple and cherry orchards; two acres of growing timber, on Lake Huron shore, on rural delivery, two miles from city; good fishing, hunting, and wild berries handy. Write for terms. A. F. BRIGGS, Harrisville, Mich.

FOR SALE.—A desirable farm of 118 A. in southern Michigan, well located, and in a fine bee country; 100 A. plow land in a good state of cultivation; 15 A. valuable timber, plenty of good buildings, good water, and a fine bee-cellar. Write for particulars. FLOYD E. SMITH, Somerset Center, Mich.

## Bee-keepers' Directory.

My late circular on bees and poultry will interest you. H. G. LARUE, LaRue, O.

ITALIAN queens bred for honey, untested, 75c each GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Extra honey queens and choice mountain honey. Francis J. Colahan, Bernardo, San Diego Co., Cal.

ITALIAN QUEENS.—Mott's long-tongued (Imp'd) and goldens. Circular free. E. E. MOTT, Glenwood, Mich.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Neb.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426, Osage Ave., Phila., Pa.

ITALIAN BEES, queens, and Root's bee supplies. E. SCOGGIN, Carlsbad, N. M.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Well-bred bees and queens. Hives and supplies J. H. M. COOK, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list free. B. F. YANCEY & SON, Angleton, Tex.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

ITALIAN QUEENS by return mail or money refunded. Circular free. D. J. BLOCHER, Pearl City, Ill.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

ITALIAN BEES and queens—red-clover and golden strains. E. A. SIMMONS, Greenville, Ala.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan Cyprian queens. E. L. Pratt, Swarthmore, Pa. *Queen-rearing outfits and books; new catalog free.*

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business. June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

ANGEL is breeding his Golden beauties and bright three-banded Italian queens, but will not offer any for sale this season, on account of not being at home at all times of the season. SAMUEL M. ANGEL, Evansville, Ind

IMPROVED ITALIAN bees and queens ready in May. Circular and testimonials free; second-hand surplus arrangements for 4¼ sections, also folding cartons, cheap if taken soon, or will exchange. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular, ordr goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

"Seaboard Magazine" SIX SOUTHERN STATES SEABOARD'S STRONGHOLD Sent Free

**A MAN'S DISPOSITION**

is, without doubt, seriously affected by the climatic conditions which surround him.

ARE YOU PLEASANTLY LOCATED?

Are you shut in by the ice and snow of a rigorous winter, with naught but a cheerless sky to gaze upon? What of your lands now? Covered with snow? How about your stock? Have to be kept housed and fed?

The farmers in our territory are plowing, their stock grazing on the hillsides, and in the famous Manatee section growers are shipping their products to Northern markets, receiving remarkable prices for the same, due to the season.

Our lands are just as fertile as yours, produce just as much and at a time when prices are the best. It's a duty you owe yourself and family to look into this.

**CLIMATE IS A MOST IMPORTANT FACTOR** in connection with the profits, as well as pleasure, to be derived from your location.

Wouldn't you like to be pleasantly situated, surrounded by climatic conditions which permit work to be carried on the entire year, and where the struggle for existence against the elements of a frozen North is not known?

The climate in the six States traversed by our line is unsurpassed anywhere, and the profits being derived by those who only a few years ago were battling with the rigors of winter in a northern location is evidence of the value of our lands. Do you expect to remain where you are and keep up the struggle? Why not come down into southern sunshine and be pleasantly located, while at the same time you are deriving big profits from your crops?

**OUR LITERATURE IS FREE.** The "Seaboard Magazine," prepared especially for the benefit of parties contemplating a change of location, will help you. Let us put your name on our mailing-list. Drop us a postal to-day,

**J. W. White,**
**General Industrial Agent,**
**Seaboard Air Line Railway,**
**Dept. F, Portsmouth, Virginia.**

Clover seed has still further advanced. We can not quote any firm price here. Write for price if interested.

BEES AND QUEENS.

The season promises to be a good one for the early delivery of both bees and queens, and there is considerable activity in inquiries and orders, especially for high-grade stock. Our apiarist will begin making selections within a short time; and, to secure a good selection, the earlier you order, the better the chance will be for getting something extra fine. We have breeding-queens at $6 00, $9 00, $12.00 up. Our stock is mainly the three-banded or leather-colored Italians. We ship either by mail or in nuclei as desired.

MAPLE SUGAR AND SYRUP.

We have had so far the promise of a very good season for maple products. Our readers will remember that Ohio maple is unsurpassed, and is much sought for by large buyers all over the country. We handle first quality only, and quote subject to market changes as follows:

Maple syrup in one-gallon square cans at $1.15 per gal.
" " 6 one-gallon cans in a case, $6.60.
Maple sugar in less than 50-lb. lots at 15 cts. per lb.
" " 50 lbs. and up, 12½ cts. per lb.

In order to secure first run, orders should reach us immediately after the receipt of this notice.

NEW TAPER-PANEL HONEY-JARS.

We show here an illustration of a new style of honey-jar holding half a pound. It is a taper-panel jar with lacquered tin cap lined with waxed paper wad which turns on tight with a one-fourth turn, warranted to hold air-tight. We expect to have ready soon the one-pound size of the same style jar. Packed in reshipping-cases of two dozen each, ready to ship again, when filled, without additional packing.

Price ½-lb. taper-panel jar, 80 cts. per case; 6 cases, $4.50.

Price 1-lb. taper-panel jar, $1.00 per case; 6 cases, $5.70.

Put up in crates of 2 gross, ½-lb. size, $3.75 per gross.
Put up in crates of 1 gross, 1-lb. size $4.80 per gross.

SIMPLEX HONEY-JARS.

The factory have assured us that we may again secure this popular honey-jar in several sizes, including the one holding one pound of honey. We have ordered a fresh supply, but do not expect to have them in stock till next month. They will be packed in reshipping-cases of two dozen each, and the price will be $1.10 per case; 6 cases, $6.30.

NO. 25 HONEY-JARS.

During the past year we have had an unusual amount of trouble with breakage of this jar, even in the reshipping-cases packed with corrugated paper. The breakage occurred either in the porcelain cap or the top rim of the jar where the cap rests. We find we can get this same jar with lacquered tin cap without the center being cut out. This cap is lined with waxed paper wad, which seals tight on the top edge of the jar. This style of cap not only does away with breakage almost entirely, but enables us to furnish the jar at a lower price. We are not yet supplied with the new stock, but expect to have them next month at the following price. They will be packed as usual, two dozen in reshipping partitioned cases. No. 25 jars, tin cap lined, 90 cts. per case; 6 cases, $5.10. We can still furnish from stock the usual style of No. 25 with porcelain caps at $1.10 per case; 6 cases, $6.30.

A NEW SIZE OF SECTION.

There seems to be a demand in some localities, where bees are inclined to daub with propolis or otherwise discolor the wood in sections for a wide frame completely enclosing the sections. Our regular supers are adapted to the regular sections in section-holders without a top-bar. To provide a top-bar as well as a bottom it is necessary either to make the super deeper or the section shorter. In order to use the regular deep super we have decided to make a new section, 4¼x4¾x1⅜ or 1⅛ plain, no beeway. This will be used in a section frame hanging by top-bar in the regular deep super, interchangeable with the shallow Hoffman frame 5⅜ deep. This will necessitate a new fence adapted to this size of section, which will be designated by the letter N. The 4¼x4¾x1⅛ will hold a full pound, and will work best in the eight-frame super, 24 to the super. In the Danz. width (16¼) ten-frame super the 4¼x4¾x1⅜ will fit best 32 to the super. These sections may be split for inserting foundation by the Hand method, and the correct size of sheet for that purpose would be 4⅝x17⅛. Price of N section-frames, $2.50 per 100 in flat. Price of N fences, $2 00 per 100. Sections 4¼x4¾x1⅜ or 1⅛, same price as regular Danz., $4.75 per 1000, No. 1; $4.25 for No. 2. Unless you specify we will send frames and sections 1⅜ wide, and supers fitted with the same. Deep super fitted with N section-frames, N fences and springs, either 8 or 10 frame, will be designated 2 | N 8. Price, nailed and painted, 70 cts. each; in flat, 55 cts; 5 for $2 50.

2 N | 10. Price, nailed and painted, 75 cts. each; in flat, 60 cts.; 5 for $2.75.

With sections and foundation-starters included.

4 N | 8. Price, each, nailed and painted, $1.00; in flat, 75 cts. each; 5 for $3.50.

4 N | 10. Price, each, nailed and painted, $1.05; in flat, 80 cts. each; 5 for $3.75.

With sections and full sheets of foundation.

1 N | 8. Price, each, nailed and painted, $1.40; in flat, $1.00 each; 5 for $4.50.

1 N | 10. Price each, nailed and painted, $1.45; in flat, $1.05 each; 5 for $4.75.

These are not listed in our catalog this season, and not in stock with any of our dealers. If you wish to test them you will have to make special orders to secure them. You can get them through your dealer if you order in ample time and are not in a hurry to receive them. This section will require a new size of carton and a new size of shipping-case to put them up for market. We offer the new size for experiment this season to see if it has sufficient warrant for introduction into the catalog another year. By cutting beeways in the top and bottom they could be stored without fences or separators, and four could be placed in a shallow Hoffman frame for storing, though they would not be as well protected as in a section-frame. The latest style of shallow frame with ⅞-inch ends would be rather scant in length inside to take four sections, but those made earlier would have room.

## Convention Notices.

The North Texas Bee-keepers' Association will meet at Blossom, Lamar Co., Texas, on the first Wednesday and Thursday in April. All bee-keepers are invited to attend. Come on, and let's make it a grand time. Free entertainment is provided.

W. H. WHITE, Sec.

The Panhandle Bee-keepers' Association will meet in Knights of Golden Eagle Hall, corner of Jacob and 38th St., Wheeling, on March 25. Morning session at 10; afternoon, 1; evening, 7. The object of this association is to promote and protect its members. All bee-keepers are requested to attend. Ladies are cordially invited.

W. L. KINSEY, Sec.
Blaine, O.

The Central Tennessee Bee-keepers' Association will meet in the rooms of the Nashville Board of Trade on Saturday, April 25, at 10 A.M. A full attendance of the members is desired, as this is the regular annual meeting for the election of officers, etc. A good program has been arranged, which will include essays and discussions on subjects of interest to bee-keepers.

J. M. BUCHANAN, Sec.
Franklin, Tenn.

The seventeenth annual convention of the Connecticut Bee-keepers' Association will be held in Jewell Hall, Y. M. C. A. building, Hartford at 10:30 A.M. Apr. 9, for the election of officers and the transaction of any other business proper to come before the meeting. A program of unusual interest and value is being arranged, and no bee-keepers should fail to attend. The matter of organizing a fall fair, under the provisions of a State law, is to be considered, which will be of vital interest to the honey industry.

J. A. SMITH, Sec.

THE NATIONAL CONVENTION—AN IDEAL SPOT FOR IT.

The National convention has not always been fortunate in its place of meeting. Sometimes it has been held near a noisy, dusty street, where the rattling of trucks over stone pavements and the rumble of street cars would often entirely drown the speaker's voice. Again, it has been held in some hot close hall up two or three flights of stairs.

We have not always been thus unfortunate. Some of the meeting-places have been very comfortable, and well adapted to our needs; but never, in its forty-odd years of existence, has the National met in a place so ideally perfect as the one chosen for the coming convention, to be held next October in Detroit, Michigan. It is the pavilion, or sun palace, built by the Wayne Hotel almost expressly for the use of conventions. It is back of the hotel, away from the noise and dust of the main street, and extends down to the very edge of the Detroit River, where the traffic of the great lakes may be seen passing and repassing at all hours of the day. At one side of the pavilion is a little garden, or private park, filled with beautiful flowers, trees, lawns, and walks. Upon the other side is Third Street, but it is paved with asphalt, which gives but little sound. Besides, the street ends at the river, and is not much used opposite the pavilion.

The pavilion is two stories high, and it is in the upper story where the convention will be held. The sides can all be thrown wide open, allowing the cool river breezes to sweep through; or the windows may all be drawn down if desirable. If the weather is cool enough to need it, steam heat can be turned on. In fact, we shall be able to rid ourselves of noise, dust, heat, or cold. We can sit at our ease, with the beautiful river at our feet, and the spires and chimneys and wooded hills of the king's domain (Canada) looming up in the distance.

Near the center of the pavilion, but somewhat to one side, is an inclosed space, perhaps forty or fifty feet across, the sides mostly of glass, and extending from floor to ceiling. In this will be a capital place to exhibit honey, wax, and supplies—near at hand, yet not right in the convention room, which sometimes causes annoyance.

All of these comfortable quarters will be *free*, with the understanding that we make our headquarters at the Wayne Hotel. The Wayne is a strictly first-class house—what some of us common folks might call high-priced. It has an unusually large office, or lobby, with two fireplaces, or grates, as they are now called; marble floors and supporting pillars, with large leather-bound lounging-chairs and sofas—a delightful visiting-place for us between sessions. Every thing is quiet, orderly, and well managed. No more desirable stopping-place could be found.

What are the rates? They run from $2.50 to $4.50, American plan—that is, including meals; but here is the bargain that we have made: They will take care of 150 bee-keepers at $2 50 per day, provided two will occupy the same room; and who ever heard of a bee-keeper at a convention who wished to be put off in a room all by himself? In order to give this flat rate for so large a number, many rooms will be used for which the charge is ordinarily much higher.

Of course, no one will be compelled to stop at the Wayne, as there are other hotels within two blocks where 200 people, extra, can be cared for at from $1 25 to $2.25 per day. In these times, however, it is difficult, in a large city, to secure really desirable accommodations for much less than $2.00 a day; and when one has paid that much, besides several other dollars to reach the city, it seems foolish to allow a paltry 50 cents a day to stand in the way of joining the crowd and being "one of the boys."

One thing more: The Michigan Central and the Big Four railroad station stands just across the street from the Wayne, while the Union station, used by the Pere Marquette, Wabash, and Canadian Pacific, is only two blocks away. The Grand Trunk and the Lake Shore and Michigan Southern station is several blocks away—perhaps seven or eight—but it is easily reached by street cars that pass the Wayne. The electric-suburban-car station is within easy walking distance—only four or five blocks.

The dates for holding the convention have been fixed on Oct. 13, 14, 15—at a time when the weather conditions in the North are usually ideal. The heat and dust of summer are past, and wintry blasts and snowdrifts are in the distant future.

W. Z. HUTCHINSON,
Flint, Mich., Feb. 10. Sec. N. B. K. A.

BEE-KEEPING IN HAWAII.

We have received the report of the annual meeting of the Hawaiian Bee-keepers' Association; but for lack of space we are compelled to abridge it greatly. The officers of the association are: President, A. F. Judd; Vice-president, T. V. King; Secretary, D. L. Van Dine; Treasurer, J. O. Young.

The former vice-president, Albert Waterhouse, presided. One of the main objects of the meeting was to hear the report of Secretary Van Dine on his trip to Washington to see Secretary Wilson with regard to the status of Hawaiian honey under the pure-food law. He reported the entire success of his mission. He had also taken the opportunity to make a study of the honey-plants of California with a view to the introduction of some of them, and in this he had the assistance and coöperation of the United States Department of Agriculture.

In company with Mr. J. M. Rankin, Special Agent in Apiculture at the Introduction Garden, Chico, Cal., he journeyed from Riverside to San Francisco. The principal honey-plant in Hawaii is the algarroba, or mesquite (*Prosopis Juliflora*); but to create a great honey industry more honey-bearers must be introduced. Mr. Rankin sent seeds of phacelia (two species), black sage, white sage, wild alfalfa, and horehound. He also recommended white sweet clover, but sent no seed.

The treasurer's report was read, which showed the association is sound financially. It was decided that all members whose dues were paid in advance should receive free a year's subscription to the *Bee-keepers' Magazine*. The matter of introducing new honey-plants was turned over to a committee. A number of new members were admitted.


Root's Supplies
... at ...
ROOT'S PRICES

Give us your order.

CHURCH & SMITH
(Successor to C. M. CHURCH)
924 4th Ave, New Kensington, Pa.

HONEY WANTED.—The coming season we shall want to buy about 25 tons of fancy comb honey, and three carloads of fancy extracted honey. Also butter, eggs, and poultry. CHURCH & SMITH.

GREIDER'S FINE
Poultry Catalogue
for 1908 is larger and better than ever. Tells all about pure-bred poultry and illustrates 60 varieties. Contains 10 beautiful chromos of leading breeds—pretty enough to frame. Tells of best Louse Killer, how to cure diseases, make money. Only 10c postpaid. Send to-day for a copy.
B. H. GREIDER, Rheems, Pa.

Honey-cases for sale. Two cans to the case. Both cans and cases in A-1 condition. Price 30 cents per case in lots of 100 cases or more. Write for price. MICHIGAN WHITE-CLOVER HONEY CO.

# Mr. Bee-keeper,

Was 1907 a POOR YEAR for you?

It was a GOOD YEAR for users of

# DADANTS' FOUNDATION.

One dealer used 14,000 pounds.

Another dealer used 7,250 pounds. Another dealer used 4 500 pounds. Another dealer used 4,500 pounds.
Another dealer used 6,000 pounds. Another dealer used 4,500 pounds. Another dealer used 3,000 pounds.

*Thousands of pounds sold to the bee-keeper direct, or worked up for him out of his beeswax.*

The DEALER likes DADANT'S FOUNDATION because the bee-keeper likes it.

The bee-keeper likes it because his BEES like it.

The BEES like it because it is exactly like their own comb, so PURE and SWEET and CLEAN.

DADANT'S FOUNDATION is the Standard because it is the BEST.

Wax worked into foundation. Send for our Supply Catalog.

**DADANT & SONS, HAMILTON, ILL.**

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**Every thing you want; all made by us in our own factories==at LOWEST PRICES.**

**The American Bee=keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

# W. T. FALCONER MFG. CO.

DEPARTMENT G, :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# $500.00 ACCIDENT INSURANCE POLICY FREE!

## FARMERS' INSURANCE THAT REALLY INSURES.

You may have had other chances to buy accident insurance that would protect you in elevators, on steamboats, and automobiles, but this is *the first chance you have ever had* to get real protection in your ordinary work. This NEW $500.00 POLICY was secured from the North American Accident Insurance Company, of Chicago, Ill., (Surplus $331,498.66) the largest company in America handling this class of policies, after long negotiations. It took three months to induce the company to write the special features that were required to make it valuable for rural people. By buying the policies outright in very large quantities, it is now possible to offer it FREE with this remarkable practical combination of magazines.

GLEANINGS IN BEE CULTURE, $1.00
the bee-keepers' favorite paper.

FARM JOURNAL (five years), .75
the standard farm paper of the world.

GARDEN MAGAZINE—FARMING, 1.00
a most beautiful, practical horticultural magazine.

INSURANCE POLICY . . . 1.00

$3.75

## All for $2.

These magazines, if paid for separately, would cost you $2.75, but we can sell ALL THREE MAGAZINES with the NEW INSURANCE POLICY for ONLY $2.00. This is because the three publishers have combined for a subscription campaign. If each one sent you a separate letter it would cost us just three times as much as where we offer all three together. THE SAVING GOES TO YOU.

If the policy is not wanted we can substitute any of the following: "Designer," "Housekeeper," "Ladies' World," "McCall's Magazine," "Mother's Magazine," or the Garden and Farm Almanac.

## WHY SHOULD YOU HAVE THESE PAPERS?

**BECAUSE** GLEANINGS IN BEE CULTURE is the great paper in America devoted to bees and honey. If you have bees, or are going to get them (and everybody who lives in or near the country should have bees), you need the most reliable and latest information, and you want at the same time the simplest directions possible. You want the bee business in a nutshell, and that is what GLEANINGS will give you. For the beginner or the most expert it is equally valuable.

**BECAUSE** FARM JOURNAL is far and away the foremost farm-paper in the world, a boiled-down, practical, helpful, entertaining monthly, built to make the rural homes of America more happy, prosperous, and contented, and already doing it for more than 500,000 homes. For farmers, villagers, or suburbanites.

**BECAUSE** the most beautiful garden and horticultural publication in the world is the GARDEN MAGAZINE, full of sound sense, beautiful engravings from photographs, and fine printing. It has ten issues at 15 cents each and two at 25 cents each, per year, and the subscriber gets his money's worth twice over. It is a delightful magazine, useful, stimulating, and ornamental.

## WHY SHOULD YOU HAVE THIS INSURANCE?

Because you are in danger, every moment, of an accident which may cripple you for weeks, months, or for life; because the loss of an eye, a hand, or a foot, may mean destitution for yourself and your family; because this protection, for a full year costs you nothing whatever.

**WHAT THE POLICY PAYS:**

| | |
|---|---|
| **For Loss of Life** | $500.00 |
| **For Loss of Both Eyes,** meaning entire and permanent loss of the sight of both eyes | 500.00 |
| **For Loss of Both Hands,** by actual and complete severance at or above the wrist | 500.00 |
| **For Loss of Both Feet,** by actual and complete severance at or above the ankle | 500.00 |
| **For Loss of One Hand and One Foot,** by actual and complete severance at or above the wrist and ankle | 500.00 |
| **For Loss of One Hand,** by actual and complete severance at or above the wrist | 125.00 |
| **For Loss of One Foot,** by actual and complete severance at or above the ankle | 125.00 |
| **For Loss of One Eye,** meaning entire and permanent loss of the sight of one eye | 50.00 |

Provided such loss shall result within thirty days from date of accident, from accidental bodily injuries, solely and independently of all other causes, and covers accidents as follows:

Being thrown from a mower by horses.
Being knocked down in the road by a wagon or automobile.
Being hurt in a bicycle accident or collision.
Being hurt while operating corn-sheller, fodder-cutter, etc.
Being caught in a burning building, house, or barn.
Being hurt in an elevator or any public conveyance—train, trolley, boat, etc.
Being injured in a runaway.
Being frozen or frostbitten.
Being injured by robbers or burglars.

Should the Assured obtain injuries *in the manner specified above*, which shall not prove fatal, but which shall immediately, continuously, and wholly disable and prevent the assured from performing each and every duty pertaining to any business or occupation, the Company will pay the Assured FIVE DOLLARS PER WEEK during the time of such disablement, but not exceeding six consecutive weeks for any one accident.

## NO DELAY OR EXAMINATION.

The insurance goes into effect as soon as you receive the policy and mail back the coupon attached to it. There are no dues, taxes, premiums, or assessments of any kind whatever to be paid by you. We have paid everything in full.

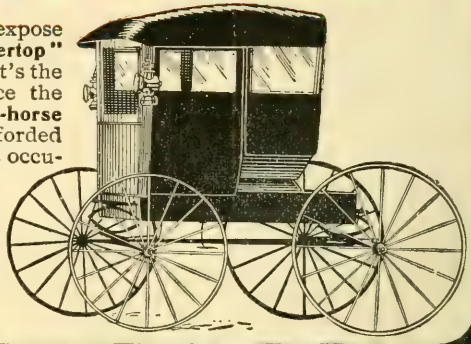
The three papers will begin at once, and will come to you each month till the time expires. THEN THEY WILL STOP, unless you order them renewed.

Send us $2.00 by registered mail, or postoffice or express money-order to-day. Money refunded to any dissatisfied subscriber. Address

**GLEANINGS IN BEE CULTURE, MEDINA, O.**

# Keep Dry and Comfortable

## WHEN YOU DRIVE



Be snug and comfortable. Don't expose yourself to the elements. The **"Sheltertop" Buggy** will protect you on your drives. It's the first real improvement in buggies since the days of the **"Deacon's wonderful one-horse Shay."** The first buggy that ever afforded immediate and absolute protection to its occupants from rain, snow, mud, wind, dust—the only buggy with a top that closes up tight in a moment and actually shuts out every drop of rain, while at the same time it allows ample and thorough ventilation and a clear, unobstructed vision in every direction.

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This is certainly the buggy for the farmer and the man who drives much. It makes a wet, blustering day worth almost as much as a dry one. You can ride in it to transact business at the neighbor's, or in town, as comfortably as you could in any other buggy on a clear, bright, dry day.

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# Gleanings in Bee Culture

MASSACHUSETTS AGRICULTURAL COLLEGE

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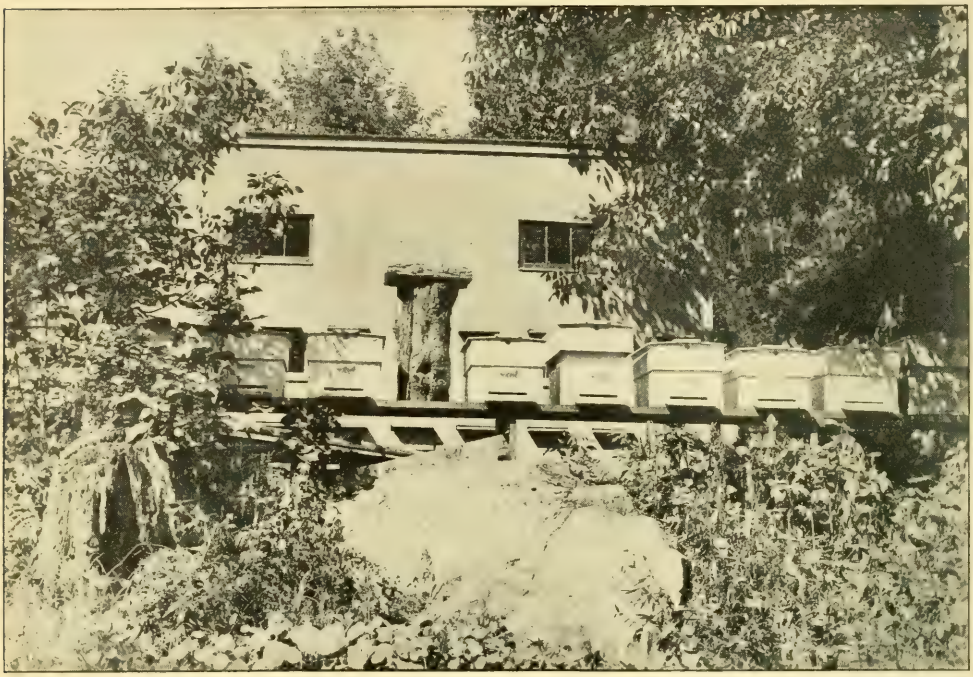
*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI April 1, 1908 No. 7

# THE OBSERVER APIARIAN LABORATORY



**The Largest and Best-equipped Experimental and Scientific Apiary in the United States** is located at Stamford, Ct. It is under the management and personal work of Edward F. Bigelow, A.M., Ph.D., "The Nature-study Man," well-known to all readers of GLEANINGS IN BEE CULTURE. This laboratory is well-equipped with experimental cages, apparatus, and appliances. It contains eight educational hives in four different designs (made by The A. I. Root Company). There are thirty-eight colonies at present under careful experiment and observation. In direct connection with the laboratory is a photograph gallery fitted with cameras and high-grade lenses, including a 6 1-2 x 8 1-2 photo-micrographic camera fitted with acetylene and oxy-hydrogen light, far beyond the power and scope of the ordinary laboratory. A sample of the work of this laboratory was "The Story of Honeycomb," published in GLEANINGS IN BEE CULTURE for August 1, 1907. To that article Editor Root had the following introduction:

"The following article by Professor Edward F. Bigelow, the nature-study man, lecturer, and one of the editors of *St. Nicholas Magazine* on the subject of honey-comb, its construction and development, is one of the best if not THE best that was ever written. The photographs are superb, and instructive as well as interesting. The article as a whole will be incorporated in the next edition of our A B C of Bee Culture, now in process of revision, and, later on, made the subject of a special booklet."

Other articles equally or more instructive and entertaining are now in preparation. Much of the work of this laboratory, in the future, will be published in

## THE GUIDE TO NATURE.

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I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

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If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

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# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW YORK.—Market very quiet on comb honey as well as extracted. Our comb honey is fairly well cleaned up, but there is still considerable left, and unless the demand improves most of the lower grades, in all probability, will have to be carried over. While there is a fair demand for extracted, it does not compare favorably with former years, and it is almost impossible to sell large quantities. Prices remain about the same. Beeswax somewhat firmer and in good demand at from 29 to 31 according to quality.

HILDRETH & SEGELKEN,
March 26. 265 Greenwich St., New York.

ST. LOUIS.—Since our last there has been no improvement in the market for honey. Comb honey is especially dull. The stocks on hand, however, are small. We quote: Fancy white comb honey, 15 to 16; No. 1, 13 to 14; amber, 13 to 14; broken and defective, less; extracted, in cans, white, nominal at 8½ to 9; amber, 7 to 8; in barrels, 6½ to 7; granulated extracted sells at ½ to 1 cent per lb. less. Beeswax is firm at 28 for prime; all impure and inferior, less

R. HARTMANN PRODUCE CO.,
March 20. St. Louis, Mo.

ZANESVILLE.—The honey market remains quiet, although if any thing there is a slight improvement, and also some stiffening in prices. No. 1 to fancy white comb brings wholesale from 18 to 21, according to quality and source. There is some demand for best extracted in glass packages for the retail trade. Beeswax is in light demand; would pay 30 cts. f. o. b. here in exchange for bee-supplies.

EDMUND W. PEIRCE,
March 18. 136 W. Main St., Zanesville, O.

INDIANAPOLIS.—Very little honey is now being offered by producers; and while our market is fairly well stocked the demand is slow, and indications are for a decline in prices. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 16 to 17; extracted white clover, 9 to 10; amber in barrels, slow at 6 to 6½. Beeswax, 28 cents cash, or 30 in exchange for merchandise. W. S. POUDER,
March 18. Indianapolis, Ind.

KANSAS CITY.—The demand for comb and extracted is light, and receipts good. We quote: Fancy white comb, 24 sections, $3.10 per case; No. 1 white comb, 24 sections, $3 00 per case; No. 2 white comb, 24 sections, $2.75 per case; white extracted, per lb., 8. Beeswax, 25. C. C. CLEMONS & CO.,
March 20. Kansas City, Mo.

CHICAGO.—There is very little demand for honey of any kind, and the supply is quite large; hence there is very little opportunity to make sales under these conditions; but the general tendency in prices now is downward. Beeswax is steady at 28 to 30.

R. A. BURNETT & CO.,
March 19. Chicago, Ill.

SAN FRANCISCO.—Honey remains quite firm at prices that have prevailed for some time. There is none of much consequence coming in at present, and with a limited demand the market shows no great activity. Water-white comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, extracted, 7 to 7½; dark amber and candied 5¼ to 5¾.

*Pacific Rural Press*, March 14.

ST. PAUL.—Receipts are very light; demand moderate, and prices steady. The prices below represent those obtained for shipment in small lots. Fancy white clover, per lb., 18; fancy California, 24 combs to the case, $4.00; strained, in 60-lb. cans, per lb., 10 cts.

W. H. PATTON, Sec. Board of Trade,
March 23. St. Paul, Minn.

BUFFALO.—The demand here for honey is very slow—receipts more liberal lately. We quote fancy white comb, 16 to 17; No. 1 white comb, 15 to 16; No. 2 white comb, 12 to 13; buckwheat, comb, 11 to 12; white extracted, 8 to 10; dark extracted, 7 to 8. Beeswax, 30.

March 27. W. C. TOWNSEND, Buffalo, N. Y.

LIVERPOOL.—Honey, steady, with Chilian, at 4 to 6½; Peruvian, 3½ to 5; California, 7½ to 10; Jamaican, 4¼ to 4½; Haitian, 5 to 5¼. Beeswax from Africa, 29 to 30; Jamaican, 34 to 35; American, 30 to 33; West Indian, 29 to 32; Chilian, 30 to 36

TAYLOR & CO.,
March 14. 7 Tithebarn St., Liverpool.

Extracted
Honey
Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY
Purchasing Department,
205 La Salle St., Chicago, Illinois.

WE WILL BUY AND SELL
HONEY
of the different grades and kinds.

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We are always in the market for WAX at highest market prices.

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Think we are crazy about that bee-veil of ours, do you? Well, there are others. Copy of order received last day of February:

> Denver, Col., Feb. 28, 1908.
> Gentlemen:—Please send one dozen more of your MUTH BEE-VEILS. Send with the other order if not already sent.
> Yours truly, THE COLORADO HONEY PRODUCERS' ASS'N.

That's the way bee-people order

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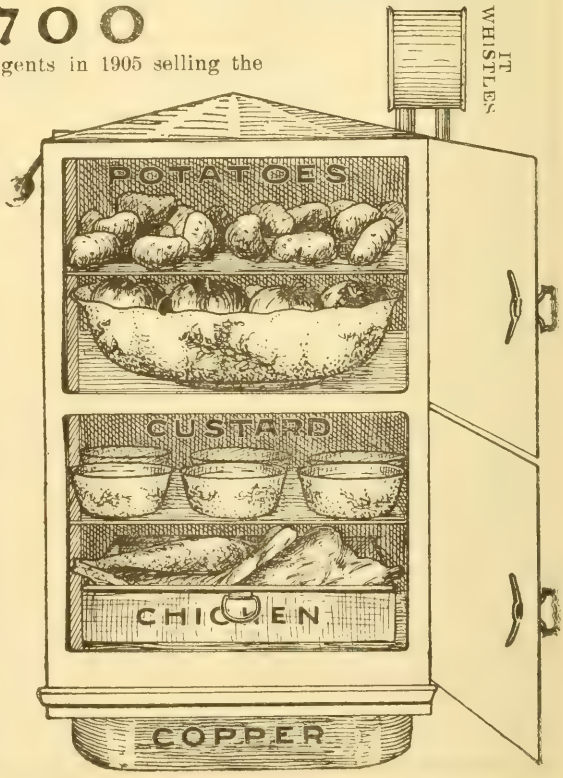

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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z. HUTCHINSON, editor and proprietor of the *Bee-keepers' Review*, and author of Advanced Bee Culture.

No bee-keeper's library can be at all complete without a copy of this magnificent apiarian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal.*

This work of 536 pages is, as its name implies, a complete cyclopædia of every thing pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that, "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of GLEANINGS, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and out-apiaries; Dr. E. F. Phillips on the eye, parthenogenesis, and scent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say anything about a book of which already 100,000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee-keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner, and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal*. Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide," and "The Honey-bee."

# Gleanings in Bee Culture

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BICYCLES TO THE FORE.

If you are interested in beautiful printed matter, we feel sure you will be delighted with the new catalog issued by the Meade Cycle Co., of Chicago. It is, undobtedly, the handsomest bicycle catalog ever printed, and can not, of course, be scattered broadcast, owing to the cost of publication. However, we are happy to announce that, by special arrangement, every reader of this journal who is interested in bicycles may obtain a free copy by simply sending a postal card to the Meade Cycle Co., Chicago, stating that you are a regular reader of this paper. This concern, with its foreign branches, sells bicycles direct to the rider by mail, and has thousands of customers in all parts of the world. A recent inspection of their vast Chicago storage warehouse found them well prepared for the spring and summer rush of orders, with over ten thousand bicycles piled tier on tier on tier, crated and ready for immediate shipment.

A WONDERFUL TRANSFORMATION.

A great change is taking place in the manufacture of millwork for house-builders. One of the leaders in this great movement is the now celebrated firm of Gordon, Van Tine Co., of Davenport, Ia., whose advertisement appears elsewhere. Formerly the home-builder had to be content with what the local planing-mills were pleased to furnish—often, too, at exorbitant rates for poor workmanship. An examination of our advertising pages for the past few months will show the line of work to be expected from this firm to be the very best. Catering to a wide circle of buyers they furnish a home-builder with a wide variety of styles from which to make a choice such as no local mill can hope to equal. This kind of business is bound to grow until we shall be able to purchase ready-made houses and cottages made by automatic machinery. It looks that way, and it is but a question of time before we shall be in position to order a ready-made house as easily as we now order a ready-made overcoat. There are many reasons why such work can be done at a large factory better, quicker, and cheaper than it can be done locally. Write to the Gordon, Van Co., 674 Case St., Davenport, Ia., for convincing evidence.


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At the present time the general tendency is to go to nature for our facts; and students of any phase of natural science are expected to rely on personal observation for the larger part of their knowledge.

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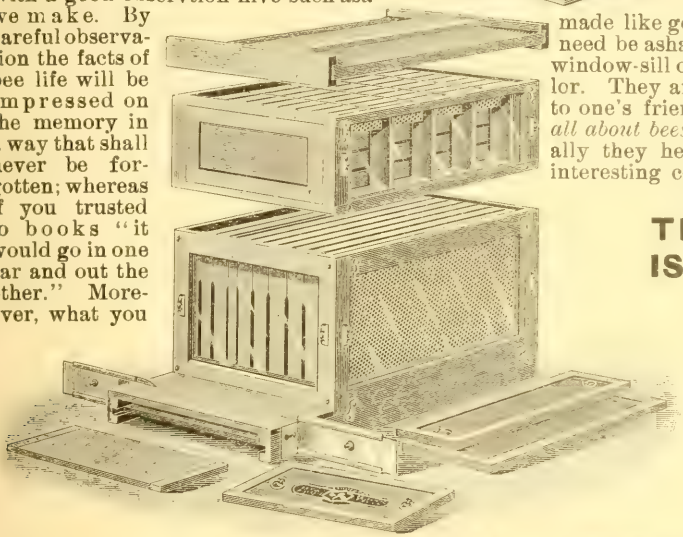

made like good furniture, and nobody need be ashamed to have a hive on the window-sill of the sitting-room or parlor. They are excellent for showing to one's friends who require to learn *all about bees* in one lesson. Incidentally they help the sale of honey by interesting consumers in honey-bees.

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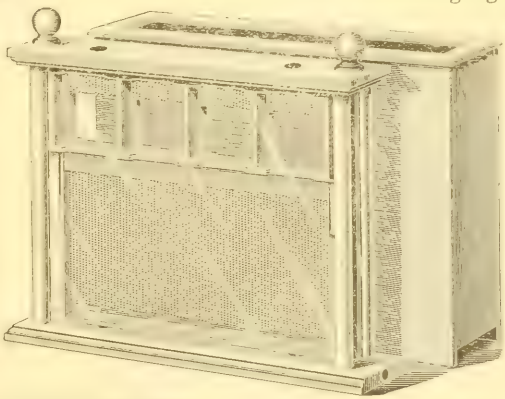

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| " Hive " without super | 5.00 | " | 3.50 |
| " Brood-chamber, complete, with frames—no cover or bottom | 3.75 | " | 2.50 |
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A GREAT "LITTLE" INDUSTRY.

A very handsome and most practical book has just been issued by the Reliable Incubator and Brooder Co., box 49, Quincy, Ill. Even the most experienced poultry-breeder would find this of interest; and of course, to the inexperienced it is more valuable, containing as it does a mass of practical up-to-date information, much of which is not set down in poultry-books.

Before investing in any books or appliances for the poultry business we would suggest sending for this book. It contains 136 pages devoted to the following subjects: How to get fertile eggs; how to get bigger hatches; how to rear heavy fowls; how to get broilers ready for the market in time to get top-notch prices; how to buy a good serviceable incubator, and a number of other practical points, all bearing on the question of dollars and cents. It is beautifully illustrated; and, although it contains so much, it is sent free to all our readers if they will simply say they are subscribers to this journal, or that they saw this statement therein.

---

SUCCESSFUL INCUBATORS.

One of the "old reliable" firms in the manufacture of incubators is the Des Moines Incubator Co., of Des Moines, Ia. They have been a long while in the business—long enough to acquire a vast fund of information on the rearing and feeding of poultry raised by artificial means. In the course of their experience they must have taught thousands of successful poultry-keepers the principles of the art.

They have embodied the most of this information (boiled down, it is true) in their regular catalog, which is free to all who apply for it. Beyond this the company have a book which gives a great deal of valuable information relative to various phases of the poultry industry. The title of this book is, "The Proper Care and Feeding of Chicks, Ducks, Geese, and Turkeys." The price is 10 cts., prepaid.

It would be a mistake to think that this book is worth only ten cents. On the contrary, it is well worth fifty cents to any poultryman desirous of increasing his knowledge of poultry culture. We have alluded before to the great liberality of the incubator manufacturers in the matter of literature. They issue books which cost them thousands of dollars to print and publish. These are not mere advertisements, but are really excellent treatises on the subjects with which they deal, and the information is of the most reliable and accurate kind. Moreover, they are very practical.

The best we can do under the circumstances is to advise those of our readers who are interested in poultry culture to write direct to the Des Moines Incubator Co. and see whether these things are so.

# Bees For Sale.

My bees have wintered perfectly—clean, dry, and free from dysentery—and I have decided to sell a few colonies. The bees are of the Superior stock, the hives nearly new, in good condition, and well painted. The combs are all-worker—mostly built on wired foundation. Everything is strictly first-class.

For a colony in an eight-frame Langstroth hive the price is $6.00; in a ten-frame Langstroth, or in a new Heddon hive (two sections) the pri e is $7.00; and to each purchaser of one or more colonies the Review will be sent free for 1908.

I am now ready to accept and book orders accompanied by the cash; and when I have received as many orders as I care to fill, no more will be accepted. The bees will be shipped by express, about the close of fruit-bloom, when the newly gathered honey will furnish the necessary water, and safe arrival will be guaranteed in every respect.

If you wish to stock your apiary with a strain of bees that has no superior, here is a chance to get a breeding-queen, such as the most of dealers ask from $3.00 to $5 00 for, already introduced, in a full colony, whereby she can be shipped without injury, early in the season, all at a moderate price.

**W. Z. HUTCHINSON, Flint, Mich.**

# BEE KEEPING will be a profitable industry this season.

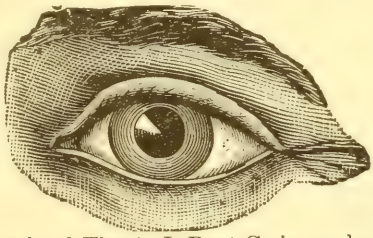
Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

## Get Ready Now for More Honey

**Let us send you our catalog** We are manufacturers and sell only our own make of bee-supplies. Minneapolis is the largest lumber-distributing point; the Mississippi river furnishes us power, and our organization and labor conditions are the best for economical production. **Send us an estimate of your requirements and let us give you prices** We have a large stock of standard bee-supplies on hand.

Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Comb Foundation, Smokers, Extractors, Shipping-cases, etc.

**MINNESOTA BEE SUPPLY COMPANY, 23 Nicollet Island, Minneapolis, Minn.**

# Keep your  on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once. For prompt shipments and good service, we are at your command.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO,, MISSOURI.**

# This Coupon worth 25 Cents!

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

*New Subscribers Only.*

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**AMERICAN - BEE - JOURNAL**

A 32-page illustrated 50-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keeper. . . . Best writers.

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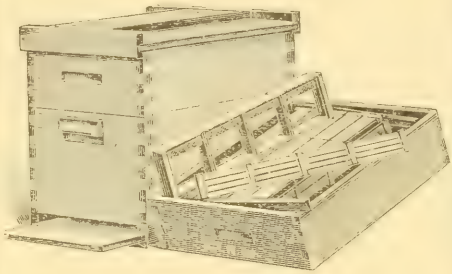
**American Bee Journal, 118 W. Jackson, Chicago, Illinois**

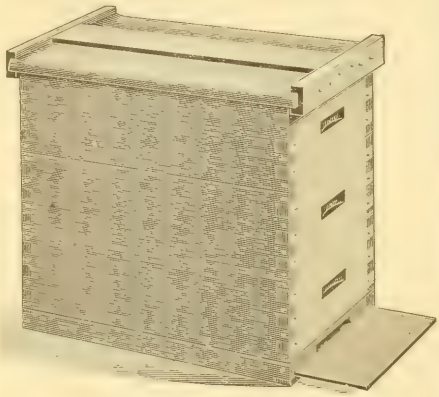
Danzenbaker Hive.

## The Best Comb-honey Hive



1½-story Dov'd Hive for Comb Honey.

## The Best All-around Hive



Divisible Brood Chamber Hive.

## The Best Hive for Experts

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SYRACUSE, NEW YORK

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des pays de langue Francaise.
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## L'Apiculture Nouvelle

Revue mensuele illustree,

est tiree de:

## Gleanings in Bee Culture

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**A. I. ROOT CO.**

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**Emile Bondonneau,**

Agent General pour l'Europe et les Colonies

**de A. I. ROOT CO.,**

**142 Faubourg Saint Denis 142 Paris (10e)**

**France.**

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L'Edition Francaise de l'A B C de l'Apiculture est egalement parue.

TO THE

# BEE - KEEPERS

## OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

## E. GRAINGER & COMPANY,

**Deer Park,**

## Toronto, Ontario, Canada.

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

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**Lewis** BEE-HIVES and SECTIONS. **Root's** SMOKERS and EXTRACTORS. **Dadant's** COMB FOUNDATION.

If you live west of the Missouri river, send for our FREE 48-page illustrated catalog to-day and save money. We are a co-operative association of bee-keepers, and can supply comb and extracted honey at all times.

**The Colorado Honey-Producers' Association**

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# HIGHLAND FARM QUEENS

are the result of years of careful selection and judicious breeding from the best strains of superior long-tongue red-clover Italians in America and Italy—strains that have gained a world-wide reputation for hardiness, gentleness, and superior honey-gathering qualities. Highland Farm queens are bred strictly for business by an expert queen-breeder of 20 years' experience. Highland Farm methods will produce PERFECTLY DEVELOPED, LONG-LIVED, AND PROLIFIC QUEENS. If you want *cheap* queens, the woods are full of them. If you want the best that can be produced by the most scientific methods, Highland Farm queens will not disappoint you Single queen, $1.00; 6, $5.00; 12, $9.00. Safe delivery and satisfaction guaranteed. Send for circular.

**HIGHLAND BEE AND POULTRY FARM,** J. E. HAND, Proprietor, **BIRMINGHAM, ERIE CO., O.**

# "Root Quality"

We are MICHIGAN headquarters for "ROOT QUALITY" goods. If you keep bees and live in MICHIGAN, we want to send you our 1908 catalog. We can supply you with Root's goods to your advantage.

# M. H. HUNT & SON

WAYNE CO. REDFORD, MICH.

*M. H. Hunt & Son.*

*Dear Sirs:—Please find enclosed $1.15 for which please send me GLEANINGS one year (new or renewal) and, as a premium, a good bee-veil with a silk tulle front, postpaid.*

*Name* _____

*Address* _____

No matter where you are in the United States, we want your subscription to GLEANINGS. If you renew soon, take advantage of this and have an extra veil to use this summer.

# What's the Matter With Hilton?

## WHY!

He has got his new goods fresh from The A. I. Root factory, and his 1908 catalog, and wants you to send for one free—40 pages illustrating and describing Root's goods at Root's prices. Send him a list of what goods you want, and let him tell you how much they will cost you.

Cash or supplies for beeswax at all times.

**GEORGE E. HILTON**

**FREMONT, :: :: MICHIGAN**

## THE DANZENBAKER SMOKER

PAT. OCT. 3,'06, JUNE 4,'07

**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case,** and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed,** giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot:** no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt,** expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

## OUR SUPPLY BUSINESS HAS BEEN IN

# New York City

for 15 years. It has increased each year. We want YOUR order this year, and will quote you attractive prices. Our prices are f. o. b cars here. We furnish bees in any quantities. Have seven hundred colonies in our own yards. Catalog free.

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**Apiaries, Glen Cove, L. I. 105 Park Pl., N. Y. City.**

**1884 1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M. Jenkins**

**Wetumpka, : : Alabama**

# Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage.

**RAWLINGS IMPLEMENT COMPANY**

**9 and 11 W. Pratt St. Baltimore, Md.**

# Dittmer's

## COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

# Hammer Free!

With Every Order of Supplies of $5.00 or Over.

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**

**Dubois, .. Pennsylvania**

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**

H. G. ACKLIN, MANAGER

**1024 Mississippi Street, St. Paul, Minn.**

# At St. Louis

On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

**Root's Bee-supplies**

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**

DEPT. B.

1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**

**Dallas, : : . Texas**

**The Time To Place Your Order for QUEENS**

for spring delivery is here. Order now (with partial payment if not convenient to send all) and state when you want delivery. When ready for the queens, send the remainder. By so doing I shall be able to handle your order without the usual delays incident to the rush orders when the season is on.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested, in May and June, | $1.00 | $5.50 | $10.00 |
| Untested, after July 1 . . | .75 | 4.00 | 7.50 |

Selects, 25 cents extra. Tested, May and June, $1.50; after July 1, $1.25. Nuclei and full colonies ready May 1. Catalog for 1908 free. Send for one.

**GEO. W. BARNES, Box 340, NORWALK, O.**

**Westwood Red-clover Queens**

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

**PHARR'S GOLDENS**

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, $1; tested, $1.25. Address New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.

**W. H. Laws** is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled. Testimonials enough to fill this book. If you are going to improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10 00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

**Bee and Poultry Supply House**

We are now in position to offer the bee-keepers of New York and Vermont a full line of Bee and Poultry Supplies, etc., including Incubators, Brooders, Rochester Spray Pumps, Asphalt Roofing, etc.; also a general line of Hardware, Paints, and Oils. Will be pleased to send the different catalogs on request.

**A. H. REEVES & CO.,**
**411 Main St, Watertown, N. Y.**
Bell Phone, 11-I. Citizens' Phone, 381-0.

**Bee-keepers' Supplies Sold**

At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. **W. D. SOPER, Jackson, Mich.**

**Queens Queens**

of the

**FINEST POSSIBLE BREEDING**

BRED BY

**F. J. WARDELL,**
**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen . . . . . | $1.25 |
| Select untested queen . . . . | 1.50 |
| Tested queen . . . . . | 2.50 |
| Select tested queen . . . . . | 3.50 |
| Breeding queens . . . . . | 6.00 |
| Select breeding queens . . . . | 9.00 |
| Extra select " 1 year old, | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

**Queens FOR 1908.**

Finest Goldens bred in America. Send for my latest circular and prices — "and be convinced."

**DANIEL WURTH, . PITKIN, ARK.**

**How are Your Bees?**

**Any Queenless Colonies?**

If so, send for a queen at once. We can furnish by return mail fine tested queens, reared last fall, wintered in four-frame nuclei, three-band Italians, none better, $1.00 each. Satisfaction guaranteed. Send for price list.

**J. W. K. SHAW & CO.,**
**Iberia Parish. Loreauville, La.**

**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **Boston**

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**

# ITALIAN Queens

and bees, and nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Our stock is northern-bred and hardy. We just visited our outyards (all wintered on summer stands), and not a colony is dead to date (March 18). Some hives have lost scarcely a bee, so it appears. BROTHER BEE-KEEPER, how do you like such stock for hardiness? A party up in Maine got 50 nuclei of us several years ago. We just received a letter from him. He is after more of our bees, because last season he got 2200 pounds of honey which sold for 22 cts. per pound. Our stock is well known throughout the United States. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Free circular and testimonials. Price of stock as below.

| Prices of Queens before July. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $1 00 | $5 00 | $ 9 00 |
| Tested queens | 1 50 | 8 00 | 15 00 |
| Select tested queens | 2 00 | 10 00 | 18 00 |
| Breeders | 4 00 | | |
| Golden five-band breeders | 6 00 | | |
| Two-comb nuclei, no queen | 2 50 | 14 00 | 25 00 |
| Three-comb nuclei, no queen | 3 50 | 20 00 | 35 00 |
| Full colonies on eight frames | 6 00 | 30 00 | |

ADD the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

## QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio

# NEW ENGLAND BEE-KEEPERS

WE ARE HEADQUARTERS FOR

## Bee-supplies

in this section, as we carry the largest and most complete line of Hives, Supers, Sections, Foundation, Bee-smokers, and other Apiarian Supplies, of any one in the New England States. We have a good stock of goods on hand now, and solicit your orders. Send postal for price list of

## Bees and Queens.

W. W. CARY & SON
LYONSVILLE, MASS.

GOLDEN-ALL-OVER and RED-CLOVER

## ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers. Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1 00 | $5.00 | $9 00 |
| Select untested | 1 25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.
By return mail after May 25, or money refunded.

**Wm A. Shuff,** 4426 Osage Ave., Philadelphia, Pa.

## Taylor's Strain of Italians is the Best

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3 00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

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## Italian Bees and Queens

from Root's red-clover stock of golden Italian queens. Untested, 75 cts. each; six, $3.75. Select untested, $1.00 each; six $5.00. Tested, $1.50 each; six, $8.00. Select tested, $2.00. Two frame nuclei, with untested queen, $2.25. Orders filled in rotation. Send all orders to E. A. SIMMONS, GREENVILLE, ALA.

## NOT CHEAP QUEENS, BUT QUEENS CHEAP

500 Best Strain Italian Queens Ready to Mail March 1st.
Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
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Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
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Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK, ARK.**

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# The Story of Joe, of Idaho.

*By the Bee Crank.*

When Joe and Ida settled down
In Idaho forlorn,
Joe won renown—he beat the town
At pool from night to morn,
And, sad to say, he slept by day
While Idahoed the corn.

One day she read a Pouder ad.,
And then she found her tongue;
Said she to Joe, "Now you can go;
No longer will your Idaho; [ey,"
I need the money, it's me for hon-
And Joe—well, Joe was stung.

The fact of the matter is, Ida was a better business man than Joe. She sent here for an equipment of Danzenbaker hives, foundation, sections, a veil, and a lot of other material of Root quality. With this cue from Ida, Joe has improved his habits and is doing much better.

My catalog tells all about these goods, and it is free. If more convenient, make up your order from Root's catalog, as prices are exactly the same, and I ship these goods from Indianapolis at factory prices. I shall consider it a favor if you will send your beeswax here, as I pay highest market price, cash or in exchange for supplies.

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# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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## STRAY STRAWS

by Dr. C. C. MILLER

E. D. TOWNSEND finds that greatly contracted entrances at first spring flight hinder bees drifting and massing at a few colonies, p. 346. Same here.

TO LENGTHEN the blooming period of any honey-plant, get plants from further north or south. For example, get lindens from the north for earlier bloom, and from the south for later bloom.—*Deutsche Bzcht.*, 32.

"BOTTOM-BARS with only ¼-inch space between them would retard communication between stories very much," p. 343. And yet with such spaces my queens seem to pass readily up and down when keeping brood in two stories.

THE ADVANTAGE of wide bottom-bars is asked for, page 346. They are a distinct aid in keeping bees from building combs between two stories. But there has always been some question in my mind whether this advantage were not offset by disadvantages. Most assuredly I would not have them if I wanted to look up between bottom-bars.

"QUEENS never react either peacefully or hostilely toward strangers or toward bees belonging to the hive," page 232. I am sure there are exceptions to this rule. I once saw a queen grasp a worker, and almost immediately it was a dead worker. Others have reported that one difficulty in introducing queens was because of their hostile attitude toward the workers.

I DON'T KNOW how bees know so much, but I think it is the general understanding that they are far-sighted enough to be more lavish in starting brood in the spring with a big lot of honey in sight than with only enough to run from day to day. So give me a hive heavy with honey in the fall so not the slightest thought need be given as to feeding again before the next harvest.

A $6.00 BREEDING-QUEEN was bought by A from B, and died several months after safe arrival, and introduction. A wants B to replace; B refuses, but is willing as a compromise to send another good queen. A seems to think B ought to do better, p. 339. I suspect a whole lot of queen-breeders will throw up their hands in amazement at that sort of ruling. I'd like to know why B is held responsible to do any thing in the case, and how old that queen must be before his responsibility ends.

JAMES C. WHITE is wisely advised, p. 369, to tier up to prevent swarming. Let me add an item: Shove the second story either back or forward so as to make a ¼-inch crack for ventilation. Do this with each added story. This will double the security against swarming. [You are probably right, that this extra ventilation will aid materially in the prevention of swarming. But is not so much ventilation an indirect loss in that it requires a large portion of fielders to stay at home to keep up the necessary body heat—that is, comb-building temperature? Understand, we do not claim that you are wrong on this point; but, to use a familiar phrase of yours, "I don't know." Who does?—ED.]

G. M. DOOLITTLE, p. 341, will not admit that a difference in comb-building makes a difference in the number of bees going to the field. Possibly he is right, but there is a fine chance for argument on the other side. Under average conditions a bee will not go afield under sixteen days; but when there are no older bees for the work, a bee five days old will become a fielder. Now take two strong colonies alike in all respects except that one of them has all its surplus combs to build, and the other none. Don't you believe that the exigencies of the case, seeing that a bee *can* go afield when not half of sixteen days old, will send more bees afield from the one colony than the other?

JOHN HENDRICKS quotes from a religious work: "The propagation of their species, by butterfly, bee, and moth, without the custom-

ary presence of male companion, is a discovery corroborative of the science of mind; because these discoveries show that the origin and continuance of certain insects rest on a foundation apart from sexual conditions." And he asks whether this is true of any bee and of other insects. No, it is not true of any bee or other insect. Yes, it is true of our honey-bee and of other insects. It is most emphatically not true in the sense in which it will be understood by the ordinary reader, who will understand it to mean that one could continue his bees from year to year if he never allowed a drone to appear. It is true in the sense that *some* bees may be brought into life without the intervention of drones; but bees so produced will all be drones. No queen or worker can proceed from an egg unless that egg is fertilized.

Louis Scholl says, p 343, "contrary to the arguments of some of our authorities, I believe that hives well painted will last very much longer, keep in shape better, and look nicer than unpainted ones." Who are the authorities, Louis? I didn't suppose any one believed differently. [The authorities referred to must be yourself and Mr. Doolittle. While it is very true that you are in harmony with the proposition stated by Mr Scholl, yet you have, if we remember correctly, made the statement that it did not pay you to paint your hives. While this statement, strictly speaking, is not in conflict with the one made above, yet it impliedly is. If we remember correctly your real contention is this: That it does not pay you to paint your hives; for by the time that they will be of no further service for lack of paint you probably will want something of a different pattern, involving a different system. In your forty years of bee-keeping you have changed your hives once already. In the period mentioned you would have gained nothing in dollars and cents to paint the hives This is as we understand your position. Are we right?—Ed.]

"Requeening is something that I have believed could be most profitably left to the bees; but I think those on the other side of the question have the best of the argument when it comes to the improvement of stock by selection. If we allow each colony simply to requeen itself when the queen becomes old, there is not much likelihood of the young queen being any better than her mother." —*Review*, 84. It is a mistake, Bro. Hutchinson, to assume that those who advocate letting queens do their own superseding allow *each* colony simply to requeen itself. I think no one has more earnestly advocated improvement of stock than I, at the same time allowing queens to do their own superseding; but not *each* queen. Any queen not coming up to the mark is replaced by a better one. Please tell me why that doesn't give just the same chance for improvements as the plan given by S D Chapman. *Review*, 73. Mr. Chapman removes old queens a week before the close of the raspberry flow, letting each colony requeen itself, except the inferior ones, to which he gives choice cells. I do much the same thing, only I don't cut them off at a year old. Let me say in passing that Mr. Chapman's plan for annual requeening is good, excellent, and I'm not so cock-sure that it may not be better, at least for many, than allowing queens to live longer.

I don't want to say a word belittling the excellence of O. L. Hershiser's plan of management in the spring, p. 348, but I do think he greatly underestimates the capacity of certain colonies in one of his assumptions. He assumes that a colony with from three to four Langstroth combs fairly well filled with brood five or six weeks before the commencement of the main honey-flow (white clover), with a good honey season and a good location, but no fall flow, "will gather enough honey on the average for winter stores, but no surplus." If such a colony did no better for me, with no attention except putting on and taking off sections, I would count that there was a queen whose head needed to come off, and would feel greatly dissatisfied with less than 50 lbs. surplus, and would be rather expecting 100. On the other hand, the editor greatly overestimates, p. 347, when he talks about "getting all the queens to laying to their full capacity from the time manipulations are begun in early spring." With one-fourth of the colonies "weak, with from two to three L. frames containing brood," will the queen in those weak colonies lay more than one-fourth of their full capacity? [We will let Mr. Hershiser answer for himself. As to our statement, it would appear to us that, under the conditions of the very weak and the very strong colonies, each set of queens could with proper coöperation on the part of the apiarist, lay to the extent of their full capacity; but the queen of the weak colony will have a smaller cluster and fewer frames at her diposal. But as these are easily taken out after being filled with young brood we do not see why she would not be able to lay in a smaller room as many eggs as a queen having a strong force of bees. Strictly speaking, no queen ever lays to her full capacity. If she is a good one she will often get ahead of her bees. It is then that the apiarist will intervene in her behalf.—Ed.]

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Majestic Lake Tahoe, amid the snow-capped Sierras, is soon to be taken in charge by Uncle Sam's engineers who are in the Reclamation Service. The level of the lake is to be raised by building a dam across its outlet, which is the head of the Truckee River. The idea is to control the water so as to irrigate a large extent of land which is now a complete desert. Nowhere has bee-keeping been more successful than in Nevada where irrigation is practiced. Neither in quality nor in quantity has the honey been excelled. It is, therefore, a pleasure to see that the national government proposes to increase greatly the area of available bee territory. W. K. M.

WE have found it necessary to continue our special series of spring articles in this number. At the same time, we enlarge it enough to take in another installment of the series by Dr. von Buttel-Reepen. This should be read with unusual care, as it is both interesting and valuable.

THOSE whose subscriptions expire or have expired will please read the editorial on page 277, Mar. 1st. Except under certain conditions we shall not be able to continue the journal longer than the time paid for. If you can not send a remittance at once, but desire the journal to be continued, please let us know, stating when you will be able to pay up.

### A FAVORABLE SPRING THUS FAR.

SPRING thus far is favorable, in that the month of March has not been warm, but chilly most of the time. If we do not get warm weather before the middle of April in our locality, we expect nice weather thereafter, and a good year for bees. If it is a warm March, followed by a cold April, it works havoc with bees that are well started in brood-rearing.

### MORE GLUCOSE.

LATE press despatches say that the immense glucose-factory at Marshalltown, Ia., has been purchased by the Western Grocery Co. The latter is credited as being worth $5,000,000, and operates branch houses in several western cities. The plant at Marshalltown is on a gigantic scale, and ought to turn out an enormous amount of glucose in the course of a year. The Iowa beekeepers may certainly expect to see lots of "near honey" sold in their vicinity this year.

W. K. M.

### SPRING FEEDING AND THE COLOR OF PAPER WINTER CASES.

THE accumulating testimony seems to show that spring feeding, to stimulate, is a practice that should be discouraged. The best time to feed is in the fall, at which time the colonies should be fed liberally and in big feeds.

There seems to be a difference of opinion as to whether winter cases should be covered with *dark* or *light* colored papers. In view of the fact that black absorbs heat when the sun shines brightly, warming up the colony, we have used a light-colored paper—one that would be less subject to the effect of the rays of the sun. The time was when poultrymen advised the use of glass in poultry-houses; but the effect of this was to make the building unnecessarily warm on bright days. The extremes of temperature from a sunny to a dark day did more harm than good. The same principle will apply in the case of a dark or light paper for winter cases.

Some years ago we conducted some elaborate experiments, painting some of our winter cases black and some red. But we found the dark colors would drive the bees out on a bright day, yet too cool for them to stay out without getting chilled. We have for years advised painting chaff hives white.

### ARE WE SACRIFICING DESIRABLE TRAITS FOR AN UNIMPORTANT CHARACTERISTIC IN OUR BEE-BREEDING?

WE desire to call attention to the excellent point made by C. F. Bender, in this issue, where he says the constant temptation of a queen-breeder is to breed for beauty alone. This quality, even if desirable, should be placed, he thinks, at the bottom of the list of good breeding points; "for," he says, "the more qualities we breed for, the *less we get of each particular quality.*" This is only another way of saying that stock with extraordinarily bright-yellow color must have sacrificed correspondingly in the development of one or more other good points. A race horse, for example, is good for nothing but speed. Other desirable qualities have been sacrificed for the one thing—*speed.*

There is this to be said, that *color* in bees is the only quality that can be made to stand out prominently, unless it be temper; and it is the only one that shows at once that the queen-breeder has accomplished some particular end.

### SUGAR AND HONEY AS PRODUCERS OF MUSCULAR ENERGY.

THERE is a well-nigh universal opinion that such foods as sugar and honey are almost valueless as producers of muscular energy. But read what the highest medical authority in the world, the *London Lancet*, has to say on the subject:

> Sugar is one of the most powerful foods which we possess, as it is the cheapest, or, at any rate, one of the cheapest. In muscular labor no food appears to be able to give the same powers of endurance as sugar; and comparative practical experiments have shown without the least doubt that the hard physical worker, the athlete, or the soldier on the march, is much more equal to the physical strain placed upon him when he has had included in his diet a liberal allowance of sugar than when sugar is denied him.
>
> Trophies, prizes, and cups have undoubtedly been won on a diet in which sugar was intentionally a notable constituent. It has even been said that sugar may decide a battle, and that jam after all is something more than a mere sweetmeat to the soldier. The fact that sugar is a powerful "muscle food" probably accounts for the disfavor into which it falls, for a comparatively small quantity amounts to an excess, and excess is always inimical to the easy working of the digestive processes.
>
> Sugar satiates: it is a concentrated food. Where sugar does harm, therefore, it is invariably due to excess. Taken in small quantities, and distributed over the daily food intakes, sugar contributes most usefully in health to the supply of energy required by the body. And it is a curious fact that the man who practically abstains from sugar, or reduces his diet to one almost free from carbohydrates in favor of protein foods such as meat, often shows feeble muscular energy and an indifferent capacity for physical endurance.

Honey comes under the same category as sugar, with this difference: It is almost ready to pass into the blood without further change; and it is far more palatable than sugar, since it possesses an almost priceless aroma which stimulates the appetite and promotes digestion. If a person has the means he should, as far as possible, use honey where others use sugar.

Some say honey is not a necessity; but such people are using sugar, probably to excess. Sweets are an absolute necessity to the civilized man. No race can long exist without sugar in some form, and civilized men are the greatest consumers of it.

The Secretary of Agriculture over in Ontario recently stated that one pound of honey is equal in dietetic value to five pounds of pork; and such a statement is well within the mark. Modern science abundantly confirms it. W. K. M.

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### LIQUEFYING CANDIED HONEY AT A COMPARATIVELY LOW TEMPERATURE IN A LARGE INCUBATOR.

As reported on p. 278 of our March 1st issue, we have been conducting some experiments, and expected to give the conclusion of them in our last issue; but, unfortunately, the incubator "went bad," the temperature going up so high as to melt the wax of the comb, and consequently we had to start all over again. We have a very large incubator, and in it we placed sections of comb honey candied almost solid. The honey of some of these within ten days was completely liquefied without any apparent damage to the comb; others, at the end of two weeks, were not brought entirely to a liquid state; but the top of the comb shows in some cases some slight stretching, while the bottom shows a corresponding compression or sagging. The temperature has not gone higher than 105° nor lower than 103. The incubator in question is one of the standard makes, large enough to use two lamps at a time.

We are not entirely satisfied with the results thus far, for we believe that, with a slightly lower temperature, say 103°, extended over a longer period, there would be no stretching of the combs; and the honey, practically all clover, could be entirely reliquefied. We have demonstrated this much—that comb honey *partly* candied, that is, the honey can, at a temperature of 105°, be liquefied in four or five days; in other words, we can arrest the process if we see it starting, and bring the honey back to its normal state, and that, too, without injuring the combs.

Candied comb honey so treated is delicious. The honey is thick and waxy, and as clear as it was the day it was gathered by the bees. The flavor is in no way impaired, and the comb surface seems to be as perfect as when the bees left it.

Of course, an incubator in a commercial way would be impracticable; but we are of the opinion that a honey-room large enough to hold several thousand pounds could be equipped with steam or hot-water radiators so that the temperature could be maintained at about 104° for a period of ten days or two weeks. If the progress is watched carefully, and the temperature checked when it begins to get too high, hundreds of dollars may be saved in lost comb honey that would not have brought otherwise more than the rendered wax and an inferior quality of honey secured through the process of rendering.

We will conduct our experiments further; and if they prove satisfactory we think it will be possible for a dealer or large buyer to make good money by buying up candied comb honey and bringing it back to its normal state in a specially heated room. There is money in this proposition — lots of it; and we suggest that others having incubators—and we must have thousands of subscribers who are supplied with them—try this experiment in a small way and report results.

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### SHOULD THE SALE OF SPLIT SECTIONS BE DISCOURAGED? ARE THEY LOSING THEIR POPULARITY IN ENGLAND AND IRELAND?

A SHORT time ago there appeared in these columns a discussion of the relative merits of split sections (that is, sections split through the top and both sides) and the ordinary sections in which the foundation is fastened in any of the standard ways. We took the ground that the first mentioned, owing to the foundation protruding through the sides and tops, would, when they fell into the hands of consumers, give rise to the old comb-honey canard which we have been fighting for years and years For that reason we questioned very much the wisdom of pushing their sale. Mr. Hand, on the other hand, took issue with us, saying that he had sold thousands of such sections, but never once had it been said that his comb honey was manufactured.

Along about this time, Dr. Miller, in one of his Straws, stated that the popularity of split sections in England was waning. We remarked that, from the evidence in our office, it was getting to be increasingly apparent that the demand for them in England was decreasing. Referring to this the editor of the *Irish Bee Journal*, in his issue for March, has this to say:

> It is quite new to us to hear that British consumers object to the split section, and we are bound to say that the assertion is altogether contrary to our experience in marketing comb honey in England. Nevertheless, a statement of the kind, coming from two such eminent men, seemed to us to demand investigation; for, if it were justified by the facts, honey-producers who supply the English market would need to revise their method of preparing sections. Accordingly we placed ourselves in communication with a large number of the leading British and Irish producers, all of whom assure us that their experience agrees with our own. They have never heard of any objection to split sections on the part of buyers in England, nor of any depreciation of the value of comb honey marketed in such sections.

We believe it to be only fair to Mr. Hand and the advocates of split sections that the

statements be given their full weight. But the comb-honey canard never had the continuous circulation over in England that it has had here. In this country it has been the one thing that has kept down the price of comb honey, because the public were suspicious of *all* honey in the comb and would not buy. Now that this hoary canard has all but died a natural death it would seem as if we might be taking long chances to put out a style of section that would give even the faintest suggestion of the so-called "manufactured comb honey." It is our honest conviction that it would be very wise to go slow, especially as it now appears that we can put in full sheets of foundation cut to fit in regular sections.

SPLIT SECTIONS OLD.

We find by our orders in the manufacturing department that the sale of split sections in England is beginning to ease up. Whether other manufacturers are having an increased trade we are not able to say. We also find that the sale of split sections, as compared with all other kinds, is only about 25 per cent of the total number sold in Great Britain. The great majority, apparently, in the mother country at least, favor solid sections and using one or more of the different methods of fastening foundation to the wood. When it is remembered that the split section was first illustrated and described by Mr. Samuel Simmins, in his book "A Modern Bee Farm," in 1887, and then further described in subsequent editions of his book, 1893 and 1904, it would appear by this time that they should have had a larger proportionate sale.

*Later.*—Just as we go to press, it is, perhaps, proper for us to say that we have been looking over several supers of split sections, in which foundation was put in on the J. E. Hand method some months ago. We were surprised to note that the foundation had buckled in many of the sections. Then we looked over some regular sections, in which foundation had been fastened on all four sides. These were buckled also. In both cases extra-thin foundation was used. Possibly the buckling would not have occurred if we had used the grade called "thin super."

If the Yoder plan of fastening to the top, and part way down the sides, with a gap of ⅛ inch at the bottom, will prevent this buckling, the problem is solved.

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BEE-KEEPERS FURNISHING ALSIKE-CLOVER SEED TO LOCAL FARMERS.

A YEAR ago we furnished alsike-clover seed free of charge to all farmers within a half or three-fourths of a mile of any of our bee-yards. We did this to get it more generally introduced in our vicinity; but we did not then anticipate that so many of them would jump at the chance as they did. Having made a general offer we stood by it, even though it took over $150 worth of seed to supply the call for it. Well, the result is that alsike-clover seed has been pretty generally scattered all over the territory within a mile of our bee-yards.

This year we expect there will be just about as much alsike distributed, in spite of the fact that we do not furnish it free, but charge half price.

During the last few years farmers have been learning the value of alsike as a forage-plant, and many of them are sowing it with their timothy to increase the food value of the hay. In a trip about a year ago through the heart of Michigan we noticed that the farmers there were sowing alsike with timothy; for every field of timothy that we could see had alsike growing with it.

In favor of alsike it may be said that it takes *only half the amount of seed to cover a given area* that red clover does; it has a *higher feeding value*, and, what is more, it will *stay in the ground for three or four years*, while red clover will run out in a single year.

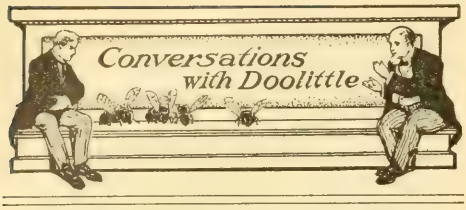
It has been observed by bee-keepers that white clover, owing to intensive farming, has been gradually running out; but to offset this, alsike is taking its place; and when farmers come to know its real value, and that it costs only half as much to sow an acre of it, it will be grown more largely than at present.

Every bee-keeper in this country, where alsike will grow, should make arrangement to furnish seed, either at half price or at cost. He should take pains to go among his farmer friends and explain its advantages, and urge them to grow it. If he continues this policy a few years he will have a locality that will be one of the best for honey. This is not mere theory, for we have plenty of facts to prove it.

The efforts that have been thus far made to increase the length of the tongues of our bees have not accomplished a great deal as yet. One reason for this is the difficulty of controlling the male parentage, with a view of accentuating increase of tongue-length. But if we can substitute alsike for red clover we can solve the whole proposition.

Alsike-clover hay mixed is beginning to have a special market value. For race horses it is considered the best hay obtainable. If it is good for this class of animals it ought to be good for others. Dairymen who have tested it have learned that it increases materially the quality and quantity of milk.

Bee-keepers everywhere should now get busy to see that a supply of seed is obtained, and furnish it at cost or half price. We furnish it free of cost in case it is to be sown where a field abuts our apiaries, or at least comes within a hundred yards or so of them. But where seed is given away it should be *plainly stipulated* that it be *sown in the regular way*, on cultivated ground, and not thrown broadcast on the top of the ground of regular meadow land. While much of the seed will spring up, much of it will be lost. Where one pays half price for his seed we may rest assured he will not waste any in that way.




BROOD TOUCHING THE FRAME-BARS.

"I want to talk a little about brood-chambers this morning, Mr. Doolittle. Up to last year I always used a brood-chamber holding frames 12 inches deep, and I seemed to have trouble in getting the bees to work in the sections."

"What did you think was the trouble, Mr. Jones?"

"The bees seemed to store so much honey at the top of the brood-combs, above the brood, that it seemed to make the distance too great between the brood-nest proper and the sections above, and on account of this they did not enter the sections readily."

"And you think that was the trouble?"

"Think! I almost know it was. A year ago last winter I made all my new hives so that the frames were only ten inches deep, inside measure; and when colonies had been in them a month or so it was no uncommon thing to have these combs with the brood touching the top-bars to the frames all along the edges of the comb."

"Were the results in section honey any better?"

"Nearly double the amount of section honey was secured from such hives. The old ones did about as well as ever, but hives where the brood came up all along the tops to the frames just piled the honey in the sections."

"Then I suppose you would call this last hive of yours a good one."

"Yes, I do; and I came over to ask you if you think I would be making a mistake in making my old hives over like these."

"I do not think you would, for having the brood extend to the top-bars of the frames in the hive is one of the great secrets in *comb-honey* production; and I claim that the main reason for your new hive being a good one is because you can thus secure the brood in the frames. Few seem to realize that, unless the hive is so filled with brood at the commencement of the honey harvest that it comes out to the frame-bars in the most of the combs, there is no assurance of a *good* crop of honey, no matter how profusely the flowers bloom, nor how abundant the secretion of nectar in those flowers."

"But do you think that the brood touching the top-bars to the frames has all to do with it?"

"No, not altogether. I always thought that this brood coming up to the top-bars caused the bees to enter the sections as soon as any nectar was coming in from the fields, on the principle that it is nature's way for the bees to store their honey above the brood. But this does not entirely control their going into the sections. There is something else which has a great bearing on this part of the matter."

"What is that?"

"Unoccupied comb. Plenty of unoccupied comb in the brood-chamber, at the commencement of the honey harvest, means that there is not apt to be plenty of honey in the sections. Bees will always store honey in any comb which is completed (and not occupied in some other way) before they will go to building comb, or even drawing out foundation in the sections; and as long as there is such unoccupied comb in the brood-chamber they will commence to store honey there, no matter how much we may wish it otherwise; and having once started storing in the brood-chamber they are always more or less reluctant about going into the sections."

"I supposed the trouble was that the bees had to pass over the honey in going into the sections."

"That had some effect, without doubt; but that was not the whole trouble. To give the best results the combs remaining in the brood-chamber at the commencement of the honey-harvest should be literally filled with brood, which term I use broadly; for where brood is in abundance, there must also be some pollen and honey to supply the wants of that brood; and where no more is on hand than is needed for the wants of the brood from day to day, such honey and pollen are virtually the brood. But, above this, there should be room for nothing at the commencement of the harvest. Empty cells of comb, even to the amount of storing five pounds of honey, will tell to the disadvantage of the section honey. With the hive or brood-chamber literally full of brood, as explained above, at the commencement of the harvest, the bees *must* put their first loads of nectar in the 'baits,' which should be in the first super of sections put on such hives; and with the storing of this first nectar in these baits, work is at once begun in the sections surrounding these, the comb foundation being drawn out where the sections are filled, or work on the starters progressing finely where only starters are used; and having once thus begun in the supers, the work is continued to the end of the harvest."

"Well, there is more to that part than I had imagined, even in my enthusiasm."

"Before we leave this matter let us consider unoccupied combs in the brood-chamber, and see what happens. With the unoccupied comb the bees will commence storing their first loads of nectar in the unoccupied cells; and when these are nearly full the cells will be drawn out or lengthened all through the hive, which unfits them for the rearing of brood; and as young bees emerge next to these drawn-out nectar-filled cells the brood-cells will be drawn out, thus crowding out the queen more and more, till at the end of the season we have little honey in the sections with few bees in the hive for winter. Now this makes all the difference imaginable be-

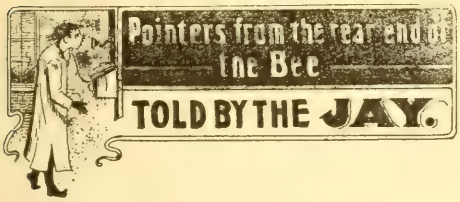
tween success and a mere pittance from our bees when it comes to section honey. With extracted honey the supers are generally filled with comb, so the first nectar goes into the supers, and the queen can spread herself all she wishes, often doing this to the complete exclusion of honey from the brood-chamber, without any effort on the bee-keeper's part."

"But what effort can the bee-keeper make when working for comb honey?"

"Just what you have been doing with your new hives. Cut down the frames, which reduces the size of the brood-chamber, till the queen and bees, of their own accord, have the hives literally filled with brood when the harvest commences. Or do what I prefer — use a ten-frame Langstroth hive, and in their connection use one, two, three, or four division-boards, just in accord with the prolificness of the queen. At the commencement of the honey harvest I take away all the combs in the hives which are not occupied with brood, and insert in their places a division-board which is simply a piece of an inch board of the size of a frame, with a top-bar to a frame nailed to it, and thus bring the brood in the hive to where I wish it, whether the queen is very prolific or otherwise."

"Do you treat all of your colonies that way?"

"No. Half or more of the queens are so prolific that there is no need of any division-board; many more require only one board, while a very few require more than two. With the two this practically makes an eight-frame L. hive, which hundreds of our best bee-keepers recommend. But I would far rather have a colony go into the honey harvest with only five combs *filled* with brood and five division-boards than to have the same colony with five frames with brood and five frames with nearly all empty combs."




THE SWARMING PROBLEM.

I have been requested to make clearer my method of doubling up swarms as described in the Oct. 15th issue of GLEANINGS. In reading over this article I must confess that, in endeavoring to be brief, I expected the reader to take too much for granted. The point in question was concerning the clustering of the swarm, "That it should be allowed to cluster near the old stand," etc. While the swarm is in the air I catch the clipped queen, which is usually found near the hive energetically climbing all the weeds and grass in the neighborhood. I then put her into a Miller queen-cage. If there is a branch of a tree near the old stand I tie the cage to that. Then I remove the old colony; and the swarm, as it returns, will cluster around the cage. The bees belonging to the old hive will, as they return from the fields, cluster with the swarm as if they had originally intended to be a part of the game.

I have tried several modifications of this plan. If no tree stands near by I place an empty hive on the old stand and place the cage containing the queen in this hive. The bees will soon return, and at once go into the hive. Then at night I dump the bees in front of a hive that is not doing very good work in the supers. If I have a young queen in a nucleus (I usually have such during the swarming season) I requeen the old colony at once. If there is no young queen on hand I give the old queen back to the old colony till a young one can be raised.

If my future experience with this method works as well as it has during the past three years I shall look for nothing better in the way of handling new swarms. It is scarcely any work. You have no increase. The old colony will usually gather plenty of honey to winter on.

The united swarms will make extra fancy honey on account of there being so many in the hive; and where a strong swarm is put with one not doing good super work, *more honey will be obtained than if there had been no swarm*, because the entire new swarm is put to work in the supers.

Another plan I have tried in a limited way gave the best of satisfaction in handling swarms when it was necessary for me to be away from the yard. In other words the conditions were the same as they would be in an outyard. I look through the bees, searching for cells by raising up the hive and looking at the bottom of the frames. When I found one that was preparing to swarm I simply moved it to a new location and gave the super it held to the hive on the stand from which the old one was removed. I keep two hives on the same stand. The returning bees will go into the other hive and work with the strange bees as well as they did before. The result has been in every case that the hive that wanted to swarm gave up the idea at once and immediately tore down all cells. This has not given quite as good results in comb honey as the first method named, as you can not give this force of bees to any weak colony you might wish to. Then, again, I find that, as a rule, more bees will go out with a swarm than will naturally return to their old location when their hive is moved.

The plan I am going to try next season will be to make a small tripod out of light stuff and lay a light pole across it. The cage containing the queen will be hung upon the end of this pole, and the bees allowed to cluster there. Then in the evening I will take the bees on the end of the pole and dump them as previously described.

## SPRING DWINDLING.

### Three Principal Causes, and the Remedies; Tin Markers to Show the Age and Value of the Queens.

BY E. W. ALEXANDER.

During the first month after taking bees from their winter quarters there are usually more colonies lost than during the other eleven months of the year; and it seems really harder to bear the loss then than at any other time, for we know that, if we can keep them alive and in their hives during those chilly, cloudy, changeable days of early spring, we can soon have them good colonies for the coming summer. While there are several conditions that help to bring about these disastrous results, there are three that stand out as the principal causes of spring dwindling.

The first cause is an old queen—one that stopped laying early the previous fall. Colonies with such queens become weak in bees during the latter part of winter, and, not being able to keep their hives warm enough, they are soon affected with dysentery, and, after they are set out, they waste away until none are left. This cause of spring dwindling can be easily prevented by introducing young queens early in the summer, so they will have a fine lot of brood at the close of the season.

Another serious cause is poor honey for winter stores. This is a more frequent cause, and far more disastrous than the loss from old queens, for the losses from poor winter stores affect all colonies alike, and the poor bees die by the thousands while in the cellar, and still faster when first set out, until nearly every colony is dead.

One winter I lost 417 colonies from this cause out of 432; but we can now prevent all loss from this source by giving our bees sugar syrup to winter on in the place of unsuitable honey.

Another very serious cause of spring dwindling is the desire of the bees to fly on those changeable days I spoke of above. This loss can also be almost wholly prevented by placing the hives, when taken from the cellar, so the entrance will *face the north;* then in addition to this have a shade-board so it can be easily placed where it will shade the entrance still more, and somewhat darken it. To prevent still further their desire to fly on cloudy days, give the colonies about a pint of warm sweetened water every night about dark. This will encourage them to breed fast, and at the same time prevent thousands from becoming lost on chilly days in search of water. If you prefer to have the hives face some other direction it is but a short job to turn them around to any point after the changeable weather of early spring has gone by. Please try this method, and you will find that the bees will have but little desire to fly except when the temperature is warm enough to fly safely in the shade; consequently the old bees are saved until the colony has a fine lot of maturing brood.

As experience enables us to cast aside the fatal results of spring dwindling, it seems as if we had taken another step forward along the line of progress. The cares and anxiety of another busy season will soon be here, and our plans should be well matured for the coming summer. Have you secured your necessary help and your supplies? Do you know how much increase you will make and how you will make it? Have you decided whether you will rear your queens or buy them? If you intend to purchase, have you sent in your order? If not, attend to this at once. I find that some of our best queen-breeders have now (Feb. 25) all the queens engaged that they can rear the coming season. These are important matters to look after, and should be attended to very soon.

#### HOW TO KEEP THE RECORD OF THE QUEENS.

I am frequently asked through the mails what system we have adopted to keep a correct record of the age and quality of our queens. I think I have answered this question before in some of my former articles; but it is so easy and practicable it will bear repeating for the benefit of those who have not seen it. We cut out a few hundred pieces of tin, about 1¼ inches in diameter. Some we made round, some half round, and some square; then with a small wire nail or a brad-awl we make a hole in the center of each piece. Every summer we use a different-shaped piece of tin to mark all the hives that have queens of that summer's rearing. Two years ago we used the square pieces; last year we used the round pieces; this summer we will use the half-round. We tack one on the front right-hand corner of each hive, with a carpet-tack. They are easy to remove; and whatever hive a queen occupies during her life, that tin tag goes with her. In marking our common ordinary queens the tag is placed on the corner of the hive about two inches above the bottom-board. If the queen is better than ordinary, the tag is raised up the corner according to her real worth. If she is a little off in any way we put the tin toward the other side of the hive, according to how poor she is. In this way it takes only a moment to mark the hive so that, at a glance, we can tell at any time we see the front of a hive the age and quality of the queen it contains.

We have practiced this method for about forty years, and during this time we have tried some others, but have never been able to find another so easy and practicable as this.

If you will try it I am sure you will never again neglect this very important part of the business.

You may talk and write about the importance of a good location, also of the knowledge and experience of the man in charge, each being very essential; but *to have a good queen of a good honey-gathering strain in every colony is of more importance than any other one thing connected with the business;* for if the colonies have poor old queens that can not be induced to keep their hives half full of brood we might as well give up at once, for we shall get little or no surplus, and our hopes will be blasted. We should continually try to profit by our past experience, not only in caring for our bees, but in disposing of our honey. Don't be satisfied with the results of the past, but strive to make the coming season the most profitable one you have ever had.

Delanson, N. Y.

[We notice that our correspondent recommends facing the hives in the spring toward the north, with a storm-door or lean-to board placed in front of the entrance to shut out prevailing drafts. There may be something in this, because we have observed in the last few days that, wherever the sun strikes the entrances, storm-door or no storm-door, the bees will fly out of the hives with such entrances before they will come out of hives having the entrances face toward the north. But over against this we have often observed in the case of our outdoor-wintered bees that colonies with entrances toward the north very often die, and we have attributed this to the north exposure. This is a question that will bear some discussion, and we should be glad to hear from our readers.—ED.]

## STRONG VERSUS MEDIUM COLONIES AT THE OPENING OF THE HARVEST.

**How a Colony May Reach Maturity too Early for the Harvest, and thus Develop the Loafing and Swarming Mania; the Double-story Ten-frame Hive for the Prevention of Swarming, and the Busy Man who hasn't the Time to Equalize Brood.**

BY E. D. TOWNSEND.

["The ideal colony must not be over-populous. A hive is over-populous when its working force is too great in comparison to the dimension of the hive and to the number of wax-building bees.

"Such a condition is intolerable to the bees, and they try to help themselves by loafing. Their instinct teaches them to begin this loafing even before the hive is over-populous. The bees seem to see the combs are filled and capped, that the bees are daily hatching, and that they will soon be crowded. A colony in such a condition will never perform the wonders in gathering honey that we may expect from one less populous. Such a colony feels instinctively that its abode will soon be too small, and the swarming fever sets in; and we know that, when this is awakened, the bees will continue to loaf. At the most, only as much honey will be gathered as is needed for making the swarming preparations. A colony with the swarming fever is of little value as a honey-gatherer."—GRAVENHORST.]

It is rarely that one finds so much in so few words as is expressed in the above quotation. The thought comes in here, that there is a condition involved that is hard for the average bee-keeper to comprehend—that is, if a colony of bees comes to its best or full working strength just two or three days before the honey-flow is on, that swarm is very likely not to store more than one-half as much surplus as one that comes to maturity just with the flow. This, of course, is with the supposition that neither one should cast a swarm.

The other, or medium-sized colony, may not have wintered quite as well as the other, but had a good queen that kept what workers there were in the colony just hustling to take care of what eggs she supplied, coupled with all the other work of the hive, so that there was not a single minute but that every bee in the hive had all it could do, and many times more. Such a colony is ready for the harvest when the season does open up.

Let us look inside of the other hive—the one that was ready before the harvest was on. They have come to maturity a few days too early for the season. Although they may not have any queen-cells started during this time, if you look down between the combs you will find little clusters of bees hanging together; and if the weather is warm, perhaps some may be seen crowding out at the entrance. These bees that have clustered in this hive have learned the art of shirking, and there is nothing to do but let them swarm, because that alone will bring back that energy and hustle they had before coming to this stage of stagnation that I have explained above.

The case cited above is, perhaps, an extreme one; but I assure you that bees do not have to come to this stage of development to be worth only half a colony from a surplus-honey view-point.

Some take brood from the strong to build up the weak, doing this previous to the honey-flow, with the express purpose of preventing this stagnation on the part of the strong, and at the same time building up the weak. Such procedure, if practiced in an intelligent manner, so that the weak and the strong shall be equalized, will produce good results, because none will be too strong too soon. When this is properly done they will all work with the energy of a newly hived swarm; then if there are still left more weak colonies than can be built up into colonies in time to take advantage of the honey-flow, such colonies can be allowed to build up into colonies of their own will, or they can be used in an almost unlimited number of ways at the option of the apiarist.

The shifting of brood by the inexperienced, for any reason whatever, should be done on a small scale, and for experimental purposes only.

Since I have been in the business more extensively, a different system of management has been found necessary; namely, a scheme for using double-story ten-frame hives. A system that is all right, and which works well with one home yard of bees, may not work at all with an outyard or with extensive bee-keeping where more bees are kept than the apiarist himself can care for, necessitating the work being done by others, and these, many times, perhaps of small experience.

It is a fact that a very large hive containing an amount of honey in excess of that needed to carry the colony through spring, with an abundance of comb room, will not swarm nor acquire the swarming fever until the honey season is on, when the bees, assisted by the queen, get the hive nearly full of brood and honey.

A ten-frame Langstroth hive, two stories high, is ample in size to hold back the swarming fever until the white-honey season is on in June. Colonies in such a hive, that are good to strong, during the period of warm weather previous to the honey-flow, usually commence to store honey in this location about May 20. With so much clustering room, such as these hives afford, no swarming fever will be induced.

When the warm weather of the last part of May arrives, an upper story is given our medium to strong colonies, either with or without a queen-excluder, depending on whether it is a yard where excluders are used or not. Our honey season usually commences during the second or third week of June, in this location. As there is no honey-flow previous to the main clover flow in June, sufficient to cause bees to contract the swarming fever, the ten-frame hive used two-story during practically all of the hot weather previous to the honey-flow, keeps our bees practically free from the swarming fever, and without handling a single brood-comb.

This system is well adapted to the eight-frame hive or smaller hives, only the second story should be of worker comb, and the queen allowed full sway through both stories. Later on, after the bees get to work in dead earnest, if one likes, the queen can be put down into the lower story, and an excluder placed on the lower story, since the bees have now almost forgotten there is such a thing as swarming, being so intent on the securing of the abundance of honey that ought to be coming at this time. Moreover, with the Italian bee this is the season of the year, or the season has now shaped itself so that one eight-frame story is all (and usually more than) the queen will occupy with brood, because the bees are so intent on storing honey.

This same principle of giving abundance of comb room during hot weather, previous to the main honey-flow, with the idea of preventing the bees from thinking about swarming, is carried out with our comb-honey as well as with our extracting colonies.

In the case of the comb-honey bees, any empty brood-nests are used for the purpose of this extra room. Then we have provided about half as many sets of shallow extracting-combs as we have colonies of bees in the yard, which are used to finish up the season in the production of comb honey, and also to give clustering room previous to the season, as I have explained above.

Remus, Mich.

## SPRING MANAGEMENT.

### Building Up Colonies for the Honey-flow; a Unique Scheme of Exchanging Brood between Weak and Strong Colonies.

BY OREL L. HERSHISER.

*Continued from last issue.*

The queen in each colony of class three will soon fill as many combs with eggs as the colony can incubate, and her usefulness in bee production for work in the rapidly approaching harvest will be curtailed unless provision is promptly made for her. We will, therefore, remove two combs of eggs from each of the colonies of class three which is sufficient to give one each to all those in class two in exchange for as many empty combs which are used to fill up the empty spaces in the hives of class three from which the combs of eggs have been removed. A few days thereafter the colonies of class two may again be reënforced by a second installment of eggs from the colonies of class three in exchange for empty combs. By this time practically all the brood that was in the combs at the time they were taken from the colonies of class one and given to class three will have emerged, and the additional nurse-bees thus afforded, together with the more favorable weather conditions that usually obtain with the advancing season, will enable the colonies of class three to nurture the young and incubate the eggs as fast as the queen can produce them; and we have so strengthened all the colonies of class two by the reënforcements of eggs from the twenty-five weak colonies as to bring them up to prime condition in good time for the honey harvest. If any of them should be still lacking they may be at once strengthened by the addition of combs of capped or hatching brood (not eggs) from the colonies of class three just before the honey-flow commences, class three having a goodly supply of such combs by reason of having kept those first given them from the strong colonies filled with brood.

Having thus brought all the colonies of class two up to the honey-flow in prime condition, let us see what may be done in order to realize some further profit from the colonies of class three. It is a fact that many bee-keepers might profitably recognize, that one strong colony that will yield a good surplus is better and more valuable, so far as honey production is concerned, than a large number of weak colonies that yield nothing. What, then, is the use of these twenty-five weak colonies from which we have been continuously and systematically taking most of

the eggs the queen could produce, but which, notwithstanding, have gradually attained a strength of from two to four combs of eggs and brood each? None of them are strong enough for the honey-flow now almost at hand, yet in the aggregate there are enough bees about to emerge, which, together with those already on the wing, would still make considerable profits in honey if they were properly assembled. Let us select eight of the best of them and use the entire brood force of the remaining seventeen in bringing the eight up to surplus-producers. We have now brought fifty-eight of the original non-surplus-honey producers up to the harvest in the best possible condition by having availed ourselves of almost the maximum egg-producing capacity of all our queens.

We have, undoubtedly, defeated swarming in a number of the original strong colonies, but have probably induced it in a corresponding number of the best of the colonies in class two, and we may assume that the increase by swarms, either natural or forced, as a result of these manipulations, has been neither increased nor decreased. Having greatly weakened the last seventeen of the colonies of class three we will hive swarms with them, selecting the best queen as between the swarm and the colony. By so using seventeen of our twenty-five swarms we shall get all our remaining colonies of the third class so strong as to gather an abundance of stores for winter, as will also the other eight swarms placed in empty hives. In the good season assumed, the twenty-five original strong colonies and the fifty-eight that have been made strong by manipulations, eighty-three in all, will gather 100 lbs. surplus each, or a total of 8300 lbs. Some of the swarms will produce surplus honey; but as the amount of surplus from the parent colony has been decreased by reason of this swarming during the main honey-flow it is fair to assume that the honey gained from the swarms is equivalent to that lost by the parent colonies, and that all have enough honey in the brood-chamber for winter by the end of the harvest.

Assume this apiary in the early spring, and the season and location to have been on an equality with the ones in the first illustration. The first apiary having produced 2500 lbs., and an increase of 8 colonies, or 108 colonies fall count, and the second, by systematic manipulation, we have brought to yield 8300 lbs. and an increase of 8 colonies, or 108 colonies fall count; then the total net gain as the reward for our pains in building up the colonies for the honey-flow is 5800 lbs. Surely that is liberal compensation.

The above illustrations are assumed in order to illustrate clearly the possibilites of careful and systematic manipulations, conducted with thoughtful care and with a definite object in view. It may be unnecessary to state that rarely if ever will the exact number or the proportion of strong, medium, and weak colonies, assumed in these illustrations, fall within the experience of the bee-keeper. It is hoped, however, that the assumed examples will serve to emphasize the golden rule of apiculture, namely, *supply to all the queens the conditions necessary for reproduction to their fullest capacity during the time that will bring the workers to the honey harvest at the most vigorous age.*

Commenting on an outline of this plan of building up weak colonies, heretofore published, J. L. Byer, writing in *Canadian Bee Journal*, remarks that this has always appeared to him to be too much of the robbing-Peter-to-pay-Paul nature, and he doubts if so much time spent in manipulation is paid for in the end. His comparison is at fault, for both Peter and Paul (the colonies of bees) are the property of the bee-keeper, and there can be no robbery in making an advantageous disposition of one's own property. I suggest a better comparison. The apiarist, being possessed of certain talents (his colonies of bees), is justified by a high sense of duty to himself and to all in making such disposition of them as will yield him the greatest profit. If he has a colony containing a choice queen which he contemplates moving from an outyard to his home for breeding purposes, but, upon making a trip for the purpose, finds she has absconded with a large swarm, Peter has been robbed, but Paul has not been paid; and the bee-keeper who has not made the best use of his talent has suffered a loss. Far better to have done a little manipulating to build up some weaker colony with brood that could be spared without impairing the usefulness of the strong, and, incidentally, retard or defeat swarming.

The expedient of stimulative feeding may be very profitably employed after settled warm weather has commenced whenever there is a protracted honey-dearth, and especially after apple bloom, until white clover begins to yield nectar, ever urging the queen to keep everlastingly at it during this interim, for it is the bees reared at this time that will be of the greatest service a little later on. Very often the colonies that are strongest in the early spring are surpassed in honey-gathering by those of medium strength, which is probably due to the latter having a field force of workers of greater vigor, many of the former having reached the period of old age before the harvest is on.

Frequently bees winter with very light loss of stores, and in the spring the brood-chamber is clogged with honey to such an extent as to restrain the queen seriously at the time when she should be laying to her full capacity. In all such cases combs of honey should be removed and empty ones given in exchange, so the building-up of the colony may not be retarded. These combs of honey may be profitably used in outside stimulative feeding during any dearth of honey after apple-bloom, placing them some rods from the apiary for the bees to empty. However, if foul brood is in the locality, outside feeding of honey taken promiscuously from the hives should not be resorted to without caution.

Spreading brood is an expedient which,

on the whole, requires such careful judgment that it can not be recommended. Early in the spring it certainly is not advantageous, and later it is hardly necessary, as the bees and queen will attend to all that without assistance. But if it is felt that the brood must be spread, do it by placing the outside comb, in which the queen is laying, in the center of the brood-nest, making a place for it by moving the combs apart. This will not materially enlarge the brood-nest; and the fact that the queen is occupying this outside comb is some evidence that the colony can maintain the proper temperature over that por- of the brood-chamber.

Well-thought-out plans, systematically and practically applied, will often win success from what may seem hopelessly adverse conditions. Liberal reward by way of increased profits surely awaits the bee-keeper who gives systematic thought to his bees in the spring, and anticipates the honey-flow with thorough preparation of his colonies.

Buffalo, N. Y.

## FEEDING FOR STIMULATING.

**Spring Feeding to Stimulate Brood-rearing Wrong in Theory and Practice; Feeding in the Fall the Proper Time; Requeening More Important than Either; Ripening Honey on the Hives.**

BY J. E. HAND.

I have read with considerable interest Mr. Alexander's article on spring feeding, page 1376, Nov. 1, 1907, especially since I have expressed somewhat opposite views upon this same subject, even going so far as to say that *spring tinkering with bees is a useless waste of time*, and that, if it is necessary to feed in order to stimulate brood-rearing in the spring, autumn is the time to do it instead of spring. I use the word "if" in the above connection because recent developments have led me to conclude that *feeding at any time to stimulate brood-rearing is unprofitable*, and is beginning at the wrong end of the problem to solve it.

If I had a queen that would not lay all the eggs that a colony of bees could care for during the breeding season I would reinforce her by adding another queen; and I consider this the proper thing to do instead of feeding all summer to try to force one queen to do the work that two could do without any fussing whatever.

On page 1318 Mr. Alexander says: "I can see no more consistency in feeding bees during September in order to induce spring brood-rearing than there would be in feeding our cows in July to increase the flow of milk the following May."

Mr. Alexander could not have hit upon a happier illustration than the cow, since these two cases are almost exactly parallel, only, in my mind, the application works just the other way. It is just as important to feed a cow during winter with a view to increasing her flow of milk the following season as it is to feed bees during September to stimulate brood-rearing in the spring.

In the case of the bees, the surplus energy (the result of stimulative feeding during September) is stored up within the hive for future use in the form of a greatly increased force of young bees which, after all, is the greatest stimulant that can be imagined to induce early and constant brood-rearing the coming spring, and without which spring feeding would be in vain, since no feeding would be necessary to enable a queen to lay all the eggs a *weak* colony would care for.

With the cow, the surplus energy (the result of high feeding during the previous season) is stored up in the form of flesh and greatly increased vital force, all of which will enable her to turn a greater part of her food during the following season toward increasing her flow of milk instead of to the building-up of a body weakened by improper care and insufficient food during the past season. And such a cow will not have to be helped up in the spring any more than will such a colony of bees need feeding in the spring to stimulate brood-rearing.

I wish to go on record as saying that *if bee keepers would give their bees proper care and attention during the latter part of the season they would require very little attention during the following spring* until time to put on the sections, and weak colonies would be the exception instead of the rule.

Now I think I have made it quite clear that autumn feeding is ahead of spring feeding; yet there is something else of vastly more importance than either, and that is *the queen*. When it becomes necessary for the bee-keeper to feed his bees to stimulate brood-rearing during the *natural breeding season* you may depend upon it there is something radically wrong with his management. The queen is probably worthless, and she should be replaced by a good one reared on correct and scientific principles.

There are two points in Mr. Alexander's article that he does not make quite clear. One is, why he finds it necessary to have so much honey in his hives during winter as to interfere with the brood-nest the following spring; and the other is, why does the uncapping of sealed combs, if properly done, induce robbing any more than feeding would?

### THE SUPREME IMPORTANCE OF HAVING HONEY WELL RIPENED.

Regarding the statement that it is not necessary to have more than one set of extracting-combs on a colony at a time, I can, perhaps, better express my views by quoting R. A Burnett & Co.'s statement to the effect that, *if bee-keepers would allow their honey to ripen upon the hives it would do more toward creating a demand for it than any law against adulteration.* And I will add to this that, if every bee-keeper in the country would read this until he can repeat it with his eyes shut, and then put music to it, and learn to sing it and whistle it, and then paste it all over his hives, extracted honey would soon

sell for very nearly as much as comb, and it would be better worth the price than it is today.

Birmingham, O.

[Our correspondent has made some very good points, some of which we have taken the liberty of italicising in order that the reader may be sure to see them.

We can only repeat, as we have already done, that in considering the Alexander methods we must take into consideration his peculiar environments, and the fact that his main honey-flow begins some weeks after the honey-flow of most bee-keepers in the Northern States comes on.—ED.]

## WOODEN SPLINTS VERSUS WIRES IN FRAMES.

### The Comparative Advantages of Each.

BY DR. C. C. MILLER.

A correspondent asks me to reply in GLEANINGS to some questions about foundation-splints. These questions are mainly answered in a slip that The A. I. Root Co. sends out with the splints; but in view of an awakening interest in foundation-splints it may be well for me not only to answer them here but to discuss the whole subject quite fully.

I do not think of any advantages that wiring has over splints, and I do know of advantages that the splints have over wiring. With horizontal wiring there is testimony to stretching of the foundation. Although this testimony is pretty general, there are probably thousands of bee-keepers who have never suspected any evil results from horizontal wiring, and yet the evil results are there all the same. Sometimes the stretching is enough so that drone brood will be found in several rows of cells under the top-bar. Of course, this will be noticed; but oftener the stretching, while not enough to allow the cells to be used for drone brood, is enough to prevent them from being used for worker brood.

I remember one very good authority saying that, with the Langstroth frame, there would always be something like two inches of honey between the brood and the top-bar. This is probably quite generally true, because horizontal wiring is in general use, and the cells for some distance under the top-bars are so stretched that the queen will not use them. But with perfect worker-cells under top-bars there will be no such margin of honey. In the height of the queen's laying I'll show you frame after frame with the brood clear up to the top-bar — not a cell of honey between brood and top-bar. Later on in the season, as the honey encroaches on the brood-nest it will encroach at top as well as sides.

Is there any need to discuss horizontal wiring further, so long as splints give perfect worker-cells clear to the top-bar?

But what about vertical wiring? I've had hundreds of frames wired vertically, and the cells under the top-bar were faultless. But in order to have the wires sufficiently taut to be straight, the stretching bowed the bottom-bars. This, while in reality changing the depth of the frame, made it practically impossible to bring the foundation clear down to the bottom-bars unless the foundation were cut curving — a difficult thing to do, seeing no two curves were alike. Vertical wiring might do all right with bottom-bars $\frac{3}{4}$ thick, but that is hardly desirable.

I have not mentioned all the objections to wiring, but is it necessary? Better tell about splints.

Foundation-splints are made of basswood — for any thing I know, other wood would do — about $\frac{1}{16}$ of an inch square, and about $\frac{1}{8}$ inch shorter than the distance between top and bottom bars. They might be made long enough to touch at both top and bottom, but that would make slow work about putting in. For each frame of usual length, five splints are used, placed vertically.

Take a shallow dish — a square pie-tin is good; put in it enough beeswax so that, when melted, it will be $\frac{1}{2}$ inch or so deep. Put in enough splints so the dish will not be too crowded, and it will froth up by means of the steam from the moisture in the wood. When it stops frothing you are ready to operate. The heat should be properly graduated, either on a kerosene, gasolene, or some other stove, so that the wax shall not be kept too hot, otherwise not enough wax will cling to the splint to coat it. If too cold it will not be easily cemented to the foundation. So long as the wax is kept liquid it is not likely to be too cold. The work should be done on a hot day or else in a hot room, so the foundation will be soft.

Wiring is done before the foundation is put in the frame. Splinting, on the contrary, is done the last thing, the foundation being fastened in whatever way to the top-bar, and being cut large enough to fit close to the bottom-bar and end-bars. It is a little better to have a divided bottom-bar, as in the Miller frame, so the foundation shall go down between the two parts of the bottom-bar; but with a plain bottom-bar the foundation merely comes down to the bar.

Take a board that will fit easily inside the frame, perhaps $\frac{1}{8}$ inch smaller than the inside dimensions, and put stops on the edges so the foundation shall just rest on the board. It will make the work a little easier if you have on the board a mark where each splint is to go, a straight black line heavy enough to show through the foundation. There is to be a splint an inch or so from each end, a splint in the middle, and a splint midway between the center and each end splint.

With a small pair of nippers having square jaws, pick up a splint by the center out of the hot wax and lay it in place. It doesn't matter whether it touches the top-bar or the bottom-bar, or whether it is part way between. Don't fret if you don't lay it within an inch of the right place. In the hot room it isn't going to cool right away, and you can

shove it into place with the end of your nippers. But after a little practice you'll drop it in the right place first time, and do it very rapidly. As soon as you put it in place, an assistant presses it slightly into the foundation with the edge of a thin board kept constantly wet. That's all; the bees will do the rest.

By the aid of these splints I can show you beautiful combs built clear down to the bottom-bars—not a pop-hole anywhere. But I can show you lots in which the bees have more or less gnawed away the foundation so as to make a passage between the comb and bottom-bar. That's because the frames were given when they ought not to have been given—in a poor year when bees were doing little or nothing. If you want combs built down to the bottom, get them built and finished at a time when the bees are storing.

"Do the splints interfere with the laying of the queen?" Not in the least. When the brood is sealed, with the comb in the right light you can see a slight ridge where the splint is, but it can do no possible harm.

I think that is all; but if any one has further questions I'll be glad to answer them.

The same correspondent asks, "What is your plan for controlling increase in producing extracted honey?" I work altogether for comb honey. But if I tried for extracted I'd have large hives *with abundant ventilation at each story.* With room enough and ventilation enough I should expect swarming to be pretty well controlled. I might also try the Demaree plan: Just before swarming time raise all brood into an upper story over an excluder, leaving the queen in the lower story with empty combs or foundation.

Marengo, Ill.

[It is said that "confession is good for the soul." We are frank to acknowledge that we did not take kindly to Dr. Miller's wooden splints when he first wrote about them some years ago; but in view of the complaints of a slight sagging due to horizontal wiring, resulting in the building of drone-cells at the top of the comb, and in view of the further fact that vertical wiring with thick top-bars is not practicable, we are now inclined to look with favor on the Miller wooden splints. Dr. Miller has improved his method of applying them, and the difficulty of manufacturing them in the first place has been largely overcome, so that now the two main objections which we originally offered have disappeared. The wooden splints are cheap, and easily applied, if we may judge from the description given by Dr. Miller. We have seen a good many of Dr. Miller's combs stayed as he recommends; and a finer lot, filled clear out to the wood, without pop-holes or drone cells, can not be found in this country.

The very argument that Dr. Miller presents in favor of foundation cut to fit *brood-frames* applies with equal force to foundation cut to fit *sections.* Why? If a neatly fitting sheet prevents pop-holes and passage-ways in the one case, why should they not in the other? G. J. Yoder, in this issue, explains how in the ordinary section one can fasten foundation and cut it to fit so it will not buckle. If there is any thing in this scheme, or in that of Mr. J. E. Hand, it goes without saying that by either plan we shall be able to secure a much larger percentage of No. 1 and fancy comb honey. When we remember that the fancy always sells at a good price, and that a really fine article of No. 1 follows next, it is apparent that foundation making contact with all sides of a section probably means dollars and dollars to the bee-keeper, with practically no extra cost in foundation, and with perhaps a little extra time.—Ed.]

## PRESERVING HIVES.

### How and When to Paint; What Paint to Use; Metal and Paper Covers.

BY F. GREINER.

To justify us in saying very much about painting hives it must be conceded that covering a hive with paint does no injury to the bees within it, and that, at the same time, it is a paying investment. The latter question, I believe, we could as well dismiss without argument. With the price of lumber as it was 35 years ago there might have been reason for not painting hives and houses, for it was cheaper to replace than to keep constantly painting, providing we cared nothing for looks; but with lumber at from $30 to $45 per 1000 we can well afford to keep hives and houses painted.

As to the first question, I have come to the conclusion that bees do not suffer in painted hives any more than in unpainted ones. I have watched the cellar-wintered bees in the unpainted hives and in those painted; and with the amount of ventilation they have in my rather dry cellar the combs and bees come out as dry and as well otherwise in one as in the other. As I have settled on wintering outdoors with upward ventilation through a thick packing, there is never an excess of moisture nor an uncomfortable condition on this account in my hives, painted or not painted. So far as I am concerned I want to keep my hives painted, and I believe a large majority of bee-keepers concur with my conclusion.

The larger part of my work along this line has been repainting rather than painting new work, and I will more explicitly deal with this in my article.

As to the color, a light one is to be preferred. Dark draws the heat to an undesirable degree, although with chaff hives the difference is not so marked. A very smooth glossy surface is not to the liking of the bee, perhaps in more than one way. For this reason I never give more than two coats of paint to new work—the first a very thin coat, the next a rather heavy one. I also practice covering the fresh newly applied paint with fine sand or cement, particularly the front of each hive, and slanting alighting-boards

if the latter are painted at all. A rough surface enables the bees to get a better foothold, saves bees and bee time, and the bee is not dazzled by a white glaring paint (the last is only theory).

As to what kind of paint to use, this is a perplexing question to answer, as we have difficulty in obtaining the same grade of paint each time. I have used white lead and raw oil with a very little japan drier added, and it wore very well. At other times it either scaled off or rubbed off as dust (I should prefer a paint which had the last-named fault rather than the first, as it would last very much longer). The trouble seems to be either in the oil or in the lead. Perhaps adulterants have been used at times with one or the other. An addition of zinc is an improvement on the paint; still, I use it very seldom, and only in the ready-mixed paints. I have never used the dry-powder (water) paints on account of lack of faith; but I should like to hear from some who have used it for hive-painting, or any other work, as to its protecting power, lasting qualities, etc.

HIVES CAN BE PAINTED WITH BEES IN.

In repainting old work I do not wish to go to the trouble of taking the bees out of their hives. When hives needing paint become unoccupied, then, of course, is a good time to repaint them; but this does not occur often, and generally we do not wish it to; consequently the most of my repainting is done with the bees in the hives. A good time is when we are not very busy with other work, either early in spring or in the fall of the year. As much of the old loose paint, propolis, wasp-nests, spiderwebs, etc., as possible should at first be removed. For this purpose nothing is better fitted than a cabinet-maker's steel, which also answers for cleaning separators and the insides of our supers and hives. A worn-out crosscut saw will make a good many such "steels." I have cut a number of them about 3×6 inches, filed straight and perfectly square. They come very handy in the shop and yard. We can dig with them into the corners, and scrape off all the loose paint and accumulations very quickly. It is necessary to give the colony in the hive to be treated a little smoke, even if it should not be warm enough for bees to fly. As soon as cleaned, and surface is dry, the paint may be applied with a medium-sized flat brush. At certain seasons of the year the bees may not trouble any at the entrance. If they should, it might be well to remove the bottom-board, exchanging it for one already painted, or wait for the bees to retreat, perhaps finishing the job with a few strokes after they have become quiet, and then sprinkling a little fine sand upon the green paint. This will prevent any of the bees from becoming daubed very much. I use a little more drier when repainting in this manner than when doing up new work, for obvious reasons. The bottom-boards are giving me the most trouble to preserve, and constitute nearly all there is about a hive to give out.

I am anxious to find a preservative not obnoxious to the bees; and, by the way, I want the bottom-boards of hives made of fully as heavy lumber as any other part. I could give quite a number of reasons for this.

The paint on the roofs gives out the quickest, and needs replacing frequently, unless, indeed, metal is used, which needs no paint whatever. No metal answers the purpose better than zinc. Next would be zinc-coated iron (galvanized). I am confident that such metal roofs are the cheapest for bee-hives, in the long run. On account of the temporary cheapness I have used roofing-paper, tarred and otherwise. The Neponset has given me the best service. By giving two coats of oil they have lasted ten years and are good now. Perhaps they should be painted. The weak feature is that paper roofs do not stand rough usage. In carting them about, the paper sometimes is torn. They must be handled with care.

A point about covering wood covers with paper or metal is this: "Cover the edges of the boards as well, and do it thoroughly, or water will be driven in and under the covering, which will soon rot out the wooden portion of the cover, thus causing a loss and lots of trouble. I have used different kinds of paints on the flat wooden roofs; but all will give out in two or three years. Sanding has not proved to be any help, as I had hoped If we keep any part of the hive painted it certainly should be the roof, and white is to be preferred, particularly if only a single thickness of lumber is between the bees and the outside. I can hardly understand why others have no trouble with such an arrangement. I have, only a few times, left some hives uncovered by accident or oversight, this happening when the sun shone upon the hives during the noon hour. The result was the loss of a super of honey, not counting the injury to the bees in each and every case. One thickness of board (these spoken of were unpainted) is not enough protection against the hot rays of the sun; but if that is all the protection given, perhaps the white paint would lessen the effect.

I should have mentioned the advantage of repainting hives when no bees are in them: viz., that we can then drive a few nails where needed. Boards will check and warp some, particularly with my hives, which are only nailed together—no lock corners, no halving—just butted together. These hives stand the wear well, but need a few nails occasionally. It must, however, be said that only those of recent make are put together with cement-coated nails. Formerly only the smooth nails were procurable, and finish nails, either wire or cut, were used.

My supers, which are housed when not in use, will never again need paint, or nails either, so it would seem, although many have seen thirty years' use.

In regard to paint-brushes, I want to add, be careful how you leave them. Keep them in oil "suspended," not standing on the bristles. Just keeping them in water will do; but the make of brushes we have now

will rust out in a little while if thus kept. Oil prevents it, and does not evaporate.

Naples, N. Y.

[We desire to indorse in the main the statement made by our correspondent, especially when he says he prefers a paint that will powder or chalk rather than one that will scale off from the wood. A pure lead, after it has been on for two or more years, is liable to powder, while a lead-zinc paint will scale. In most localities a pure white lead will give better results than one containing a percentage of zinc. The majority of the ready-mixed paints contain some zinc. The purpose of the latter is not to adulterate or cheapen, but to give a harder and glossier finish; but in localities subject to a hot burning sun in summer preceded by a large amount of humidity, the zinc paints should be avoided. While they give a hard surface, that very hardness causes the paint to flake off in scales; then when the wood is repainted it has a smallpox appearance. But that is not all. The paint that did not flake off will, after the repainting, sooner or later come off, taking with it the top coat. On the other hand, if a pure lead paint be used, when the surface becomes old it will chalk off, or powder; but on a fresh application of another lead coat this powder will unite with the oil, serving to strengthen the paint, making the surface smooth, and as good as it was on the first coat.

The first coat of any paint should be put on very thin, as Mr. Greiner recommends. The surface of the wood should be dry and clean; the second coat should be put on thicker, of course. In buying lead paints, make the seller put up a guarantee to refund the pay if the paint flakes off in scales at the end of three or four years Another thing, do not try to buy a cheap lead. The national pure-food law does not apply to any thing but food and drugs, and the dealer may sell you adulterated paints without fear of prosecution, hence make him put up a guarantee.

As Mr. Greiner states, we have painted hives while the bees were in them. The alighting-boards are usually painted at night. The paint will set enough before morning to cause no inconvenience on the part of the bees.

This article is seasonable, because in the spring, when it is too chilly to do other work in the apiary, one can paint all his hives—both occupied and unoccupied.

We agree with our correspondent that it is economy to use paint; for the high price of lumber, which is constantly going up, makes it more necessary than ever to preserve it. Then if any one wishes to sell any colonies, or his whole yard, nice bright painted stock will bring a far better price than that which is unpainted.

Paint made of Portland cement and oil has been suggested several times in our columns. See p. 230, Feb, 15, 1906; also p. 715, May 15, 1907. From tests that we have made, we have concluded that such preparations are worth investigating.—ED.]

We acknowledge the receipt of an excellent annual report of work d ne at the agricultural experiment station on the island of Tortola, one of the Virgin Isles, West Indies. It contains some excellent views of the island, and is well gotten up. Tortola is excellent for bee-keeping, and has the reputation of being very healthy. It is easily reached via St. Thomas, Danish West Indies. The price of this report is six cents.

### A NEW WORK ON BEE HISTORY.

We have received a small book containing a brilliant contribution to the history of bees and bee-keeping from the earliest days down to the present time by the editor of *Pfalzer Bienenzeitung*, Mr. Ph. Reidenbach. This was originally given at the golden jubilee celebration of the Pfalzer Bee-keepers' Association last summer. The author shows a very comprehensive grasp of the whole history of bee-keeping, in addition to which he wields a facile pen. The brochure is adorned with portraits of Georg Pictorius (1041 A. D.), Freiherr von Ehrenfels, Mehring, Dzierzon, Berlepsch, and Leuchart The work comprises only 44 pages; but the author has managed to compress within the space allotted to him a mass of valuable information which required much research to discover. Copies may be obtained from the office of the above journal at Rehborn (Pfalz), Germany. The price is one mark.

### A SWISS APIARY.

On the next page the reader's attention is directed to the characteristic view of an apiary in Switzerland, a country to which all modern bee-keepers look with veneration as the classic land of bee-keeping—the home and nativity of Huber, the prince of bee-keepers. Switzerland, certainly, is a land of science. No other country is so sincere in its affection for the cause of truth. Of course, it is a small country in area and population; but in ideas it is not small, and it has given to the world a host of illustrious men. At present it is a hotbed of advanced ideas on bee-keeping, led on by such men as Kramer and Goldi; and the Swiss never seem to lack illustrious men to lead them forward A few years ago they had Bertrand and Dr. von Planta. It would be a grand thing if feverish America would catch on and hold fast to the scientific spirit which characterizes the Swiss people in all their actions.

SWISS BEE-STATION AT DAVOS.

MEMBERS OF THE MICHIGAN STATE BEE-KEEPERS CONVENTION, HELD AT SAGINAW, DEC. 18 TO 20, 1907.

The report of this convention appeared on page 99 of the Jan. 15th issue.

## BEE-KEEPING IN GEORGIA.

### Colonies on Elevated Platforms.

BY J. L. PATTERSON.

I keep my apiary on elevated platforms as shown in the engraving. The hives do not rot so fast, and frogs, ants, spiders, etc., can not get into them. The bees are also more easily kept out of water or away from the sand, which often beats against the hives with the wind.

Last year I averaged 30 lbs. of honey to the hive; but this year I did not do so well, for there was an average of only 10 lbs. to the hive. Two of the extracting-hives contained 2½ gallons of honey each. In a poor season the very strongest colonies store their

J. L. PATTERSON'S ELEVATED APIARY, AT AUGUSTA GA.

hives full of honey while the weaker ones live on through the season without storing extra honey.

There were only two days last season when the bees did not fly out of their hives. It was a warm winter.

Augusta, Ga.

## BEE-KEEPING IN BRITISH GUIANA.

BY W. K. MORRISON.

The picture here of an apiary in the city of Georgetown, British Guiana, is almost self-explanatory. The hives are raised on stilts to prevent the very large frogs from leaping up to the entrance and devouring all the bees. If the reader thinks this is an imaginary evil he is mistaken, for I cut one open which had been at a hive for some time; and, so far as I could judge by counting the bee-heads in its stomach, it had just consumed 400 bees.

The city of Georgetown is intersected with canals, and these make splendid breeding-grounds for the frogs. Despite this fact, the city is a hot-bed of bee-keepers, and for its size I should say it had more bees than any other city in the world. The bee-keepers, however, get fair results; but during the rainy season they are obliged to feed liberally to save their bees.

One of their honey-plants is the wonderful water-lily—the *Victoria Regia*, the leaves of which are as large as a buggy-wheel. These rest on the water, and are beautifully green. The flowers are at night like stars on the surface of the canals Mangrove swamps near by help the bee-keepers to make both ends meet; but there are many other flowers, such as cocoanut, royal palm, poinciana, etc. Though low and swampy, the city is not unhealthy; but it possesses one of the largest hospitals in the world.

When the writer saw this apiary it was on a roof over a grocery and provision store, but it was rather too hot for the comfort of the bees or the owner. I think the owner, Mr. Faraz, is a native of the island of Maderia, a beautiful tropic land off the coast of Africa, ruled by the crown of Portugal.

ANTONIO FARAZ IN HIS APIARY IN SOUTH AMERICA.

## THE BREEDING OF QUEENS.

### Is the Time of the Year and the Manner in which a Queen is Reared of more Importance than her Pedigree?

BY J. A. CRANE.

I have watched with much interest the tilts between Dr. Miller and the editor of GLEANINGS with reference to the advisibility of breeding from pure stock as the best honey-gatherers irrespective of race or color. I have been experimenting along the same line for several years, and my conclusion is I would rather have a carefully reared queen from my poorest stock than a poor or ordinary one reared from the best stock in the country. I would also rather have a queen

S. E. KLEIN'S APIARY, INDIANA, PA.—SEE NEXT PAGE.

raised during basswood bloom than any other season except it might be a supersedure queen at almost any time. I also much prefer swarming-cells to any artificial kind.

I have bought but two good queens in my life, and can not say for sure that they were both good, as the bees superseded one of them the same season; but the daughter of that one, mated to a drone from the stock of the other, making a red-clover golden cross, was the best queen ever in my yard. She was the early bird every time. Her bees filled five supers of extracting-combs during apple bloom in 1906, weighing 90 lbs., and cast a large swarm, and three supers in 1907, when she would have been four years old in August; but she was missing in June, and the bees raised a new one from the brood. I have raised a few queens from her, and they are very fair; but not one of them can come up to her.

I have also a queen received as a premium in 1904 that I have relied on for my breeding-queen because of the gentleness of her bees; but in very few cases do her daughters produce extra-gentle bees; but she made a honey record the next season after I got her, and has never swarmed, and I have more than fifty of her daughters in my yard. I produce nearly all extracted honey, and her stock nearly all cap their honey greasy, so it is readily seen they are hustlers. But my point is this: A queen raised in a full colony from the egg, without hurry, and only two or three cells allowed, and raised during basswood, will give you something that is worth money, even if they never had a pedigree. I prefer, though, to breed from pure blood on the mother's side, and let the queens mate as may happen The main reason why I prefer Italian to the blacks is the ease in finding queens, as I use a queen only two years unless she is extra good, and only one if she proves in any way slow.

Another reason is, I have no wax-moths or worms in my combs. Since I have had no queens except pure Italian, no matter how mated, I have never had to fumigate a comb, and can leave empty combs around very carelessly all summer, and they will not be seriously damaged. I can keep queenless colonies all summer by giving brood to keep them stocked, and the worms do not do any harm.

Alexander's method is of no use to me, because I want an early brooder to get the apple-blossom honey, while his surplus comes in August, when my bees have nothing to do but bother the berry-pickers.

If I could not get the apple-blossom honey I would not keep bees in this locality for all there is to be had the rest of the season.

This requires extra-prolific queens which get to business early in the season and lay late in fall. It does not take as many bees to get a lot of honey from apple bloom as from clover; but they seldom are in condition to build much comb, but will fill a super in a hurry in good weather.

Marion, N. Y.

[If the bees fill the cells so completely with honey that there is no air-space next to the cappings the surface of the comb will have a transparent, watery appearance, or "greasy" as you call it on the preceding page. It is often stated that some Italians have this trait; but have any data ever been collected which would show that bees which cap the honey watery are *always* hustlers? We should be glad to hear from our readers on this point. —ED.]

## NINE YEARS OF SUCCESS.

### Bee-keeping in Connection with Farming.

BY J. E. KLINE.

I produce comb honey, and that only. When the honey is taken off I am careful to see that the colonies are all right, with plenty of stores, and then pack ready for winter. I do not lose three per cent.

I live near a county-seat of nearly ten thousand inhabitants, and am well known to the business men of the town. By treating my customers courteously, and giving a square deal, I have steadily built up a large trade which now takes, to supply it, thousands of pounds of purest and best honey bees can produce.

At present I am on a large farm, and am giving my attention to both pursuits. I give my bees the same care that I give to the rest of the stock; but in the near future I expect to give all my time to a largely increased apiary.

Indiana, Pa.

## SECTIONS PERFECTLY FILLED.

### How to Put in Full Sheets of Foundation Cut to a Fit, and yet Avoid Buckling: How One Man has Worked Out the Problem.

BY G. J. YODER.

[We are reproducing, for the convenience of our readers, the cuts we published at the time Mr. Yoder described this originally in GLEANINGS for May 15, 1904.—ED.]

I was interested in the discussion in the Jan. 15th issue, p. 82, on the subject of sections and full sheets of foundation, for I think it is well for us to put forth every effort for the perfecting of this plan. If the section is never so nice, and the filling and finishing imperfect, our profits will be greatly diminished. In the first place, it is unwise to attempt to fasten a full sheet of

FIG. 1.—YODER'S PLAN OF FASTENING FULL SHEETS OF FOUNDATION ON THREE SIDES.

FIG. 2.—FASTENING FULL SHEETS OF FOUNDATION ON THREE SIDES.
By using this method it was found that buckling was prevented.

foundation on all sides of a section unless it is placed in such a position that it can not spring either way until it is filled and finished by the bees. This is easily accomplished by following the directions and illustrations we gave in the May 15th issue of GLEANINGS for 1904.

Cut a light board about three inches longer than the width of four sections, and just the width of the inside of the section. Now cut four square blocks of such a size that folded sections can slip over them, and a fraction less in thickness than the width of the section. Nail the first block 1½ inches from the end of the board, and place a section over it. Put block No. 2, with section over it, next to No. 1, and so on till all are nailed on. Make at least five or six of these forms with blocks on. Next make a trough the width of the board of the form without the sections, and 2 inches deep, so the form will slip in easily to the depth of the blocks. I next melt some wax for fastening the foundation, using about one-tenth part of clean rosin, and have ready a wax-tube or teaspoon with the end bent in on both sides.

If possible, get the foundation cut by the manufacturer, so that all sheets will make a given number of uniform starters with as little waste as possible. The three last seasons I have been unable to buy starters cut just right, and so have had a loss of one-seventh of the foundation for the crop of 20,000 sections.

Put the sections on a form, and spring the section-holder over them. This makes them square and tight. Place the foundation in clear to the top of the section. I prefer a ⅛ space between the lower end of the foundation and the bottom of the section, as this is just about the amount needed to take up any possible sagging, and to prevent the buckling of the foundation. Now grasp the form in such a way that the top part of the section is lowest, and apply the melted wax on the section at the edge of the foundation, turning the form so as to run the wax all around as far as wanted. If all four sides are waxed, the weather warm, and the honey coming in fast, there may be a bulge at the lower part of the section; so of late we prefer to cut the starter full size, ⅛ inch short at the bottom, and to wax the top and only two-thirds down each side. Lay this filled form down to cool, and take the next, giving the wax of the first four sections a few minutes' time to harden. Then place the form over the trough; press the tray down out of the sections and you will have the wide frame of sections, and with the foundation ready for the super without danger of buckling.

If every thing is made right, this method of fastening foundation is not very slow, as we have had over 3000 starters fastened in a

day by one man. Out of the crop of 12,000 sections the past season, I have had in proportion fewer imperfectly finished than ever before.

Our bees did very well the past season. From a little over 200 colonies I took 12,000 sections and 4 tons of extracted honey. I did all the work and manipulating myself, up to casing and extracting. I am 64 years *young*.

Meridian, Idaho, Jan. 22.

[We had quite forgotten the fact that Mr. Yoder described this same method of using sheets of foundation cut to a scant fit, nearly four years ago. Indeed, his method is similar to the one that we have been advocating of late, except that he advises fastening on only three sides, leaving the bottom untouched. We are inclined to believe that he is right.

The use of full sheets of foundation cut to a fit, will, if the buckling difficulty can be overcome, give a more nearly fancy grade of honey than where a small starter is used, or a full sheet leaving a bee-space all around it except, of course, at the top. While Dr. Miller's method of using two starters, one at the top and one at the bottom, makes a good fastening at the base, it still leaves a chance for pop-holes and bee-spaces in the comb at the sides. It occurs to us that it might be possible for us to combine the Yoder and the Miller method, using two starters both cut a scant width of the section, but so as to leave a small gap between when fastened in the sections. Of course, it goes without saying that a close fitting sheet of foundation in a section while on the hive must be held perfectly square, leaving no chance for the foundation to buckle.—ED.]

## HONEY EXHIBITS AT FAIRS.

### A Successful Display at Salt Lake City.

BY F. W. REDFIELD.

At our exhibit at the State Fair in Salt Lake City this year, Sept. 30 to Oct. 5, we had 13 observation hives of bees, a large assortment of goods at each end of our space, besides a big display of honey. The picture does not do justice to the exhibit, as so little of it can be seen. The comb-honey house was lit up with electric lights, and showed off to good advantage. The decorations were in purple and gold, the same colors that we use on our labels for tins. The space occupied was 30 by 15 feet, and our display drew more people than any other on the grounds. The walk was continually packed with people admiring the honey, over $50 worth of which was sold right there. The rest went at the close of the fair, and we took orders for twice the amount on display, which we shipped down after the fair closed.

HONEY EXHIBIT AT THE STATE FAIR IN SALT LAKE CITY, UTAH, SEPT. 30 TO OCT. 5.

Ogden, Utah.

## THE IMPROVEMENT OF THE HONEY-BEE.

### Pure Races should be Selected, since the Good Points of the Crosses may Not be Perpetuated; Not Desirable to Breed for too many Points.

BY C. F. BENDER.

I have had good results from careful breeding, taking a good strain to begin with, and I see no reason why any painstaking person could not do the same. There are a few, even among the ranks of bee-keepers, who argue that there is nothing in selection, either natural or artificial — that the Creator made bees with certain instincts which can not be removed or changed. To such I have little to say, except that it does not appear that way to me.

If we are to get any great results from breeding we *must* decide what qualities we are to breed for. We must select one race of bees, and confine our efforts to that race alone. A first cross may sometimes be better than either race composing it; but such results are not permanent, and can be made so only by a long course of selection.

The leather-colored Italians are, I think, the best race to begin with. There are so many things to be considered in deciding among the different races that I can not give my reasons here; but after a fair trial I must give them the decided preference. They are good to begin with, but we want them better. We want them, 1. To store more honey; 2. To cap it whiter; 3. To swarm less; 4. To sting less; 5. We want to make them

more beautiful if we can. We will proceed to take up these points in the order of their relative importance.

1. *To store more honey.* A very simple matter if this quality were alone to be considered. Simply select the colony that produced the most pounds of honey, and breed queens from that alone. Select three or four of the best colonies for producing drones, and allow no other drones to fly.

2. *To cap whiter.* The Italians can be selected so they will cap as neatly as the blacks, if care is taken in selecting colonies for drones as well as queens.

3. *To swarm less.* Some say it can not be done, reasoning from a false analogy. They say it is like the breeding instinct—it can not be overcome; that it is a sign of energy, etc. So is stinging a sign of energy, and the gathering of large quantities of propolis. But in all three cases it is energy misapplied. We want bees that will turn their energies to our profit. In this case we are trying to get rid of an instinct. It is exactly similar to the sitting instinct in hens. We know that the sitting instinct can be almost entirely bred out of chickens, so we can produce bees that do not swarm, if we allow time enough. How long will it take? I don't know. Perhaps fifty years, perhaps a hundred. But we can produce bees at once that will swarm less than their ancestors did, simply by breeding from those that swarm the least.

4. *To sting less.* I think no one doubts that gentleness can be produced by selection. I have seen a strain of Italians so gentle that they could hardly be induced to sting, but they were very poor workers. The trouble was, they had been bred for gentleness and beauty, to the entire neglect of more important qualities. I would never raise queens from a very cross colony, no matter how much honey they stored; nor would I use poor workers to breed from, merely because they were gentle.

5. The constant temptation of the queen-breeder is to breed for beauty alone, because that is a quality that is at once apparent, while for other qualities it takes time to decide. But for the average bee-keeper, who keeps bees for profit, beauty must be pushed to the very end of the list of desirable qualities. So I think we had better confine our efforts in that direction to keeping three yellow bands. *The more qualities we breed for, the less we shall get of each particular quality;* and it seems to me that beauty is the least important of all to the honey-producer.

To sum up the whole matter, I would first get a good strain of leather-colored Italians, then continually breed for the best, choosing one or two colonies that, all things considered, have given the largest net result with the least care and labor. Raise queens from the one or two best colonies only, but use several of the next best for raising drones.

Newman, Ill.

## BEE-KEEPING IN NEW ZEALAND.

### A Honey-plant that is Supposed to be Poisonous for Cattle.

BY STEPHEN ANTHONY.

The engraving shows a great honey-plant in this locality. It is not exactly a tree, although our government calls it that, and includes it in the family of *Corneaceæ.* It grows in the bush or anywhere wild, on any kind of soil; has a profusion of creamy flowers lasting pretty well through the season according to situation (gulleys first), and the bees are on it all the time. I think it gives an especially fine flavor to honey. It grows easily, but can be easily handled so as not to become a nuisance.

A NEW ZEALAND HONEY-PLANT BELONGING TO THE FAMILY OF CORNEACEÆ.

It is supposed to be poisonous to cattle (it certainly is narcotic), but this statement is modified in that it is so only when in bloom, and only when taken on an empty stomach. I have seen our cattle eat it many times, and as a rule I never stop them. None ever suffered from its effects. Cattle do not

each much of it; i. e., they do not make a meal of it, but take it only as if it were a tonic. If they were compelled to eat it altogether, or got into a habit of it, then of course there might be trouble.

Some one (usually a native) gets poisoned every year about here through eating bush honey (usually not capped), and puka-puka usually gets the blame. Mr. Hopkins had a look at a case of Maori honey-poisoning last year, and I think puka-puka got the blame; but the fact is significant, nevertheless, that it is the Maoris only, or principally they, that get poisoned, and in that case the honey eaten is never capped.

Wastete, New Zealand.

## ALFALFA IN NEBRASKA.

### Conditions which Affect the Yield of Honey; Irrigation; How the Shallow Hive Outstrips the Eight frame Dovetailed.

BY D. R. WAGGONER.

My apiary is a small one, only 64 colonies, and is located eight miles north of the 40th parallel of latitude (south State line), and about 22 miles east of the 100th meridian, in Nebraska. We have about 24 inches yearly average rainfall, of which 17½ falls from April 1 to Oct. 1, during the growing season.

In a normal season our bees begin to raise brood rapidly, and build up when the fruit-bloom comes. This consists of wild plums, apples, cherries, peaches, apricots, etc. In June, when the first crop of alfalfa begins to blossom, we may expect swarms until this crop is cut, when swarming will stop. Cutting this crop begins very soon after the first blossoms appear, and lasts about three weeks. In July the bloom starts on the second crop of alfalfa where the first crop was cut earliest, other fields following in the order in which they were cut the first time. In a normal year we expect our main surplus of honey to be stored from the second crop of alfalfa. If there is plenty of rainfall during July and August, so that heartsease is abundant, we get a good yield in August, and until the frost comes, from this latter plant. These are our main sources of nectar, but of course we have others to help us along.

This year the fruit-trees were covered with blossoms, but the frosts killed them all so that our bees built up very little previous to June unless they were fed. They stored quite a lot of honey from the first crop of alfalfa, and things surely were on the boom with the second crop. Swarming did not begin until the second crop was in bloom. This year there was really no intermission between the blooming of the first two crops of alfalfa, for by the time the first crop was all cut the second was beginning to bloom where it was cut earliest the first time. At this writing (Aug. 12) bloom is coming on the third crop just as the last of the second has been stacked.

Within 1½ miles of my apiary there are 350 acres of alfalfa grown without irrigation. Thus it will be evident that this plant is the main source of our honey crop. This year especially it will be about the only source.

The yield of nectar from alfalfa varies much in different years in this vicinity where there is no irrigation. In order to secure a good crop of alfalfa honey it is necessary to have a vigorous growth of the plant, plenty of bloom, and a bountiful supply of nectar in the bloom. If there is a reasonable amount of moisture in the ground by May 1 to start a good growth of the plant for the first crop, and a good rain comes just after each hay crop is cut, a strong growth and plenty of bloom is assured. If moisture is lacking very much at these times the growth will be short and the bloom scanty. If a great excess of rainfall comes when alfalfa is just fairly in bloom there will be a deficiency of nectar in the bloom. For instance, in June, 1906, we had here 12.73 inches of rainfall; and in July, 9.26 inches. This was excessive during the months of bloom for first and second crops of alfalfa, and my bees made me only 6 pounds of surplus that summer per hive, spring count, owing to the lack of nectar in the bloom. In regions where irrigation is the rule the amount of moisture supplied to the plant can be regulated so as to secure a more uniform yield of honey from alfalfa.

#### SECTIONAL HIVES SUPERIOR TO FULL-DEPTH LANGSTROTH, AND WHY.

When I began bee-keeping I was green at the business, and hardly knew what kind of hive to use as the best and most convenient. I happened to choose a sectional hive for my own colonies, and I must say that I have never regretted my choice. The bees I took on shares were in regular eight-frame Dovetailed hives. The sectional hive I use is very simple in construction. Each of the two brood-chambers is 17 inches long, inside measure, eight-frame width, and 5¾ inches deep, containing eight shallow Hoffman frames. I gave my neighbor's bees in the Dovetailed hives with deep frames just the same care I did my own; and in the two years, while I had the two kinds of hives in my yard I was surprised to see how much better the bees would winter in the divisible hive than in the deep-frame hive. I am thoroughly convinced that, where the bees in the cluster can have access to winter stores by means of the bee-space between the two sets of frames without being compelled to leave the cluster and travel over the top, under the bottom, or around the ends of the large frames to get feed, they will and do winter better, and come out stronger colonies in the spring. Nobody in this region winters bees in the cellar.

I run entirely for comb honey. My supers are 4¾ inches deep. I use plain 4¼×4¼ sections with fences. Since the supers are only 17 inches long in the clear, the sections rest on plain slats ¼ in. thick instead of in section-holders with end blocks between the sections and the ends of the hives. For the life

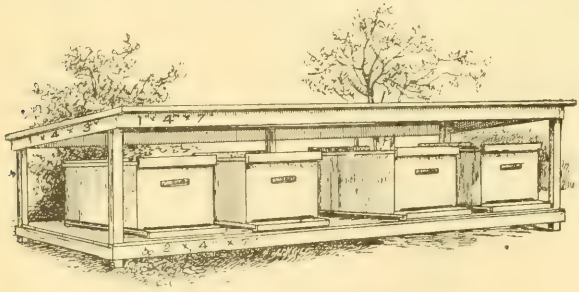
of me I can not see why any one should prefer a section-holder to a simple slat. I am not bothered any to speak of by slats sagging. If they should show any signs of doing so I just turn them the other side up for a few times.

SPRING MANAGEMENT.

In the spring or early summer, just before the alfalfa comes into bloom, I set a clean bottom-board beside one of my hives, separate the two sections of the brood-chamber, put the top one on the new bottom-board, lift off the cover, and put it on the section of the brood-chamber yet on the old bottom-board; then I set this section on top of that which I had placed on the clean bottom-board; lift up the old bottom-board and clean it well, and, lastly, set the hive just where it stood before. This shift I make through the entire apiary, as it disarranges the brood and leaves a space free of brood in the center of the hive with brood both above and below it. The queen will hustle to fill up the gap with brood, and by the time the honey-flow comes the bees go to storing in the super more readily, make stronger colonies to work during the flow; and, if we give them room enough in supers to store surplus they will, I believe, yield a better income to the bee-keeper. I consider the ease of making this spring interchange of the brood-chambers a great advantage of the divisible hive, to say nothing of the gain of having the combs in the frames built solid to the bottom-bars as a result of the change or the well-known advantages of handling hives rather than frames in working among the bees.

HIVE-STANDS.

I have my hives set on stands 7 feet long, each stand accommodating four hives. The following is a diagram of one of these stands:




WAGGONER'S HIVE-SHED.

The hives are set in two pairs with a space between each of the pairs the width of a hive. This is convenient when making the spring interchange of brood-chambers above mentioned. The 2×4-inch sills on which the hives rest are 1½ and 2 inches from the ground, the rear sill being the highest. The roofs of the stands are made of light ½-inch boards, and are high enough above the hives to allow of necessary tiering up and easy handling of supers.

As a convenience in hiving swarms which cluster 8 to 10 feet above the ground I use a ladder, a diagram of which is shown on next page.

This ladder can be set under the cluster with the legs spread to suit, the hive set on the platform at the top of the ladder, the bees shaken down on the hive with cover off; and when the bees are almost all in, or when one wishes to carry the hive to its permanent stand, he can spread the legs of the ladder so as to lower the platform and allow him to lift the hive off easily. The platform remains level, no matter how much the legs are spread. The ladder can be folded up just like an ordinary step-ladder. The legs are sawed out of 2×6-inch stuff, 3½ inches wide at one end and 2½ at the other. A season's use of this ladder has proved it to be a great convenience.

PREVENTING PARTLY FILLED SECTIONS.

Toward the close of the honey-flow, in order to have as few partly filled sections as possible I use dummy boxes as long as the super is inside, and as wide as the super is deep. These boxes are made as deep as the width of one or two rows of sections, including separators. I place one of these, either the one or two row size, on each side of the super with the open part of the box close against the side of the super, and put the partly filled sections, if I have any, over the center of the hive where they will have the best chance of being finished up and capped over. I described these in Gleanings some months ago.

AN IMPROVEMENT IN BEE-ESCAPE BOARDS.

When I take off honey I use the Porter escape with two very narrow strips tacked on the upper surface of the board, one end of each strip being at the edge of the hole in the escape and the other at the rim on the side of the board. The little strips guide the bees to the escape, and the super is cleared of bees in about two-thirds the time it would be without them.

Some time ago I mentioned this in Gleanings, and Dr. Miller in his notes said it would be better to have *four* strips leading, one from each corner of the rim to the hole in the escape. With all respect to the opinions of an expert like Dr. Miller I will tell why I prefer my way. First, the more ends of little sticks you have around the hole, even though they be narrow, the less room there is for the bees to get down into the hole. A steady stream of bees going to the hole, and plenty of room to get down into the hole, is what we want. We want to avoid a jam of bees at the hole the same as we would a jam of schoolchildren at the head of a stairway in case of an alarm of fire. Second, just notice bees follow around the rim where the strips reach from the four corners of the escape-board to the hole. When they come to the *acute angle* made by the rim and the little strip they will back out, turn around, and go back the way they came, instead of going to the hole in

the escape; whereas if the angle is a right angle they will be more likely to turn the square corner and follow the strip to the hole.

If you don't believe this, just fix a strip at an acute angle and one at a right angle against the side of a window-light or screen where bees are trying to get out, and watch their movements. Third, the distance in an ordinary eight-frame Dovetailed hive from the center of the rim at the end of the board around to the center of the rim at the side, and thence to the hole in the escape, is 20⅝ inches. The distance from the center of the rim at the side to the corner and thence direct to the hole is 19½ inches. These are the longest distances bees would have to travel in following the rim and strips as guides in the two plans of arranging the strips in order to reach the hole. So the only gain in distance of travel by Dr. Miller's plan would be at best 1⅛ inches—not enough to compensate for the other disadvantages.

A CONVENIENT STEP LADDER TO BE USED AT SWARMING TIME.

### HOW TO GET THE FILLED SECTIONS OUT OF A SUPER.

When I wish to empty a super full of honey I first, if necessary, run a sharp thin caseknife blade around between the sections (or section-holders if one uses them) and the super-shell. Then I take out the wedges or springs. I next set the super on a box turned bottom side up and placed on the workbench or a table. The box is 5¾ inches deep, 15¾ long, and 11½ wide, all outside measure, being one inch deeper, 1¼ shorter, and ⅝ narrower than the inside measure of the super. Next I tap sharply with a hammer or mallet on the corners of the super-shell until it is loose, and then shove it down on the table, leaving the entire contents of the super resting on the box up above the super-shell, where I can pick off the separators and sections with the greatest ease. It is much easier to pick sections off from simple slats than out of section-holders. Try this scheme of emptying supers for the sake of convenience and good temper.

I market my honey cased in the neatest style, within 30 miles of home. One large town of 4000 inhabitants, situated on the high divide, where alfalfa does not succeed as a crop, takes a large share of my surplus. I have little showcases made with molded top and base, stained a walnut color, and varnished, which hold either six sections in two tiers or four sections in one tier, displayed through three-inch glass. These filled with honey are to stand on a counter or on top of a large showcase in a store to attract customers, and let them know that the merchant has choice honey in cases back on the shelves to sell. The little showcases cost 25 cents each, and help the merchant and myself to make sales.

### THE BEE-KEEPERS WHO HAVE FAILED.

I am no professional bee-keeper, only an amateur. There have been many of my neighbors who have started keeping bees here in the last ten years, and are now out (or as good as out) of the business. I wish to impress on those who think that about all a bee-keeper has to do in a year is to hive swarms and put on and take off supers, while the bees will take care of themselves and do all the rest, that they will be disappointed if they attempt to do business on that basis. I know of no employment which requires a man to be a natural mechanic, to be resourceful, to take advantage of little things to prevent even small losses, to be everlastingly watching the little things and doing the right thing at the right time, more than bee-keeping, if one expects to realize a fair profit. I have stayed with it, and have found a reasonable profit and much pleasure in running a small apiary.

Stamford, Neb.

[Unless the apiary were in an orchard of small trees so that all swarms would be rather near the ground, we should think an ordinary covered basket or swarm-catcher on the end of a pole would be handier. The pole could be propped up to bring the basket at any height; and when the bees are clustered they can be taken to the hive.—Ed.]

# ARE BEES REFLEX MACHINES?

## Experimental Contribution to the Natural History of the Honey-bee by H. v. Buttel-Reepen, Ph. D. Translated by Mary H. Geisler.

*Continued from Feb. 15th issue.*

### THE MEANS OF COMMUNICATION IN BEES.

According to Bethe, there is not "the slightest doubt" that bees recognize each other or hive strangers only by odor (chemical substance), and that no special means, neither a "sound" nor a "definite movement of the antennæ," comes into question as possibilities for communication.[42]

Long-continued and careful observations, however, yield many data which do not coincide with this view.

#### INVESTIGATIONS WITH COLONIES FROM WHICH THE QUEENS ARE TAKEN.

If the queen is taken from a very strong colony of 50,000 to 60,000 bees or more, the loss is first noticed sometimes after an hour, sometimes after many hours. This is particularly the case if the removal is made during a rich honey-flow when the bees are busily occupied with bringing in and storing the nectar. A striking change then suddenly takes place; the comfortable humming gives way to a louder, long-drawn-out, lamenting buzz.[43] The guards at the entrance and those providing the ventilation become uneasy; excited bees come out of the hive and run over it as if seeking something; single bees fly away quickly, then back; the whole character of the colony is changed, not only in outward behavior but also in inner disposition. They are very irritable, and inclined to sting. I have sometimes noticed the queenlessness of colonies, which usually were very gentle, by the increased desire to sting. Such notice is, of course, possible only to one who is used to working without veil or gloves.

If the door[44] of a queenless colony is opened, the same agitation is seen in the interior, and smoke blown in only increases the buzzing. This excitement over the loss of a queen often appears very soon after her removal, particularly when there is no forage or if the colony is weak.

The difficult question now arises, how bees notice the absence of the queen and how they communicate this loss. Is it the sudden absence of her odor? Hardly, at least not in all cases, for we have seen in a previous paragraph that the odor of the queen is exceedingly adherent, and therefore the walls, as well as the bees, must be impregnated with it. But the intensity is gradually becoming less. However, this odor is variable in the customary course of events,[45] and so no uneasiness of any kind arises on this account. Furthermore, how does it happen that the bees *suddenly* become agitated after the queen has been taken out sometimes for an hour or more?

If Bethe is right, that the means of communication depend upon the outflow of some chemical, then the above observations would prove at least that the odor of the queen is a very dominant one in the colony. The queen then does not, as Bethe declares, take on the hive substance, but just the opposite happens; the queen influences the hive odor

[42] Bethe, l. c., p. 70.

[43] That "agitated bees" constantly "buzz" is a misleading expression of Bethe's. Particularly can the humming with raised abdomens and fanning wings upon the flight-board be sharply distinguished by the trained ear from what is usually called the "buzzing" of bees, by the pitch.

[44] Reference is here made to the German style of hive with a door in the rear. The American style of hive opening at the top is little used in that country.—E. F. P.

[45] If the queen gets into the honey-chamber, which is generally separated from the brood-chamber beneath by a strong piece of board with slits in for the passage of workers, and if she there continues to lay eggs, it is clear that her odor must soon be lost to the bees beneath. This is especially true if there is an entrance into the honey-chamber. Under these circumstances, however, excitement at the queen's absence never breaks out; at most the "isolated" bees after a few days occasionally build queen-cells, but more often not.

considerably, or at least a mutual scenting takes place. On the other hand, if we agree with Bethe in his statement that the queen takes up the hive substance of the colony, the means of communication must depend, not upon reflexes of smell alone, because the colony odor would not be influenced by the removal of the queen.

If we were to ask bee-keepers their opinion in this matter, they would probably answer that the young bees which care for the feeding of the brood and the queen, "miss" the latter after a longer or shorter period, and begin to seek her diligently, communicating their anxiety to the whole colony until the "conviction" that the queen is gone comes into consciousness, when the comfortable humming changes to a loud buzz.

But since the young bees, as all bee-keepers know, can be taken away very well with the queen it naturally follows that they take no very important part in this matter. Then the old bees will begin the loud buzzing.

One can, however, ingeniously gather a colony of old workers and place within it a queen enclosed in a cage. The excited colony is quieted as if by magic. The hostile bees next to the cage begin to lift their abdomens, fanning their wings,[46] with a characteristic humming. This hum is taken up by other bees, and suddenly there is peaceful quiet.

Before we formulate conclusions from the foregoing let me communicate further observations.

The following experience is interesting, and proves that the feeding of the queen as one of the chief phenomena of life needs not to be taken into consideration in the breaking-out of the agitation over the loss of a queen, apart from the odor.

In bringing in a first swarm, I crushed the queen by accident. Since I could not care for it on that day nor the next, and I did not have another queen at my disposal to substitute, I knew that the swarm would certainly fly out again and join the mother colony. To prevent this, I arranged the following experiment: I fastened the dead queen with a needle to a piece of cork and hung it in the cluster of bees. The colony remained quiet, and I knew later on that it had felt entirely queen-right because the comb which it made showed no drone-cells, and the dead queen was surrounded by licking bees.[47] How long a dead queen can supply the place of a living one I am not able to tell.

However, even a dead queen may be dispensed with. In order to do this, I put a weak colony into swarming condition—that is, took away all combs so that the agitation could be more quickly observed. The queen was put into a cage. The next day I took the cage out of the colony, and very soon I noticed the typical signs of queenlessness. When the excitement seemed to have reached its height I opened the glass door and held the cage, from which the queen had been quickly taken, in the midst of the bees. Immediately it was surrounded by many "joyful" bees with lifted abdomens, fanning with their wings, and the buzzing ceased. Here we have conclusive proof that the odor of the queen is enough to satisfy all the instincts which appear unsatisfied during the excitement over the absence of the queen.

The conclusion may easily be drawn that, if the weak odor adhering to the queen-cage causes a cessation of the agitation, and certainly it is the odor alone, the disappearance or weakening of the same causes the outbreak of the uneasiness. But this deduction does not seem conclusive to me; for, as I have said above, the odor does not disappear with the removal of the queen, but is, however, weakened; and if the colony is vigorous, and their instincts are diverted by a rich honey-flow, the bees notice the loss only after some time has passed. But in the case of the sudden outbreak of uneasiness over the absence of a queen, we have to do with an intensified instinct, for which the shadowy memories in actual requirement are sufficient for the needs of the case, if I may so

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[46] In the original, the author characterizes this peculiar humming as "sterzeln." This he describes in a footnote as follows:

"By 'sterzeln' is meant that characteristic raising of the abdomen, accompanied by a slow whirring of the wings, which indicates joy. Therefore it is seen in the above case, or when they discover the hive after going astray, but never on finding a honey supply, even if very hungry. This is similar to what I might call the attitude of fright. If the finger is approached to the entrance of a hive, single bees guarding the passage are seen to hasten toward the hostile object, raising their abdomens in threatening manner, and they remain in this position."

[47] A queenless colony will erect drone-cells if it builds at all.

express it. Thus bees in the spring, impelled by necessity in a region where there is little pollen, will gather the dust from thrashing, coal dust, or brick dust, instead of the lacking pollen. Once I observed bees collecting even sawdust. It is just as little permissible to draw from this the conclusion that brick dust is equivalent to pollen, because bees react in the same way toward both, as it is to conclude that it is the missing odor alone which causes agitation in a stock, because the bees are satisfied with the remembered odor in place of the real queen. We shall have better proof further on.

BEHAVIOR OF A QUEENLESS SWARM.

As a first swarm was issuing I caught the queen at the entrance of the hive. Now instead, as happens in most cases, of the swarm returning to the hive after the vainly searching circling, the bees hung to a branch united in the well-known cluster. Since no alarm was shown, I took it for granted that a second queen had swarmed with them; but a prompt examination of the hive revealed no queen-cells from which a young queen could have emerged. The swarm was perfectly quiet for over half an hour, then suddenly broke up and went back to the hive—a certain proof that it was queenless. In this case, then, there was a considerable time between the removal of the queen and the breaking-out of the uneasiness over her absence. It was evidently not the disappearance of the odor of the queen that caused the discontent, for the odor was lacking from the beginning. Queenless swarms rarely take place; and if they do, they do not settle and disband again: they miss the queen immediately. Coming out into the open air, the odor of the queen seems to be of little value. This is evident from the fact that if one keeps a caged queen in a circling swarm, it has to remain there for a long time before she is scented by the bees, if she becomes scented at all. But if a bee once places itself upon the cage, "joyously" lifting the abdomen, and humming, then it is not long before the rest are attracted by the sound of the "satisfied" hum. I might, incidentally, mention that there is a so-called "diamond rule" among bee-keepers. This rule is that the queen is to be enclosed in a cage for a short time before and during a rich honey-flow in order to hinder her from laying eggs. The bees then will have little brood to care for; the consumption will be diminished, and the honey store should increase. This, however, frequently does not take place, because the normal condition of the colony is disturbed. The colony often believes itself queenless and builds queen-cells in spite of the imprisoned queen in the middle of the colony; but this phenomenon does not appear in all colonies.[48] Apparently there is here, as has been demonstrated before, an unsatisfied feeding instinct. The nurses can not distribute the richly prepared larval food, and so the impulse is generated to remove the abnormal condition by building queen-cells. I can imagine this as an example of a clear reflex. There is no need whatever for "reasoning" of any kind.

I shall now return to the very vigorous colony mentioned before. If the queen is taken away from such a colony, which compactly filled the brood-chamber and honey-chamber in a large hive, the signs of uneasiness over the absence of the queen will go on as described. When the colony is in greatest excitement, a cage containing a queen may be pushed into the honey-chamber in the upper part of the hive which opens from behind, and then the condition of the bees at the entrance at the opposite end of the hive underneath in the brood-chamber may be observed. Almost at once a change in the behavior of the uneasy bees is apparent; the buzzing dies out in the hive, and the bees, searching around at the entrance, enter with lifted abdomens and fanning wings.

The explanation can here certainly not be the influence of odor, since the odor of the queen could not penetrate in an instant to the entrance which is separated from the honey-chamber by the whole of the brood-chamber. If the extraordinary penetrating odor of female insects be cited, as, for example, that of the moths (sphinx, etc.), then I would reply by referring to the disregard of an imprisoned queen in a swarm.

[48] It is curious that queen-cells are also established if the queen is decrepit. If, therefore, queen-cells are found, and at such a time either strongly defective brood or drone brood in worker-cells (on account of and at such a time either strongly defective brood or drone brood in worker-cells (on account of the the exhaustion of the supply of sperm-cells), then one can be sure that the old queen will shortly disappear from the hive. Perhaps the same instinct is active here as in the case of an imprisoned queen (see footnote, p. 11).

DISREGARD OF A QUEEN IN OPEN AIR.

In order to demonstrate this question still further I hung a cage containing a queen on a stick and stuck this into the ground so that the cage was at the same height as the hive entrance, about thirty-five centimeters to one side of the flight-board. None of the numerous bees flying in and out scented the queen, which remained entirely unnoticed while the colony continued agitated.

HEARING CAPACITY AND SENSATIONS OF SOUND.

If we now conclude from the foregoing observations in what way the discontent because of the absence of the queen, as well as the content because of her presence, is communicated, and what the means of communication are, we must conclude that the odor is not the only factor. We have been able, on the one hand, to determine with reasonable certainty that, if the odor were sufficient to inform the colony of the presence or absence of the queen, no other special kind of communication need be used; on the other hand, we saw indications of discontent (for example, the building of queen-cells) among bees when a queen was present in a cage. So we see signs of peace or agitation in cases where the influence of odor seems completely excluded. In all observations, when the colony notices the absence of the queen there is always a change in the usual characteristic sound in the hive, the bustle of the colony, if I may so express it.

There is, therefore, not the slightest doubt in my mind that bees communicate with each other by sound. The tone of "peace" attracts hive mates or quiets them; the louder buzzing excites them: it disappears if the queen is given back. At the same time the whole character of the colony changes,[49] the queenless irritable bees become quiet and peaceful, and again take up their work, which was laid aside during the excitement. We must admit the possibility of communication between bees by sound, therefore of hearing capacity and sound sensations.[50] Each bee has the instinct to join in the tone of discontent if it hears it; therefore if the absence of the queen is noticed by one bee the agitation is very quickly propagated throughout the colony.

How the first notice of the lack of a queen takes place is naturally, as before stated, very difficult to determine—perhaps there are several possibilities. Often the absence of the queen odor may bring about the result; it may be the absence of the characteristic humming described, which the bees occupied with the queen produce. Further, it is possible that the queen herself makes sounds, the absence of which is noticed. I have never heard such a humming, but it is not impossible that such tones, not perceptible to the human ear, exist.

EXPERIMENTS ON SWARMS.

The following observations will show to what a great extent the means of communication between bees depend upon sound perceptions. The loud buzzing of swarms is readily distinguished from the usual hum by anybody who has been occupied with bees for any length of time. The swarm presses out from the hive in impetuous haste in the peculiar swarm dance; it surges and whirls in "bacchanal delight," as if the bees were really drunk with "joy." The "swarm dizziness," as bee-keepers say, has seized it. In this dizziness it forgets everything connected with the old dwelling, and bees even forget to sting.

"Swarming bees do not sting" is an old bee-keepers' saying. From this we get the old fable that bees recognize the bee-master, because, generally, outsiders approach a bee-hive only to see the interesting spectacle of a swarm, and then notice the bee-keeper,

[49] Careful observation will show that every colony has its particular character, which is determined in part by the strength of the colony. On the other hand, we often see what are apparently great differences in colonies of like strength. One colony is gentle; another constantly desires to sting. One defends its hive entrance carefully; another almost not at all, although it is a strong colony. One flies constantly earlier than its neighbor, etc. Lubbock and Herman Müller have shown that individual bees vary also. (Herm Müller, "Versuche über Farbenliebhaberei der Honigbiene," Kosmos, Jahrg. 6; Lubbock, "Ants, Bees, and Wasps," German translation published in Leipzig, 1883, English edition in the International Scientific Series, New York, 1883.)

[50] In the attraction of a queenless colony into the hive of a queen-right one, then, perhaps in the first place the hearing capacity comes into question (see p. 5), the sound of the contented humming acts as a powerful stimulus and causes the migration.

often quite unprotected, quiet and composed, stand in the middle of the tumult without being stung.

The "Deutsche Bienenfreund," 1894, reports the following: "A boy about ten years old was standing near a hive, bare-headed and shirtsleeved, when a swarm issued. After flying here and there, the queen alighted on the boy's head, and thousands of bees quickly followed. The boy's father, recognizing immediately the state of affairs, called to him hastily (he had often looked on during the catching of a swarm), 'Do not move, Hans. Shut your mouth and eyes, and breathe through your nose. I will sprinkle and capture them!' The boy obeyed, the father poured water over his head, bent it forward, and with a feather stroked the whole swarm into a basket underneath. The boy had not a single sting."

After my own experiences, I consider this tale entirely trustworthy.

In 1893, "Studers ill. Schweizer. Bienenfreund" showed the picture of a young bee-keeper who had been photographed with a swarm which hung down from his hand. In the issue of the swarm he caught the queen with his fingers, thus causing the swarm to surround his hand. When the photograph was completed, three-quarters of an hour had elapsed, which was endured very quietly, the arm being supported with a stick. Head and hands were not stung. Similar pictures have been published in "Gleanings in Bee Culture" during the last few years.

It is not in contradiction to the above to say that most disasters are caused by swarming bees, for nervous blows or accidental crushing irritates the swarming bees; and first one sting, then hundreds follow, excited by the strong odor of the poison.

Shortly before the issuing of the swarm, single bees are seen coming out with uneasy motion; they press through the bees around the entrance, which often cling closely together like a long "beard" hanging from the flight-board. It can hardly be doubted that sounds of some kind perhaps serve here for communication—sounds lost to the human ear in the general hum;[51] at least there is no more plausible explanation for the peculiar result, for suddenly the "beard" loosens, the bees enter the hive quickly, assail the honey stores, and fill their honey-sacs. All the others desiring to swarm do the same thing, and suddenly the swarm breaks forth. Those just returning from the fields heavily laden with pollen are involved in the tumult, infected with the sound of swarming, and fly with the swarm.

### THE INFECTING INFLUENCE OF THE SWARM TONE.

That the sound made in swarming, which is given only in flight, is infectious is well known; for now and then it happens that the neighboring colony, though not nearly ready to swarm, will follow the swarm-tone and swing into the air. If two swarms issue at the same time, they mutually attract each other and unite.

That we have here to do with a chemical reflex, as is thought by Bethe, who, strangely enough, does not take swarming into consideration, seems improbable to me. If the rich possibilities for sound communication between bees are borne in mind, it is evident that this capacity must have some object, and that it is not practicable to ignore these data.

### THE ENTICING NOTE OF BEES.

If a swarm is shaken out on a sheet spread over the grass, and a hive never before used is placed, for instance, on the north side of the sheet, it will remain unnoticed if it has not come in direct contact with the swarm. But if a handful is scooped up and thrown at the entrance, they will immediately draw near with specially loud humming, part standing outside, however, on the flight-board with lifted abdomens and wings fanning. All the other bees near by turn, if they have been facing away from the hive, and follow the alluring sound, lifting their abdomens and fanning with their wings. More keep following, and a broad band march into the dwelling. If now the hive is taken away and placed on the south side, the bees quickly march on further north, but for only a short time. Then the increase of the attracting note from the south causes a gradual turning

[51] Movements of the antennæ should certainly be considered, since the play of the antennæ is always lively, and often a mutual touching takes place.

of the stream, which enters the hive little by little. It may happen that a little cluster of bees advances firmly northward, although many mates turn toward the south. The alluring tone does not seem to penetrate further; they heard it coming from the north and follow the memory. There seems to be no other explanation for this course. In my opinion the fact that not only a single bee but plenty of them, a small custer, follows this memory is a proof of the impulse for imitation which is undoubtedly present in bees for it is not likely that every bee in the small cluster has this memory but perhaps only a few of them. The others follow only on account of this impulse for imitation. If the first bees remain true to the direction, then a great number will turn quickly with them.

It must really seem strange, to any one familiar with the natural history of the bee, that there can be any doubt as to the possibility of communication through sound when the whole life of a bee is one continuous humming, if I may so express it. Can this "audible speaking" have no purpose? Only the dead bee is quiet.[54]

If the previous assertions are not convincing, we may find proof of their capacity for hearing in the following:

THE "TEETING" AND "QUAHKING" OF THE QUEEN.[55]

When the first swarm has issued with the old queen, normally nine or ten days pass before the after-swarm follows. One or two days before the swarming, a strange concert may be heard in the hive on a quiet evening at a distance of a couple of steps. It is the "teeting" and "quahking" of the young queen. As is well known, the old queen, before her exit, lays eggs in the queen-cells at intervals every day or so; the consequence is, that the young queens do not all emerge at once.

The first queen to emerge falls upon the other queen-cells in order to kill her rivals. If the colony wishes to swarm, however, the workers prevent this destruction, and the queen begins to "teet" in "jealousy." She presses her head against the comb, as I have observed, and sounds a clear, ringing, long-continued "teet, teet," apparently using the stigmata on the thorax. Immediately the most mature of the queens still in the cells answers with a short deep "quahk, quahk." Thus this interchanging goes on for hours or days with shorter or longer interruptions. If rainy weather prevents the issuing of the swarm, and more queens mature, they "quahk" likewise. They "dare" not emerge as long as the "teeting" goes on; and since they need nourishment they cut a little slit with their mandibles, through which they stick their probosces, and so are fed by the workers.

It would lead me too far to go further into these interesting circumstances.

If we can prove from the above an undoubted capacity for hearing, we can also from the following experiment:

THE QUEEN'S TONE OF FEAR.

If a strange queen is put into a queenless colony by merely allowing her to run in upon a comb, then the bees nearest her fall upon her and bite her legs or ride upon her to sting her. The powerful queen runs quickly away from her persecutors, but she is continually seized by others. Now in her "fear" she utters loud cries which throw the whole colony into excitement. One could here conjecture the influence of odor; but a strange queen in a cage does not cause such excitement, especially not if the colony is queenless. It is doubtless the tones of fear which stir up the whole colony. We have here again an unmistakable reaction toward sound-sensations.

The attempt might be made to weaken these assertions, so far as they apply to the existence of hearing capacity, by pointing out that no one has yet succeeded in showing in insects a reaction toward sounds artificially produced. Then I would call to notice that recently an American has obtained undoubted reactions toward the notes of tuning-forks in two members of the Formicidæ[56] (*Lasius Americanus* and *Formica nitidiventris*)

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[54] 1. Ernst Haeckel, Die Welträtsel, Bonn, 1899, p. 145.

[54] 2. Now and then the colonies settle down in their winter sleep into a condition of complete quiet, but usually it is accompanied by a hardly audible murmur.

[55] It is, of course, very difficult to represent these sounds in words; but the ones here given are often used in English to represent them. No bee-keeper will have any difficulty in knowing what is meant. The author represents them in German by the words "Tüten" and "Quaken."—E. F. P.

[56] Science (The Sense of Hearing in Ants), No. 5, Vol. X., No. 256, 1899. See also my Conclusion

and in two Myrmicidæ (*Crematogaster lineolata,* and a kind of Aphœnogaster). The well-known myrmecologist William Morton Wheeler has meanwhile published in an important paper (Ethological Observations on an American Ant, Journal für Psychologie und Neurologie, Bd. II., Heft 1 u. 2, Berlin, 1903), his investigations on hearing in ants. He writes as follows:

"Stridulation, at least among the Myrmicinæ, Ponerinæ, and Dorylinæ, is an important means of communication, which Bethe has completely ignored, and even Forel and other myrmecologists have failed to appreciate. It readily explains the rapid congregation of ants (Myrmicinæ) on any particle of food which one of their number may have found, for the excitement of finding food almost invariably causes an ant to stridulate and thus attract other ants in the vicinity. It also explains the rapid spread of a desire to defend the colony when the nest is disturbed. This is especially noticeable in species of *Pheidole, Myrmica,* and *Pogonomyrmex.* It is the secret of being able in a short time to catch ants like *Pogonomyrmex molefaciens* in great numbers by simply burying a wide-mouthed bottle up to its neck in the mound of the nest. An ant approaches and falls into the bottle. It endeavors to get out, and, failing, begins to stridulate. This at once attracts other ants which hurry over the rim and forthwith swell the stridulatory chorus till it is audible even to the human ear. More ants are attracted, and soon the bottle is filled. If it be corked and shaken for the purpose of still further exciting its contents, and then held over another *Pogonomyrmex* colony whose members are peacefully sauntering about on the dome of their nest, the wildest excitement will suddenly prevail, as if there had been a call to arms or—to dinner. Even more remarkable is the stridulation in a colony of *Atta fervens,* the Texan leaf-cutting ant. Here the different ants, from the huge females through the males, large soldiers and diminishing casts of workers to the tiny minims, present a sliding scale of audibility. The rasping stridulation of the queen can be heard when the insect is held a foot or more from the ear; to be audible the male and soldier must be held somewhat closer, the largest workers still closer; whereas the smaller workers and minims, though stridulating, as may be seen from the movements of the gaster on the postpetiole, are quite inaudible to the human ear. It is not at all improbable that all this differentiation in pitch, correlated as it is with a differentiation in the size and functions of the various members of the colony, is a very important factor in the coöperation of these insects, and of ants in general. The contact-odor sense, important as it undoubtedly is, must obviously have its limitations in the dark subterranean cavities in which the ants spend so much of their time, especially when the nests are very extensive like those of *Atta.* Under such conditions stridulation and hearing must be of great service in maintaining the integrity of the colony and its excavations. The fact that as yet no unquestionable auditory organs have been discovered in ants is of secondary importance when it can be so easily shown that these insects really respond in an adaptive manner to the sounds produced by other members of the colony."

I know very well that Miss Adele M. Fielde and George H. Parker are of the opinion (The Reactions of Ants to Material Vibrations, Proc. Acad. Nat. Sc., Philadelphia, Sept., 1904) that "it is misleading to ascribe or deny hearing to ants; they are very sensitive to the vibrations of solids, not to those of air; their reactions could be as appropriately described as resulting from touch as from hearing." But the above investigations on bees have been neglected by these authors, and I am still of the opinion that a sensitiveness to the vibrations of air can not be denied so far as bees are concerned, and the above experiments of Wheeler seem to show the same in ants.

To be continued.

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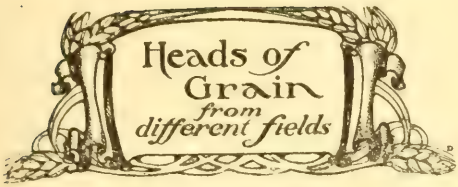


SWARM CONTROL.

I operate a few hives for the love of it, and for comb honey. The honey surplus is from alfalfa and sweet clover. The season extends from the middle of June to the middle of October, being most important from July 1 up to and perhaps a little beyond Sept. 1.

What results might I look for from the following method?

1. Put full body hive over the old hive and brood-nest with excluder between. When the honey-flow is well started shake all bees into the upper part; set the old brood-nest to one side, and, by changing back and forth, incorporate its bees with those in the new body. I do not wish for increase. Would this method, practiced, say about June 20 to July 1, be likely to stave off any further swarming?

2. How would it work to proceed as above, except to put the old brood-nest, after shaking, on top of the new, and its superimposed section-frames, using a Porter bee-escape between the old brood-nest and the topmost section? Leave this on until the young bees had hatched and passed down to become a part of the colony below?

3. What results would likely come from the following method? Place the old queen with proper frames in the upper hive; place a queen-excluder between the two; stop the old entrance, and make a new one between the two hive bodies. Place over the queen-excluder a suitable, heavy, flat, close-fitting cloth, except a small section cut out at the rear of the cloth, 1½ inches square, at which point the queen-excluder should permit of the bees freely passing to the upper body and to the exit from that body to the outside. Would the bees thus gradually abandon the lower hive, and become part of the colony working from the new entrance and storing in the sections, which have, of course, been superimposed? Would it work to use the Porter bee-escape between the lower and the upper body, and so slowly empty the lower body?

I have two box hives. Rather than transpose the bees to frame hives I thought of forming nuclei in a full-size frame hive, placing the hive between the two box hives, and, about the time they are threatening to swarm, leave the box hives and remove to another place, thus throwing the field force of both these queens to the nucleus.

I can repeat this, either in the same way or to bring strength in bees to where it may be most valuable—perhaps twice more before the flow is ended.

May not these queens so kept at work, and utilizing all their field force, be made quite as effective in producing honey as if I transferred, and the breeding-space of the box hives, which it costs nothing to preserve, is absolutely lost?

There is a plan, originated, I believe, by a Mr. Dudley, of this State, by which, in a situation as described in 3 above, he uses a tin tube on the outside, up which the bees from the lower body pass to the entrance between the two hives, this being their only egress inside or out. Then bees do not find their way back, but at once take up work at the upper entrance, and in behalf of the upper colony. Why is this cumbrous method any better than the use of the Porter bee-escape placed inside, allowing the lower hive to empty slowly into the upper with no possible return? I should very much like to hear Dr. Miller's comments on these plans.

Could I introduce a new queen by using her in plan 3, placed on one or two frames of young bees from the lower brood-nest instead of the old queen, keeping the latter below until I have secured the most of the strength from that brood-nest and am ready to get rid of the old queen?

PHILIP B. STEWART.

Colorado Springs, Col.

[The various plans of swarm control you propose have all been tried. There are two objections. First, they call for too much work; second, they do not always succeed, and are, therefore, risky. I would suggest that you follow Dr. Miller's book, "Forty Years Among the Bees," very closely. The Dudley tube is an adaptation of Langdon's device on the entrance, and I imagine it will not last long.

My experience with comb honey leads me to say that certain points are very important, and need to be emphasized.

1. Good shade; 2. Plenty of air current during hot weather; 3. A space below the frames for the bees to cluster; 4. As few "contraptions" in the hive and supers as possible; 5 Young queens.

Let the box hives swarm once. Fifteen days afterward, drive all the bees out and add them to the swarm, killing all the virgin queens. What is left is empty comb, fit only for the wax-extractor.

The nearer you make a comb-honey hive like an extracted, the better it will work. There is no royal road to comb-honey production, and plans have to be modified to suit seasons and localities —W. K. M.]

CAN UNFINISHED SECTIONS BE USED FOR EARLY SPRING FEEDING?

I was intending to ask you the advisability of putting in unfinished sections early for feed; but I see in the Jan. 15th GLEANINGS, p. 83, its disadvantages as well as advantages. I should like to know if I should put a few in each hive early in April, even before any pollen is to be found, if the bees would take the hint and use it for feed. To prevent the cooling of the hives I think there would be room to put back the cushions on

top of the super containing the unfinished sections, as I use the large chaff hives.

AMELIA J. CULVER.

Mt. Lebanon, N. Y.

[The bees might or might not take the honey out of the sections and use the same for brood-rearing. A good deal would depend upon circumstances. The sections should be so given as not to leave a lot of empty space for the bees to warm up. Your proposal to put back the cushions is correct in theory and practice.—ED.]

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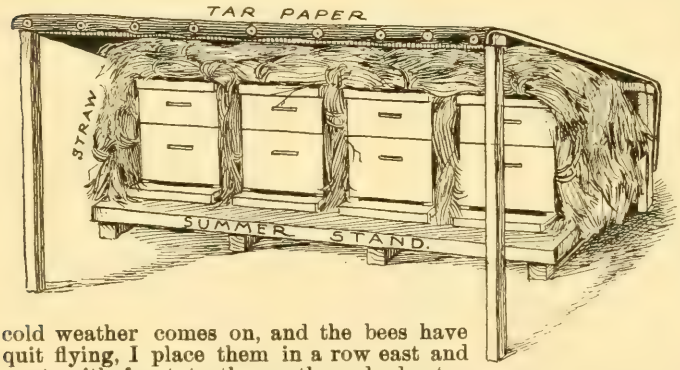
### HOW TO PACK A FEW COLONIES OF BEES FOR THE WINTER.

Many small bee-keepers having from one to a dozen colonies allow them to remain on the stand all winter without any protection, and in the spring wonder why so many of the bees died. A plan by which their bees can be wintered safer and cheaper outdoors than if placed in a cellar is this: After the honey season is over, and the supers have been emptied and cleaned, I place them back again on the hives with the section slats left in. I do this early enough—about the last of October—that the bees may have time to wax things down tight between the edges of the super and brood-chamber. When very




cold weather comes on, and the bees have quit flying, I place them in a row east and west, with front to the south, and about a foot apart. I now fill each super full of old rags, pieces of burlap, or even torn-up newspapers, finishing with a quilt of burlap, and on this I place the cover proper, snug and tight. The straw (prairie hay is better) is then packed in between tight to the top of the hive and over all and behind; and at the ends I put the straw three feet deep, finishing with a cover of tar-paper tacked to two 2×4's or scantlings the desired length, one placed in front, the other back, with slope enough to carry off water, and thus keep the packing dry. I leave the bees as they are, quite late in the spring until rains and cold chilly days gives way to warm settled weather. I then remove the winter protection and space the hives a proper distance apart again. I might also add that I place a board in front on sunshiny days to prevent bees from flying out and perishing. The engraving may help to explain my plan.

Tecumseh, Neb. CYRUS DOUGLAS.

[This shed would be better if the bees were made to enter on the lower (or opposite) side of it. This leaves the high side for the apiarist, so that he can handle the hives from behind instead of in front.—W. K. M.]

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### TESTING THE WEIGHT OF HIVES IN SPRING; "HEFTING" NOT A SAFE GUIDE.

On March 20 of last year, when I "hefted" my hives they were fully as heavy as when packed for winter. Imagine my surprise to find them, April 10, at the point of starvation. While there is no doubt that considerable honey was gathered during March, the queens seemed to think that summer had arrived, and that it was time to be up and doing. The result was, hives full of brood, and I had hefted brood instead of honey. This leads me to the conclusion that, while the hefting plan may do in the fall when you know there is little or no brood in the hive, it is not a safe guide in the spring, especially after such winters as the past has been here in the South.

Tupelo, Miss. J. D. ROWAN.

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### POSITION OF CLUSTER IN WINTER SEEN THROUGH A GLASS COVER.

This is the third winter that I have wintered colonies in hives with double glass covers so that I could look in at any time without disturbing the bees or letting the cold air in on them. These colonies are in pairs with only a thin division-board between them; quilts over and around them, and one outer case over all.

The winter cluster does not form near the entrance, as some have said, but in the warmest part of the brood-nest, next to the thin division-board, the top of the cluster being above the brood-frames. There is a half inch space between the brood-frames and glass.

The entrance to these hives is very small—not to exceed one square inch; and I know by actual trial that the entrance can be closed for weeks at a time, and do no harm to the bees if the weather continues cold and the bees remain in that semi-dormant state which is natural for them in winter, with the temperature of the cluster many degrees lower than when active. In this state I am sure they need very little honey, very little air, and they lose very little vitality. But if roused from this state by any cause they must have air or there will be trouble. With an entrance equal to one square inch kept clear, I have found that they are perfectly safe through the winter.

I have always kept a thermometer on top of the double-glass cover of one of these colonies, and this has never shown a temperature lower than 38 degrees, and this with a temperature outside of 12 below zero. In

ordinary weather it indicates a temperature of 42 to 48 degrees. There are two thicknesses of glass and a dead-air space of half an inch between the cluster and thermometer.

I should like to ask Mr. Doolittle how he reconciles these facts with the statement he has made, that "the heat of a cluster is confined within the cluster or crust of bees," and does not warm the space outside of the cluster. O. S. REXFORD.

Winsted, Ct.

[Many reports as well as repeated observations year after year convince us that, early in the winter, the cluster of bees will be found up in front of the hive. As the winter advances and the stores are consumed, the cluster works backward. If you repeat your experiences for a year or more yet, we think you will find what we say is true. We agree exactly with you as to the size of the entrance.—ED.]

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### THE VALUE OF A TWO-INCH SPACE UNDER THE FRAMES.

Twenty-five years ago I worked my bees with an entrance two inches deep, full width of the hive, having special deep rims for all hives having two supers, according to the plan explained by Dr. Miller, p. 290, Mar. 1. After all these years of following the crowd with a half-way compromise that has cost me hundreds of dollars I am going back to the deeper space beneath the frames for strong colonies at all seasons, only contracting the entrance to exclude mice in winter. Dr. Miller should put nothing in to prevent the bees building comb down. For every ounce built below the bottom-bars the bees will store 5 lbs. more surplus in the supers. They will store pollen at the bottom, and go higher up with the honey, owing to their fore-sense of robbery.

While the bees are building any bits of comb beneath they will bring their combs above tight down to the bottom-bars, if only ¼×3×4-inch bars are used. They will not build so much burr-comb with a surplus of wax if the extra space is allowed. The extra wax pays for itself if saved, as thousands of colonies in Cuba are run for wax alone, as they pay better to produce wax than an inferior grade of extracted honey. They are not likely to get the swarming fever, as they do with the pent-up space beneath ordinary hives. More air beneath enables them to stay in a second super in the heat of the day; and the deeper cluster gives more uniform heat for the brood and super above it at all times. F. DANZENBAKER.

Norfolk, Va.

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### DUCKS IN THE APIARY.

On p. 42, Jan. 1, I see your remarks about ducks in an apiary. You say you never experienced any trouble from them. Just sow a patch of white clover in or near your bee-yard, and then let your ducks in and see how they "do" the bees. I had but one stand left over last winter. The rest were winter-killed. The one that came through had a queen which you sent me the year before, but it had only a handful of bees in the spring. It increased fast in the spring, and made preparations for swarming. Just then my young ducks took to the clover and after the bees so that all of them died. They ate the bees so fast that they had to run for water. G. KUNKE.

Panoka, Canada, Jan. 20, 1908.

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### HONEY PASTE FOR STICKING SMALL LABELS TO TIN.

We have been putting up honey in tin cans and buckets, and have tried all kinds of paste for sticking labels to tin (including flour paste as recommended by Mr. W. H. Laws). We had but poor success until we tried mixing a small quantity of honey with our dextrine and vinegar paste, which ended our trouble in that line.

We have been putting up and selling some six to ten tons of extracted honey per year these last few years. We also tried rubbing the buckets with a rag wet with vinegar, as recommended by N. E France; but while it helped somewhat, many of the labels would drop off as soon as dry.

These other pastes might do if a label is used that will go clear around the bucket and even lap over a little; but they will not hold a small label.

Mix dextrine and vinegar to the consistency to suit, then add about 2 oz. of honey to the pint of paste. Don't make the mistake of putting too much honey in or the labels will have a greasy appearance and will not dry right. It requires more honey in a dry atmosphere than in a wet one. Such paste will keep in either a warm or cold climate.

Ebensburg, Pa. F. J. STRITTMATTER.

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### TROUBLE IN MAKING INCREASE.

I have just read an article by Mr. E. W. Alexander, on page 896, on the right way to increase. This matter of increase has been and still is a hard problem for me to solve, I started in to increase 100 colonies, but have lost nearly half the season by their building up so slowly, I had a great many poor and unfertile queens. I am now starting a few nuclei and also the two-queen system with queen-excluders between the hive and cap. I have had a good many years' experience, but have had more trouble with increase this year than ever before. There has been no scarcity of honey at any time, but the queens seem to be slow about laying. My method is exactly the same as Alexander's. Has anybody anything better to offer? R. E. ZIMMERMANN.

Fresno, Cal., Aug. 3, 1907.

[The trouble in your case, we should say, was poor queens. Better queens, or two ordinary queens to the colony, separated by excluders, would obviate your difficulty to a great extent. As you are trying the two-queen plan we shall be glad to have you report.—ED.]

STIMULATIVE FEEDING DURING THE COLD SPRING WEATHER TO KEEP THE HIVES WARM.

My experiments in feeding in spring were of great value, especially in the cold rainy weather we had last spring. I feed with an inverted beer-bottle through a hole in the hive-cover. Just draw a piece of cotton cloth four inches square over the neck of the bottle and insert it in the hole. This keeps the bees active, and they will beep the entire hive warm, and rear all brood without loss; whereas if they have an abundance of sealed honey in combs they become dormant, or nearly so, and cluster. If the inclement weather continues for two or more days, much sealed brood dies; and the first warm day the hive-front will be covered with hundreds of dead bees with the head formed and legs started, while all unsealed brood is eaten as fast as it is exposed to the outside of the cluster. This may seem incredible, but they invariably do so when cold or starving. The queen, if a good one, will lay eggs at all times when there is honey coming in, but not when the honey is stored in the combs.

When we can keep the queen laying, and all brood reared, the problem of strong colonies is easily solved.

Sonora, Cal. A. D. Herold.

[We question very much whether feeding in early spring serves to keep the colony warm because of the stimulation induced. If the weather is chilly enough to keep a colony back, feeding at such a time would only tend to aggravate matters. Of course, if a colony is running very short, and is liable to starve, then if no combs of sealed stores are available one would be obliged to feed.—Ed.]

WATERING BEES IN THE HIVES TO PREVENT THEM FROM FLYING OUT ON CHILLY DAYS FOR WATER.

On page 1498, Dec. 1, Dr. Miller gives us some excellent advice about watering bees. It is my opinion that the most important part of the article is that which relates to the early spring, when the bees are compelled to risk all in order to obtain water for the brood.

I had an Alexander feeder under each hive —some to feed, others to stimulate. There would be times of days in a stretch when the bees would not break cluster to go to the feed at the rear and bottom end of the hive with the prevailing cold winds which swept our prairies.

One fine morning last spring, on going to the tank where the boys were watering their horses, I noticed that the whole surface of the tank was covered with struggling bees drowning in the water. This was not a pleasant sight to behold when fully half of the hives in the apiary were empty and half of the rest were in a weak condition; so I took a pail of water, threw a handful of sugar into it, and gave each colony a pint in the Alexander feeders that were under the hive. In half an hour there were no bees to be seen about the tank. While we may afford to let our bees hustle for their drink during summer time we surely can not afford to do so in early spring. Just slip an Alexander feeder under each hive and give them what they want to drink at home.

Moorland, Ia. J. P. Blunk.

[Attention has been drawn to this before; but it was stated at that time that the moisture from the breath of the bees, condensed on the inside of the hives in chilly weather, would give the bees all the water they would need for brood-rearing. Whether true or not, we should be glad to hear from any one who may have any fact to offer. We are of the opinion that many bees are lost in the spring in the quest outdoors for water when the weather is bad.—Ed.]

QUEENS SUPERSEDED IN WINTER.

I have read in Gleanings that bees would not supersede queens in winter. I am sending you two queens just hatched, and there were several more cells in the colony. The same thing happened last winter in my yard in January. George Grover.

Trenton, N. J., Feb. 11.

[While it is true that supersedure usually does not take place in winter, yet if a failing queen leaves eggs or young brood the bees will raise queen-cells as at other times, providing it be not too cold. If it were severe weather there would, of course, be no eggs In that case the colony, if it survived, would be found queenless in the spring. But if the queen dies the colony is likely to die also.—Ed.]

CONCRETE WATERING-TROUGH FOR BEES.

In order to water bees, make a concrete vat 8 feet long, 6 wide, and 6 inches deep; then fill it with sand and small gravel, and it is ready for the water. I have used this three years with good results—no drowned bees as there are around a tank. I keep the sand and gravel drawn up from the center a little so the water can be reached longer. A bucket of water now and then will keep the gravel moist. B. F. Spafford.

Morning Sun, Iowa.

[This is a good suggestion. If no creek be near, moist gravel should be provided.—Ed.]

ENTRANCE-GUARD TO PREVENT ROBBING.

When robbing is going on, contract the entrance of the robbed colony down to one-fourth the usual size, and place an entrance-guard over it. It will be a bold robber that will enter after this is done.

Pittsfield, Ill. Geo. B. Duff.

[The scheme of applying an entrance-guard to check robbing we consider excellent.—Ed.]

LIQUEFYING HONEY IN AN INCUBATOR.

In regard to an article on page 145, about liquefying honey with hot air, I came to the following idea, which I think would make the job easy, and at the same time do it at very

little cost, and but little attention would be required from the bee-keeper. Just have the machine made with a thermostat, and also supplied with a thermometer, as our modern incubators are arranged, only the egg-chamber (which would be our honey-chamber) should be about twenty inches deep. It would probably be good to have doors on both sides so that the honey-cans might be more easily put in and removed. There should also be double doors, the outside one of wood, while the inside one would be of glass; and the doors should either work sidewise or upward, so as to be more out of the way. The size of the machine will have to depend on the quantity of the honey to be liquefied; but a machine taking eight or twelve 60-lb. cans would be large enough for the average bee-keeper. This machine would probably require a little larger lamp than an incubator of the same dimensions; but if honey will liquefy within 24 hours at a temperature of 100° it surely will consume but very little oil compared with the labor saved; and I think an even temperature of 110 or probably 125° would not spoil the flavor of the honey. I do not think it necessary to have the caps of the honey-cans removed.

New Braunfels, Tex. W. C. CONRADS.

[We have already been experimenting somewhat along these lines. See editorial on this subject elsewhere.—ED.]

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PAINTING THE EDGES OF HIVE-BODIES.

In the painting of hive-bodies and supers I wonder how many bee-keepers paint the edges as well as the sides. If you have not tried this, try it and see what a difference it makes when you come to clean them. The unpainted edges well coated with propolis are next to impossible to clean, while with the painted edges it is a very easy matter, as the propolis can not penetrate the wood It is also important that the edges of hive-bodies resting on the bottom-boards be well painted, as they are nearest the ground, and the unpainted surface would soon turn black and decay. It will pay to paint the floors of the bottom-boards and the under side of the roofs; in fact, the hive should be completely covered with paint excepting only the inside walls. Use nothing but the best grades of pure white lead and oil. Keep the hives well covered with paint, and there is no reason why they should not last a lifetime.

Nisbet, Pa. GRANT STANLEY.

[Our correspondent is entirely right. When we paint, let us make a thorough job. We find it pays.—ED.]

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QUEENS SUPERSEDED ON THE DOOLITTLE NON-SWARMING PLAN.

I have had this experience so far with the Doolittle non-swarming plan. If the colonies are not extra strong, or if the queen is poor, the bees will supersede their queens. In fact, they nearly all superseded their queens for me. The Doolittle plan will work, but I think the swarming should be done just at the commencement of a good flow, and the colonies must be very strong.

Sunnyside, Wash S. K. CLOVER.

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I came not to send peace but a sword.—MATT. 10:34.

O full of all subtilty and all mischief, thou child of the devil, thou enemy of all righteousness, wilt thou not cease to pervert the ways of the Lord?—ACTS 13:10.

Some time ago I was speaking here in these Home Papers of the wonderful discoveries that were coming so thick, and I said it almost made one stand still and wonder what great thing was coming next. What new and startling gift had God in store for us that should shake and astonish the world? A bright and successful young farmer, a good spiritual man, stopped me in the road a few days after and asked if I did not have faith to believe the next great thing would be somewhere along in the line of spiritual or moral reforms. So far radium, wireless telegraphy, flying-machines, etc., seemed to have little bearing in the way of rebuking sin and crime. I confessed to him I had been feeling a little sad to think these new discoveries had, so far, so little bearing on uplifting the morals of the world that we might almost doubt that they came from the hand of God—moving pictures, for instance. My friend (Adam Lister, Medina, O.), however, declared it as his belief that the next great thing to shake and astonish the world would be along in the line of spiritual things, and possibly something that would reprove and rebuke sinful humanity.

About the same time a good friend from away off on the Pacific coast wrote me something as follows:

*Brother Root:*—You wonder what great thing is coming next. Well, I am glad to be able to tell you. The Lord Jesus Christ is coming soon to receive his people and to 'rebuke the devourer.'* Shall we not all make haste and be ready to receive him?

Well, this thing has been on my mind ever since the suggestion came from these two friends; but I must confess I was so dull, and had so little faith, I did not recognize that the Lord Jesus Christ had come until I saw in the daily papers that our beloved *Ohio* had, by an overwhelming majority in both House and Senate, passed the county local-option law. I knew we had been sending some good men to make our laws and to represent the people; but after witnessing defeat after defeat by the rum power in the years that are passed, it was one of my greatest

*I will rebuke the devourer for your sakes, and he shall not destroy the fruits of your ground.—MAL. 3:10.

"happy surprises" when I saw not only *Ohio* but a great lot of the Southern States actually taking the lead. I have given you an account of the fight in the Senate some time ago when I happened to be present. A very bright young attorney from Cincinnati was speaking. He was well educated, handsome, talented, and a magnificent orator; but he was evidently in the employ of the millionaire brewers. He declared he was a temperance man, and in favor of the measure, and was exceedingly anxious to help it along, and I for a time was tempted to think him sincere. The way in which he took defeat after defeat brought forth my admiration; and after it was explained so I could see through his ingenious tricks I could imagine him turning to his employers and saying, "There! didn't I work hard for you? Did I leave any stone unturned to defeat these fanatics?" The "fanatics," however, saw through the "sheep's clothing," and his hypocrisy was rebuked, and buried with a shout. The Christian men and scholars we have been sending to represent us said in action what Paul said to the sorcerer, and just of late the good people all over our land have been saying to all of the great army of brewers and their hirelings: "Thou child of the devil, wilt thou not cease to pervert the right ways of the Lord?"

God has been indeed sending the Holy Spirit, even the spirit of Christ Jesus, down to a sinful world, and, as a result, our churches, Sunday-schools, Endeavor societies, etc., have been working in harmony and furnishing *good men* to be on hand and to be looking after the framing of our laws. The "drawing cards" the liquor party have employed so long, together with their money, seem to be playing out—especially this trick of "amendments," in order to "make our law better" (?). See the following from the Cleveland *Plain Dealer* of Feb. 27:

After three hours of verbal fireworks the House of Representatives this afternoon passed the bill by a vote of 79 to 36. Temperance advocates broke into song at the conclusion of the long fight. The leaders of the movement say the law, which will go into effect Sept. 1, will be the means of wiping saloons out of 75 out of the 88 counties of the State.

Every attempt to defeat or amend the measure was emphatically repudiated. The bill was passed exactly in the form in which it came from the Senate. The big majority persistently refused to consent to a change so much as the dotting of an *i* or the crossing of a *t*.

Representative Foster, of Findlay, attempted to inject an amendment changing palpable errors in construction, grammar, and spelling.

"Is this bill so sacred that this legislature can not be trusted to correct gross errors?" demanded Foster.

The answer was a shout that buried the amendment beyond recall.

The vote against the bill was almost entirely from members representing counties with large cities. The rural members solidly supported the measure as it stood, irrespective of party. It was another demonstration that liquor interests have lost the control they have claimed so long over the Democratic party. The vote for and against the bill was one of geographical location.

The editor of our Medina paper says Medina County will be among the first in the State to be made dry by the new law. The county-seat (Medina) has been dry for over 20 years. Now, shall we not all join in a friendly strife to see which county and State shall be first to say, in the plain language of Paul, "O child of the devil, thou enemy of *all* righteousness, wilt thou not *cease* to pervert the right ways of the Lord?"

When the saloons are cleaned out it will be an easy matter to say pretty much the same thing to the grafters who are stealing the money from our hard-working people in other ways. The love for temperance, purity, and "a square deal" is in the air; and it is *because* the spirit of Christ Jesus is getting into men's hearts in a way that was never known before.

We have a jail here in Bradentown; and, even if Manatee is a dry county I was surprised to find on my first visit eleven inmates, and most of them (in fact, I may say all) through drink. Two are in for murder, and the murder was done while on a drunken spree just before *Christmas*. The sheriff says the liquor comes from Tampa; but there is strong talk now of making even Tampa, with its 40,000 people, dry.

Last Sunday morning I said to my class in jail, "Boys, I suppose you will all rejoice with me that Ohio has passed the county local-option law, by a big majority."

A big burly colored man at my elbow replied, "Mr. Root, I ain't a very good man, I admit; but I try to be honest and tell the truth. I can't rejoice with you. The most satisfaction I have ever got out of any thing in this world is drink."

I looked him over a little and then replied:

"My friend, if you want the privilege of getting drunk with a clear conscience you certainly would accord the same to everybody else. Suppose we all do your way."

He replied that he could not be responsible for any one but himself.

Sometimes we often find something in a private letter that is better than many things written for publication, and I want to close with a sort of postscript from a letter just received from my son, E. R. It gives you a glimpse of him you might not get otherwise.

*Dear Father:*—I have just read your letter in regard to the pledge to the Anti-saloon League. I am placing the same before John. I feel that no money has ever been given to any cause that has been productive of larger results than that which we give to the Anti-saloon League. The showing is getting to be something tremendous; and, just think! it was my old classmate, Howard Russell, who started the movement, and it was you and Mr. Metcalf who held the thing on its feet until it could strike a blow.

The Roots especially ought to feel some pride in having been, as I might say, charter members of this magnificent organization that has helped produce such wonderful results all over the United States. Butler, Indiana, Mabel's old home, has just gone dry, and all the towns near by are now having a battle royal. The thing is going all over the United States, and it looks now as if even you would see the day when the saloons will be banished from all except our large cities and even then they will be crowded off by themselves. The way the great journals are pouring hot shot into the saloon business is very encouraging. Witness what *Collier's* is going to do as per enclosure. It has already published some *splendid* editorials.

May the Lord be praised that it was my privilege, and the privilege of the Root Co., to say, through the Anti-saloon League, "Thou child of the devil," etc., "*the hand of the Lord is upon thee.*"

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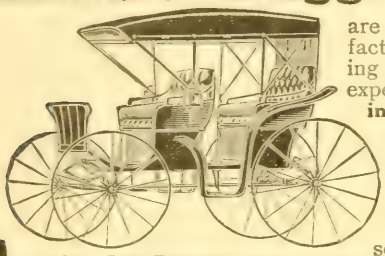

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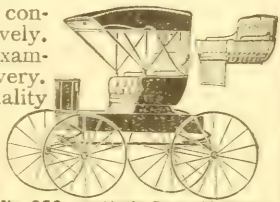

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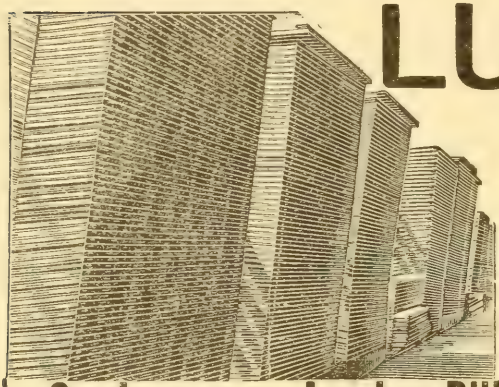

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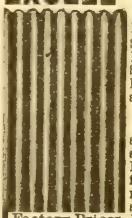

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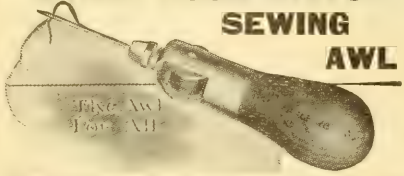

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**Roof-Fix** **The Perfect Roof Preserver,** makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our **free roofing book** tells all about it. Write for it today.

**The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.**

# Paint Without Oil

## Remarkable Discovery that Cuts Down the Cost of Paint Seventy-five Per Cent.

### A Free Trial Package is Mailed to Every One Who Writes.

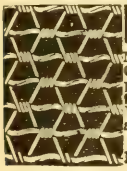
A. L Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder, and all that is required is cold water to make a paint weather-proof, fire-proof, and as durable as oil paint. It adheres to any surface, wood, stone, or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 202 North St., Adams, N. Y., and he will send you a free trial package, also color-card and full information showing you how you can save a good many dollars. Write to day

DO YOU WANT A LARGER INCOME

Investigate our adjustable concrete-molds. These are suitable for a large variety of work, such as burial-vaults, watering-troughs, and many other things needed in town and country.

INDIANA CONCRETE BURIAL VAULT CO.,
442 Board of Trade Bldg., . . Indianapolis, Ind



**FENCE** *Strongest Made*

Made of **High Carbon Double Strength** Coiled Wire. **Heavily Galvanized** to prevent rust. Have **no agents.** Sell at **factory prices on 30 days' free trial.** We pay **all freight.** 37 heights of farm and poultry fence. **Catalog Free.**

**COILED SPRING FENCE CO.**
Box 101 **Winchester, Indiana**

**DEMING Sprayers**

make money for the users. Best made—solidly constructed. Not injured by chemicals.

Nineteen Eight Catalogue and "Expert Testimony" will interest you.

THE DEMING CO.,
545 Depot St., Salem, O.
Henion & Hubbell,
Agents, Chicago, Ill.

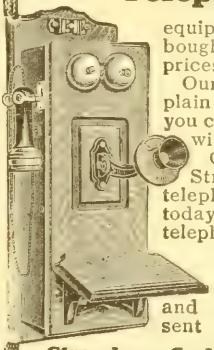
**CUTS** USED IN THIS MAGAZINE ARE FROM
*THE MUGLER ENGRAVING CO.*
*MUGLER BLDG. CLEVELAND, OHIO.*

# Just Listen a Moment

You can hear lots of important news—The Hog Market is up—ship that carload. Wheat is off a cent.

Information like this is important to every farmer—and it can be had for less than a cent a message if you and nine or ten of your neighbors will build your own telephone line.

**Stromberg-Carlson Telephone**

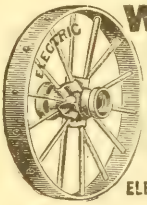


equipments can be bought at reasonable prices.

Our directions are so plain and simple that you can put up the line with little effort.

Over one million Stromberg-Carlson telephones are in use today. Write today for telephone book "How the Telephone Helps the Farmer." 21st edition and other literature, sent free.

**Stromberg-Carlson Telephone Mfg. Co.,**
**Rochester, N. Y. Chicago, Ill.**
**Address nearest office**



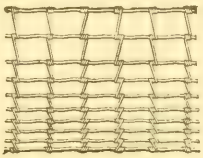

**WAGON SENSE**

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

**Electric Handy Wagon.**

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

**ELECTRIC WHEEL CO., Box 95, Quincy, Ill.**



**WIRE FENCE 29c**
**48-in. stock fence per rod only**

Best high carbon coiled steel spring wire. Catalogue of fences, tools and supplies FREE. Buy direct at wholesale. Write to-day.

**MASON FENCE CO.,**
**Box 88 Leesburg, O.**

**ENJOY YOUR GARDEN**

Our New Iron Age Book tells how to avoid the tiresome part of gardening and enjoy its recreation with the work left out. Full of helpful garden hints. FREE on application.

**IRON AGE TOOLS**

**Bateman Mfg. Co. Box 120G Greenloch, N.J.**

## Make Your Paint Money Buy Satisfaction

PAINT satisfaction means the working—spreading—covering—lasting qualities of the paint.

There's neither satisfaction nor economy in *cheap* paints—they crack and peel and blister—won't *wear*.

And hand mixed lead-and-oil paint is little better.

But your money buys unfailing satisfaction when you get "High Standard" Paint—It's made of best materials—and ground-and-mixed into a perfectly uniform paint-liquid by *machinery*.

Lowe Brothers High Standard Liquid Paint

Then there's thirty-five years of paint-making experience back of it.

*That's* why "High Standard" Paint *covers* more—and wears from two to four years longer than other paint, and costs less.

Write for our free booklet, "*Attractive Homes and How to Make Them.*"

THE LOWE BROTHERS COMPANY, 450-456 Third St., Dayton, O.

Paintmakers Varnishmakers New York Chicago Kansas City

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## SIX HARDY BLIZZARD BELT FREE EVERGREENS

To prove that our EVERGREENS are HEALTHY, HARDY and Vigorous, we offer to send SIX fine two-year-old trees, entirely FREE OF CHARGE, to every property owner who will answer this advertisement. Mailing expense 5 cts., which send or not, as you please. A postal will bring them and our catalogue which contains many COLORED PLATES of our BLIZZARD BELT FRUITS; SPECIAL BARGAINS and a mine of valuable information for fruit growers. We want to become acquainted with you, and it will pay you to get into touch with our HARDY "BLIZZARD BELT" stock and our liberal manner of doing business. THIRTY-EIGHT years' experience in growing HARDY "BLIZZARD BELT" trees. Write to-day.

THE GARDNER NURSERY COMPANY,
26 Nursery Ave. Osage, Iowa.

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**DO YOU LOVE FLOWERS?**—If so you'll be delighted with **Park's Floral Magazine.** It's a charming monthly, fully illustrated, up-to-date, entertaining and instructive; brings sunshine and cheer to **450,000 homes** the year round. Only 10 cts a year. For club of 3 (25 cts.) I'll send a big Surprise Package (10 pkts Choice Flower and Vegetable Seeds, enough for your garden, and 10 Splendid Flowering Bulbs in many fine sorts. See friends and club now. GEO. W. PARK, B32, La Park, Pa.

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**FRUIT TREES as cheap as $5 PER 100** Guaranteed true to name. FREIGHT PAID. Apple, Pear, Plum, Cherry, Peach and Carolina Poplars, healthy and fumigated. All trees, plants at low wholesale prices. We beat other reliable Nurseries in quality and prices. Catalog free. Reliance Nursery, Box 816 Geneva, N. Y.

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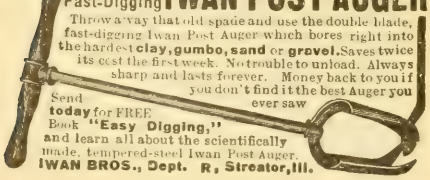
Get The Fast-Digging **IWAN POST AUGER**



Throw away that old spade and use the double blade, fast-digging Iwan Post Auger which bores right into the hardest **clay, gumbo, sand** or **gravel.** Saves twice its cost the first week. No trouble to unload. Always sharp and lasts forever. Money back to you if you don't find it the best Auger you ever saw

Send **today** for FREE Book **"Easy Digging,"** and learn all about the scientifically made, tempered-steel Iwan Post Auger.

**IWAN BROS., Dept. R, Streator, Ill.**

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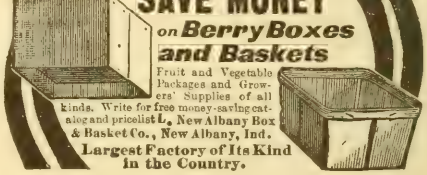
**SAVE MONEY on Berry Boxes and Baskets**



Fruit and Vegetable Packages and Growers' Supplies of all kinds. Write for free money-saving catalog and pricelist L. New Albany Box & Basket Co., New Albany, Ind.

**Largest Factory of Its Kind in the Country.**

# Peach Trees

Large stock; all straight, healthy, well-rooted trees *Free catalog.* Freight paid. *Agents wanted.* **Special Prices to clear ground.**

**W. T. Mitchell & Son, Beverly, O.**

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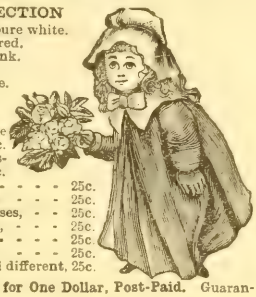
# A WOMAN FLORIST

**5 Hardy Everblooming Roses** On their own roots. ALL WILL BLOOM THIS SUMMER **25c**

Sent to any address post-paid; guaranteed to reach you in good growing condition.

**GEM ROSE COLLECTION**

White Maman Cochet, pure white.
Mrs. Ben R. Cant, deep red.
Bridesmaid, grandest pink.
Helen Gould, bright red.
Maman Cochet, deep rose.



**SPECIAL BARGAINS**

5 Carnations the "Divine Flower," all colors, 25c.
5 Prize-Winning Chrysanthemums, - - 25c.
6 Beautiful Coleus, - - - - - 25c.
3 Grand Orchid Cannas, - - - 25c.
8 Sweet-Scented Tuberoses, - - 25c.
5 Fuchsias, all different, - - - 25c.
10 Lovely Gladiolus, - - - - - 25c.
10 Superb Pansy Plants, - - - 25c.
15 Pkts. Flower Seeds, all different, 25c.

**Any Five Collections for One Dollar, Post-Paid.** Guarantee satisfaction. Once a customer, always one. Catalog Free.
**MISS ELLA V. BAINES, Box 85 Springfield, Ohio**

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# Wood's Virginia Ensilage Corn.

Superior both in growth and nutritive qualities. Our Ensilage Corn has achieved a big reputation wherever planted.

We are headquarters for all **Farm Seeds, Cow Peas, Sorghums, Millets, Crimson Clover, etc.** Prices quoted on request.

Write for prices and **Wood's Crop Special,** giving interesting information about Farm Seeds. Mailed free on request.

**T. W. WOOD & SONS,**
**SEEDSMEN, - - RICHMOND, VA.**

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# 850,000 GRAPEVINES

**69 Varieties.** Also **Small Fruits, Trees, &c.** Best Rooted Stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive price-list free. **Lewis Roesch, Box A, Fredonia, N.Y.**

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A beautiful colored plate of our
**New Eaton**
# Red Raspberry

and our strawberry catalog of valuable information about varieties with instructions for beginners. Free to all.

**THE FLANSBURGH & POTTER CO., Leslie, Michigan.**

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**The Best Strawberries** grow from Farmer's plants. Introducer of "Oswego" strawberry and "Plum Farmer" raspberry. Fruit plants, all kinds. Catalog free. **L. J. Farmer, Box 808, Pulaski, N. Y.**

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Seven splendid new varieties hardy Northern grown apples. Specially adapted to the Northwest. Winners of Wilder Medal, highest award in U.S. Rapid growers, big yielders, good keepers and shippers. Money makers for fruit growers. Also,

**NORTHERN GROWN**

shade and ornamental trees for group, specimen, or windbreak planting. Especially for locations where only hardy stock will thrive. For 5c for postage and packing, we will send beautiful Hybrid Perpetual Rose and illustrated catalog with full description and prices free. **Charles City Nursery & Orchard Co., Box 20, Charles City, Ia.**

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# Gladiolus Bulbs

After thirty years' experience with this flower we consider our XX mixture the choicest ever offered. Fine blooming bulbs, over an inch in diameter, by mail, 25 cts. per dozen; $1.50 per 100.

**M. CRAWFORD CO., Cuyahoga Falls, O.**

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# EVERGREEN SHADE-TREES.

White Cedar, 3 to 4 ft., 25 cts. each; Spruce, 3 to 4 ft., 25 cts. each; Balsam, 3 to 4 ft., 25 cts. each. Send for price list and get reduced prices on large orders. Address
**SCHUH BROS., CATAWBA, WIS.**

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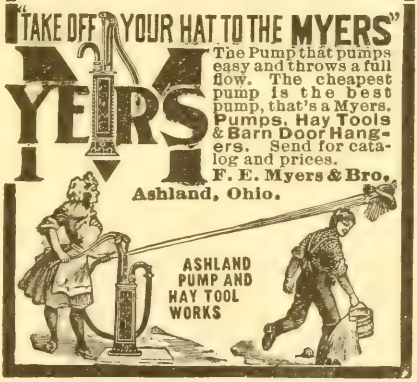
# SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"




The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. **Pumps, Hay Tools & Barn Door Hangers.** Send for catalog and prices.
**F. E. Myers & Bro., Ashland, Ohio.**

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# The National Fruit Grower

is a monthly publication of great importance to growers of fruit. The Spraying Department each month is worth the yearly subscription price of 50 cts.

SEND 10 CTS. FOR THREE MONTHS' TRIAL SUBSCRIPTION.

**The National Fruit Grower, St. Joseph, Mich.**

# BARGAINS IN BEE-FIXTURES.

We offer at reduced prices quite a list of goods located at various points, and chiefly of styles not at present listed in our catalog. You may find here something which you can use to advantage. Orders may be sent direct to Medina, or in some cases direct to the dealer or branch house where the goods are on hand. **In ordering, be sure to mention that you saw it in "Bargain Notice" in GLEANINGS.** **THE A. I. ROOT CO., Medina, O.**

## EXTRACTORS.

At Apopka, Orange Co., Fla., one six-frame Cowan extractor for L. frame, which has been used in all about 30 days; was sold five years ago, and is the old-style chain reversing type; sold new for $30 00. We offer this for $17.00, free on board at shipping-point.

At Medina, O., three eight-frame Root Automatic extractors which have been to Cuba and returned; have been somewhat rusted and corroded by salt air; well cleaned up, and in good condition. With ordinary hand-power gear we will sell at $32.00 each; regular price $40.00. With power gear and belt complete, without engine, $36.00; regular price, $45.00.

No. 4 Novice extractors at Mechanic Falls, Me.; also at Chicago, Ill.; also Des Moines, Iowa; new stock, but an over supply, offered at $7.75 each; regular price, $8.50.

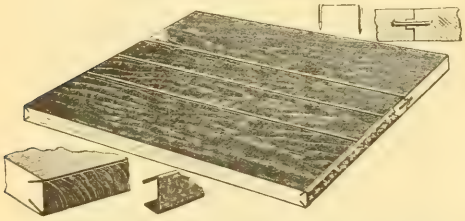
No. 15 Cowan extractor at Mechanic Falls, Me.; new machines in good condition as put out three years ago; offered at $11.00 each.

**DADANT UNCAPPING-CAN** at St Louis, Mo , and in New York city: offered at $7.75 each; new stock in good condition, somewhat shop-worn.

**GERMAN WAX-PRESS** at St. Louis, Mo., and in New York city; also at Medina, O. These are not of the latest pattern, but good machines in good condition; offered at $9.00 each; regular price, $12.00.

**BOARDMAN SOLAR WAX-EXTRACTOR** at Des Moines, Iowa, and at New York city, in good condition at $6.00; Regular price, $7.50. Also at New York a Doolittle solar wax-extractor at $3.25.

## PARTS OF HIVES.

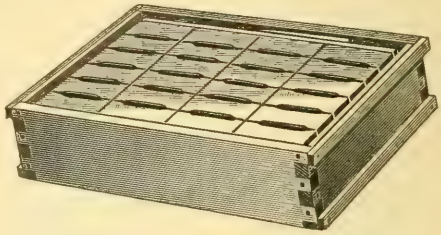


**DANZ. NAILLESS COVERS,** made of three pieces, tongued and put together with paint in joints and crate-staples over joint at each end, then a galvanized channel steel cleat at each end; the same style as our metal-bound super-cover, only made of ⅞-in. lumber. Special price to close out, 20 cts. for 8-frame; 22 cts. 10-frame, which is ⅜ regular price.

The A. I. Root Co., Syracuse, N.Y., 30 D-8 and 66 D-10
The A. I. Root Co., Philadelphia, Pa. 70 D-8 and 500 D-10
The A. I. Root Co., Medina, O. . . . 200 D-8 and 300 D-10

**COMBINED BOTTOM AND HIVE-STAND.** This is a very convenient and serviceable hive-bottom which sold at the same price as the hive-cover, or was included instead of the regular bottom at 5 cts. per hive extra; can be had from the following places in 8 or 10 frame size as listed, at the price of the regular bottom, in lots of 5 or more, 20 cts. each, 8-frame; 22 cts. each, 10 frame.

M. H. Hunt & Son, Redford, Mich., 30 C-8 and 20 10
The A. I. Root Co., Syracuse, N. Y., 30 C-8 and 100 C-10
The A. I. Root Co ,Philadelphia, Pa., 100 C-8 and 10 C-10
The A. I. Root Co., Chicago, Ill. . . . 80 C-8 and 80 C-10
The A. I. Root Co., Medina, O. . . . 100 C-8 and 100 C-10
John Nebel & Son, High Hill, Mo., 50 C-8



**DOVETAILED T SUPER** for producing honey in 4¼ sections supported on T tins. These are mostly provided with T fences for the 4¼x1½ plain section.

Buck & Wilson, Augusta, Kans., 25 4TP-8; price 50 cts. each for the lot, or 60 cts. each in lots of 5.
The A. I. Root Co., Chicago, Ill., 50 2TP-8.
The A I. Root Co., Philadelphia, Pa., 25 2TP-8 and 10 Hilton Dov. T supers, which are the same with thumb-screws in one side.
The A. I. Root Co., St. Paul, Minn., 10 2TP-8 and 10 2TS-8 Hilton Dov. T supers.
Price 35 cts. each in lots of 5 or over.

**THICK-TOP STAPLE-SPACED FRAMES,** L size, with ¼x⅞-inch end-bars, at $2 25 per 100, or $10 00 per box of 500.
The A. I. Root Co., Philadelphia, Pa., 4000 frames.
The A. I. Root Company, Chicago, Ill., 2500 frames.
At both points are also some of the same style, jumbo depth, at 25 cts. per 100 extra.

**ALL-WOOD FRAMES,** regular style, with The A. I. Root Co., Philadelphia, Pa., 4000; price $1.80 per 100, or $7.50 per case of 500.

**HOFFMAN FRAMES** with square-edge end-bars, otherwise regular; price $2.50 per 100.
Blanke & Hawk Supply Co ,St. Louis, Mo., 300 frames.
The A. I. Root Co., Philadelphia, Pa. . . . 1700 frames.

**CHAFF DIVISION-BOARDS,** regular pattern; price in flat, 10 cts. each; nailed, 20 cts. each, in lots of 10 or more.
Blanke & Hauk, St. Louis, Mo., 50 nailed at 20 cts. ea.
The A I. Root Co., Philadelphia, Pa., 200 " at 20 cts. ea.
W. S. Pouder, Indianapolis, Ind., 60 nailed at 20 cts. ea.
M. H. Hunt & Son, Redford, Mich., 75 in flat, 10 cts. ea.

**TEN-FRAME DOVETAILED HIVE-BODIES** with molded-top Hoffman frames; no division-board; listed as 5-10.

With The A. I. Root Co., New York city, 300, offered in regular crates of 5 at 60 cts. each, or $3 00 per crate; lots of 50 or more at 50 cts.

The A. I. Root Co., St. Paul, Minn., have a lot of Danz. hives and supers; also ten-frame Dovetailed hives, nailed and painted, second hand, in good condition, which they will sell at a special price. Correspond direct with them.

**STANDARD ROOT SMOKERS.** We have here at Medina something less than 100 of these smokers, which have been to Cuba and returned. They are somewhat rusted but may be made serviceable by one not too particular for appearances. Will sell them at 50 cts. each, or $5.00 per dozen; by mail, 25 cts. each extra.

# FREE! 50 lbs. Comb Foundation FREE!

## WEED'S NEW-PROCESS COMB FOUNDATION.

# PRIZES GIVEN AWAY

ABSOLUTELY FREE IN A CONTEST.

**FIRST PRIZE—25 lbs. Comb Fdn.** **THIRD PRIZE—5 lbs. Comb Fdn.**
**SECOND " —10 lbs. Comb Fdn.** **FOURTH " —5 lbs. Comb Fdn.**
**FIFTH PRIZE—5 lbs. Comb Fdn.**

THE ABOVE PRIZES will be given absolutely free to those who will make the largest number of words out of the letters found in the name "Toepperwein." The letters may be used over as many times as desired, but in no single word oftener than found in the name "Toepperwein." Only words found in Webster's dictionary are admitted. The words must all be plainly written in columns, and numbered.

This contest is absolutely free to any one and anywhere. It is a fair contest, and one has the same chance as the other. These contests are very instructive, and just the thing for schoolchildren to pass the evenings. The contest will close May 1, 1908, and all lists with words must then be in, and in May 15th GLEANINGS the results will be published, giving the names of the winners and all the words of the one who wins the first prize. The winners have the privilege of choosing any grade of foundation. We feel confident that the winners will be highly pleased with the prizes, as the comb foundation is as fine and perfect as any machinery can make, and is made right here in our factory out of this clear Southern beeswax.

## SHIPPING-CASES.

12-in. 4-row shipping-cases, with 3-in. glass.....$17.00 per 100.
9¼-in. 4-row shipping-cases, with 3-in. glass..... 15.00 per 100.
10-in. 2-row shipping-cases, with 3-in. glass..... 9 35 per 100.
6¼-in. 3-row shipping-cases, with 3 in. glass..... 9.80 per 100.
7⅛ in. 3 row shipping-cases, with 3-in. glass..... 10 70 per 100.

## ROOT'S BEE-SUPPLIES.

We always carry a large and complete stock of The A. I. Root Co.'s make of bee-supplies at Root's factory prices. Write us for illustrated catalog and price list.

## WEED NEW-PROCESS FD'N.

We have just received a set of new machinery, and our *Weed New Process Foundation* is perfect and gives perfect satisfaction everywhere.

## 13,000 CASES OF HONEY-CANS

on the way which will be here in time to supply the bee-keepers with cans. We buy honey in large amounts at market price.

Whenever you are in San Antonio make our office your headquarters and let us show you through our plant. Stay here a while and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

## UDO & MAX TOEPPERWEIN,

**1322 South Flores St.** **SAN ANTONIO, TEXAS.**

# Get Johnson's Old Trusty

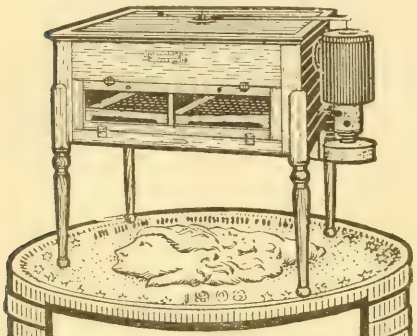
Incubator Book; save money on your incubator and be sure of success. Simplest, most automatic incubator made. Runs itself and pays for itself. Takes less oil. 75 per cent hatches guaranteed.

**Sold on 40, 60 or 90 Days Trial**

Freight prepaid. More than 100,000 in use. Send today for big free book. It will help you. 176 pages—every page a poultry sermon, 300 pictures. Write today for Johnson's prices and guaranty.

**M. M. JOHNSON, CLAY CENTER, NEBRASKA**

JOHNSON PAYS THE FREIGHT



**Model Dollar Makers**

No machines you can buy for your farm will earn as many dollars as

**MODEL Incubators and Brooders**

From its handsome, warmly padded case, and its perfect heating and ventilating systems, its accurate, powerful regulator, the **Model Hatcher** stands unequaled. The **Model Brooders**, with their substantially made cases, their diffusive heating system that imparts a gentle warmth, together with copious ventilation, raise strong, healthy chicks.

Poultry is a profitable crop on farms where **Model** machines are used. If you are not making big money on your chickens, write me today for my book telling how you can. The **Model** equipment and methods assure success.

**MODEL INCUBATOR CO.,**
CHAS. A. CYPHERS, Pres.
350 Henry St., **Buffalo, N. Y.**

**SUCCESSFUL HATCHES**

and healthy, vigorous chicks are always a certainty with

**RELIABLE INCUBATORS**

26 years' experience and practical demonstration is crystallized in the **one** perfect machine. Double heating system, double ventilating, economical—all explained in our interesting poultry book. Write today.
**Reliable Incubator & Brooder Co.,** Box B49 Quincy, Ill

**$7.85 FOR OUR 100 EGG HATCHING WONDER**

A substantial practical incubator, 26 inches long, 21 inches wide, 14 inches high. Triple walls, hot water heat, aluminum coated tank, automatic regulator, nursery. With brooder $11.45. To points west of Rockies, incubator, $9.85; with brooder, $14.70. Order today. Money refunded if not as represented. 80-page catalogue free. Established 1867.

**Delivered**

**GEO. ERTEL CO., Quincy, Ill.**

**$7.15 Buys the Best 120-EGG Incubator ever made**

Branches
St. Paul
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**Freight Prepaid East of Rockies**

Double cases all over; best copper tank; nursery; self-regulating. Best 100 chick hot-water Brooder, $4.35. Both ordered together, $11.00. **Satisfaction guaranteed.** No machines at any price are better. Write for our book today or send price now and save waiting.

**Belle City Incubator Co., Box 69, Racine, Wis**

## Your Name Will Get $2 Eggs

*For 50 Cents Per Sitting*

The White and Brown Leghorns are the greatest layers in the World. I keep 1000 of the celebrated Chamberlain laying strain on my Experimental Farm, and to increase the sale of my Perfect Chick Feed, I will send to any one who will send me their name so I can send them my Perfect Chick Feed Catalogue, 2 sittings of Single Comb Brown or White Leghorn Eggs for $1 for the 2 sittings. Only 2 sittings sold to one person. White or Barred Plymouth Rock Eggs $1 per sitting. This is a rare chance to get a start of extra fine stock. Send money and have your orders booked early as we can only fill about 1 order in 10 in season.

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Monthly, 50 to 100 pages, its writers are the most successful Poultrymen and women in the United States. It is

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nicely illustrated, brimful each month of information on How to Care for Fowls and Make the Most Money with them. In fact so good you can't afford to be without it. Price, 50 cents per year. Send at once for free sample and **SPECIAL OFFER TO YOU.**

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Monthly 24 to 64 pages, best writers and information how to **Make Big Money With Hogs.** It is

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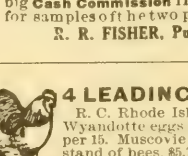


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R. C. Rhode Island Reds, White and Silver-laced Wyandotte eggs per 15, $1.25; Barred Rocks at $1.25 per 15. Muscovie duck-eggs, $3.00 per 9. Fine Italian stand of bees, $5.75 with queen; tested queen, $1.25.

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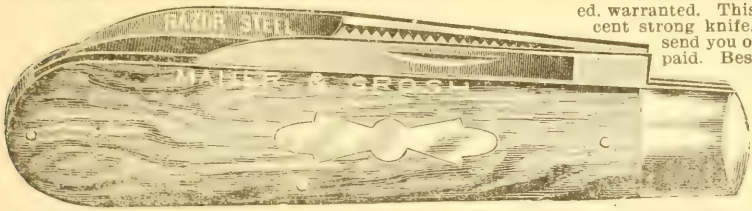


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**"Seaboard Magazine"** SIX SOUTHERN STATES SEABOARD'S STRONGHOLD **Sent Free**

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is, without doubt, seriously affected by the climatic conditions which surround him.

### ARE YOU PLEASANTLY LOCATED?

Are you shut in by the ice and snow of a rigorous winter, with naught but a cheerless sky to gaze upon? What of your lands now? Covered with snow? How about your stock? Have to be kept housed and fed?

The farmers in our territory are plowing, their stock grazing on the hillsides, and in the famous Manatee section growers are shipping their products to Northern markets, receiving remarkable prices for the same, due to the season.

Our lands are just as fertile as yours, produce just as much and at a time when prices are the best. It's a duty you owe yourself and family to look into this.

**CLIMATE IS A MOST IMPORTANT FACTOR** in connection with the profits, as well as pleasure, to be derived from your location.

Wouldn't you like to be pleasantly situated, surrounded by climatic conditions which permit work to be carried on the entire year, and where the struggle for existence against the elements of a frozen North is not known?

The climate in the six States traversed by our line is unsurpassed anywhere, and the profits being derived by those who only a few years ago were battling with the rigors of winter in a northern location is evidence of the value of our lands. Do you expect to remain where you are and keep up the struggle? Why not come down into southern sunshine and be pleasantly located, while at the same time you are deriving big profits from your crops?

**OUR LITERATURE IS FREE.** The "Seaboard Magazine," prepared especially for the benefit of parties contemplating a change of location, will help you. Let us put your name on our mailing-list. Drop us a postal to-day,

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# PATENTS.

Twenty-five Years' Practice.

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Patent practice in Patent Office and Courts.
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FOR SALE.—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

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**Honey-cases for sale.** Two cans to the case. Both cans and cases in A-1 condition. Price 30 cents per case in lots of 100 cases or more. Write for price. **MICHIGAN WHITE-CLOVER HONEY CO.**

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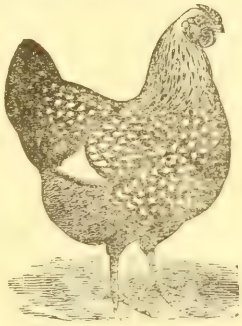
# The INDUSTRIOUS HEN



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$1 A YEAR. The Pathfinder EVERY WEEK. THE NATIONAL NEWS REVIEW.

# WESTERN Bee-keepers

.. will ..

SAVE TIME AND FREIGHT

by ordering ROOT'S GOODS from Des Moines, Iowa.

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

# NEW GOODS! BIG STOCK!

New Warehouse Root's Goods
Prompt Shipment Low Freight

EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
**241 BULL ST. SAVANNAH, GA.**

# The Hand System

TO satisfy a number of customers we are now making hives to suit the above system, just as the inventor himself uses them. These are not listed in our regular spring catalog, and are not kept in stock at any of our agencies. All orders will be filled from Medina. If ordered early enough, however, they can be forwarded to any one of our branches for redistribution. If you are going to try a few of these hives the coming season, we earnestly urge you to order early before the rush season comes on.

PRICE LIST OF HAND DIVISIONAL HIVE AND PARTS.

We have had numerous calls for divisional hives just as Mr. Hand uses them. We will not list them in our catalog for the coming season, but will make them up to supply on special order, to those who desire to try them, at prices in table below. The outside dimensions being nearly the same as the regular Dovetailed hive, the regular covers and bottoms may be used.

| Each section is 19½ in long, 5⅛ in. deep outside; upper portion of side removable with clamps to hold it in place. Sections used are 4¼x4¼x1½ plain, split three sides. Furnished in both eight and ten frame size. | Designating or Short Name | Nailed and Painted Each | In Flat | | |
|---|---|---|---|---|---|
| | | | Each | Five | Weight of 5 |
| Hand brood or extracting section, including the frames, springs, clamps, and nails; no foundation | Hand 8-8 | $ 65 | $ 50 | $ 2 25 | 35 |
| | Hand 8-10 | 70 | 55 | 2 50 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and 1-inch foundation starters | Hand 9-8 | 75 | 60 | 2 50 | 35 |
| | Hand 9-10 | 80 | 65 | 2 75 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and full sheets comb foundation | Hand 0-8 | 1 30 | 85 | 4 00 | 38 |
| | Hand 0-10 | 1 40 | 95 | 4 50 | 43 |
| Hand comb-honey section, including section-frames, and fences; no sections or foundation starters | Hand 2-8 | 75 | 60 | 2 75 | 30 |
| | Hand 2-10 | 80 | 65 | 3 00 | 35 |
| Hand comb-honey section, including section-frames, fences, sections, and full sheets foundation | Hand 1-8 | 1 45 | 1 00 | 4 75 | 35 |
| | Hand 1-10 | 1 55 | 1 10 | 5 25 | 40 |
| Hand four-section hive including two brood and two comb-honey sections; no sections or foundation starters | HandCE8822-8 | 3 50 | 2 65 | 12 00 | 180 |
| | HandCE8822-10 | 3 75 | 2 90 | 13 25 | 190 |
| Hand four-section hive including two brood and two comb-honey sections with sections and full sheets foundation | HandCE0011-8 | 6 30 | 4 25 | 20 00 | 200 |
| | HandCE0011-10 | 6 75 | 4 70 | 22 25 | 210 |
| Hand sectional super, no inside fixtures, including clamps nails, and flat tins | Hand Super-8 | 40 | 30 | 1 25 | 22 |
| | Hand Super-10 | 43 | 32 | 1 35 | 24 |

Hand brood-frames, 4⅞x17⅝x1⅜; ends, 1⅜x$\frac{5}{16}$; top, $\frac{13}{16}$x⅜; bottom, ½x¼ ... $2 00 per 100 in flat; $18.00 per 1000
Hand section-frames, 4⅞x17⅝x1½; ends and top, 1½x¼; bottom, 1½x⅜..... 2.50 " " 22.00 "
Hand fences, 4⅞x17⅝. P style ..... 1.75 " " 16.00 "

**The A. I. Root Company, Medina, Ohio**

## Classified Advertisements.

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

TO OUR READERS.

If you are in doubt about the value of the classified columns for advertising purposes, please read the following unsolicited testimonial:

I received many answers to my ad. in March 1st issue of GLEANINGS. I have made a choice, and engaged a man who will be here Monday. H. C. AHLERS.
West Bend, Wis.

We have many more just like that. Try the experiment for yourself. You will be pleased with the results.

## Wanted, Situations.

WANTED.—By a young man of good habits position in an apiary for the coming season; some experience. Address L. C. KEET, Greenfield, Mass.

WANTED.—By a young man of good habits and considerable experience in bee-keeping a position to work in an apiary for the summer months of 1908.
Address PAUL PUTZKI,
1110 F St., N. W., Washington, D. C.

Experienced, sober, reliable man wants position in sales or shipping department of established house doing a seed, poultry, or bee-supply business.
R. M. LYNCH, 1316 24th St., Galveston, Texas.

## Help Wanted.

WANTED.—Apiarist to help with 200 stands of bees, all of which are run for extracted honey. Prefer a young man who has had experience in Cuba or some other tropical country. Will pay $25 00 and board per month until Oct. 1. Fare from New York, New Orleans, or Havana, first class, $52.50; second class, $37.50; from Santiago de Cuba, $10.00 less.
W. J. YOUNG, Arecibo, P. R.

## Post Cards.

Beautiful new Easter post cards—7 for 15 cts.; 13 for 35 cts., postpaid. M. T. WRIGHT, Medina, O.

"Kinks on Post Cards" is a booklet telling you the things you don't know about making photographic post cards. Write for particulars.
E. O. WALTZ, Medina, Ohio.

## Plants.

GLADIOLUS BULBS.—Choice stock in mixtures and named varieties. Descriptive price list and cultural directions free. M. T. WRIGHT, Medina, O.

Why not beautify your home by the use of plants? They give the finishing touches, and are very attractive. We have the finest collection of house and garden plants grown by any florist. Write for price list; it's free. HAMMERSCHMIDT & CLARK,
Dept. A. Florists, Medina, Ohio.

## Rugs.

Be sure to send for our circular before you have your old carpet made into rugs. A postal will bring it. SANITARY RUG CO., Delaware, O.

## Poultry Offers.

FOR SALE.—Best White Leghorns; eggs, 15, $1.00; 30, $1.75. G. DETTMANN, Appleton, Wis. R. No. 6.

Fine R. I. Red, W. Wyandottes, and Barred Rock eggs, 95c for 14; $1 90 for 30. C. FAJEN, Alma, Mo.

Business B. P. Rocks. Eggs, 15 for $1; 35 for $2; 60 for $3. MRS. E. J. ADKISSON, Rt. 13, Nashville, Tenn.

FOR SALE.—White Rocks, cocks and cockerels. Write your wants. DR. C. L. VAN OSDOL, Dillsboro, Ind.

FOR SALE.—$1.00 Barred Rock and Pekin duck eggs. Circular. A. W. NEWCOMER, Glen Rock, Pa.

FOR SALE.—15 Barred P. eggs, $1.00. They excel as winter layers H. G. LARUE, LaRue, O.

FOR SALE.—Brazilian or Muscovy duck eggs; $1.00 per doz. C. K. BULLARD, Mechanicsburg, Ohio.

FOR SALE.—White Wyandottes, R. C. B. Minorcas, R. C. R. I. Reds, $1.00 per 15. JAMES STEWART,
Franklin Furnace, O. R. F. D.

FOR SALE.—White Wyandottes, 15 eggs, 75 cts.; 30, $1.25. Uncle Sam potato, very productive; 1 pound by mail, 30 cts. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—Eggs, White Wyandotte, $1 per 15; $6 per 100. White Holland turkeys, $2 per 9.
FRANK C. PELLETT, R. D. 4, Atlantic, Iowa.

FOR SALE.—Indian Runner duck eggs from choice stock, $1 00 per 12; $4.00 per 55; $6.50 per 100.
KENT JENNINGS, Mt. Gilead, O.

FOR SALE.—Silverlaced and White Wyandottes. Single and Rose Comb R. I. Reds, choice stock, eggs $2 00 per 30. CHAS. F. L. CLEMONS, Rt. 3, Davenport, Ia.

FOR SALE.—Single-comb Brown Leghorns and Buff Orpington eggs, $1 per 15; $4 per 100. Fertility guaranteed. C. M. CONRAD, Flanagan, Ill.

FOR SALE.—B. P. Rock eggs, $1.00 per setting of 15. Cuthbert red-raspberry plants, 25 cts. per dozen; 120 for $1.00. H. J. AVERY, Katonah, N. Y.

FOR SALE.—W. P. Rocks, Fishel and Empire strain. I have twenty select females headed by two extra-fine roosters. Eggs, $2.00 per twenty.
W. M. PARRISH, Rt. 8, Lawrence, Kan.

FOR SALE.—Eggs for hatching, S. C. Brown, Buff, and White Leghorns; Buff and White Rocks; Buff Wyandottes and S. S. Hamburgs. $2 00 per 15; $3 50 per 30. PETER H. LEVEY, Preston, Minn.

Brown Leghorns, highly bred 35 years, $2.00 to $10.00 each. Selected eggs from finest hens, 13 for $3.00; from average hens, 15 for $1.00. C. W. LUDLOW,
Lookout Mt. Apiary, Rt. 4, Lafayette, Ga.

White Wyandottes, great winter layers; 90 pullets averaged better than 50 per cent yield for December, January, and February. Eggs from these pens, $1.00 per 15; $3.00 per 50; $5.00 per 100.
H. H. WOODS, Crown Point, Ind.

Highland Farm S. C. Brown Leghorns are veritable egg-machines, and will lay their weight in eggs in 30 days—farm range, vigorous stock; bred to lay; eggs, $1 00 per 15; $1.75 per 30. Prompt service and satisfaction guaranteed. J. E. HAND,
Birmingham, Erie Co., Ohio.

## For Sale.

A BARGAIN.—10-fr. Dov. hives, one-story, 94c.; two-story, $1.49. J. F. BUCHMAYER, Dep. G, Iowa City, Ia.

FOR SALE.—Dahlias, 20 kinds, $1, Catalog. St. Louis Grand Prize. H. F. BURT, Taunton, Mass.

For Sale.—Vermont bee-keepers should have my 1908 price list. C. J. Lamb, East Calais, Vt.

For Sale.—200 lbs. brood or surplus foundation at a bargain. F. W. Lesser, Sta. A, Syracuse, N. Y.

For Sale.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. W. P. Smith, Penn, Miss.

For Sale.—A set of tinsmith's tools and machines in good repair, cheap.
E. D. Howell, New Hampton, N. Y.

For Sale.—New empty 10 L. frame redwood hive-bodies, 30 cts. each. H. Vogeler,
Box 104, Rt. 1, Fruitvale, Cal.

Flower seeds, 20 packets, 10 cts.; no two alike. Asters, pansies, carnations, etc. Dahlia roots, 7 c. each; 25 for 75 c. W. F. Talg, Union Center, Wis.

Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.
Kensington Cattery, Marion, Ohio.

For Sale.—Honey-cans used but once, emptied without steam or water, bright and clean; 100 cases or more, per case two cans, 25c; 50 cases, 30c; 25 cases, 32c; less, 35c. E. R. Pahl & Co., Milwaukee, Wis.

For Sale.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to Frank S. Stephens,
(Root's Goods.) Paden City, W. Va.

For Sale.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer. Cleveland Health Food Co., Cleveland, O.

For Sale.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cts. each, postpaid. Frank Alexander,
Delanson, N. Y.

For Sale.—Two hundred 8-frame dovetailed hives (Root's make), 200 5-gal. honey-cans in cases (new) at Lovelock, Nevada. Address C. K. Ercanbrack,
Watsonville, Cal.

For Sale.—Best Wisconsin sections, per 1000, $4.00; 2000, $7.75; 3000, $11.10; No. 2, 50 cts. less. Discount on Root's and Danz. hives and other supplies. Fifteen eggs, B. P. Rocks and Wyandotte, $1.00; Pekin ducks, 11 eggs, $1.50. H. S. Duby, St. Anne, Ill.

For Sale.—One good part bloodhound dog; will hunt all kinds of game; well broke, $15; Rose Comb Brown Leghorn eggs, full blood; fifteen eggs, 75 cents; per 100, $3.50. Italian queens, 60 cts., untested. Geo. J. Friess,
Hudson, Mich.

For Sale.—Well-established queen-rearing business, widely advertised for two years; large circle of steady customers; best testimonials; orders at hand; best location and climate; no speculation. Reason for selling, departure for Europe. Write immediately to A. E. Titoff, Ioamosa, Cal.

For Sale.—Eight Danzenbaker hives, complete with ten supers; frames filled with comb; 300 No. 1 sections; a few pounds of comb foundation; smoker, bee-escapes, etc. All used only one season. Good as new. Price $15 00 for complete outfit. Original cost, over $30.00. H. M. Winkel,
533 Lincoln Ave., Milwaukee, Wis.

For Sale.—75 eight-frame Root hives with good worker combs; used two seasons; also lid and bottom; $1.60 each. One hundred 4¼ supers, trimmed with sections and foundation; used one season; $10.00 each. Sixty 10-frame hives and 5 Danzenbaker hives, with combs wired, all Root's goods, $1.75 each, without super. Thirty 8-frame supers, trimmed, $3.00 each.
H. A. Ross, Evansville, Ind.

For Sale.—My out-apiary of 25 colonies very cheap, or I will sell the bees for $4.00 per colony. They are in The A. I. Root Jumbo hive, all good straight combs, built on wire. It is in a good place in an orchard, one block from the street-car; honey-house and fixtures. J. M. Rood,
2234 Jefferson Ave., W., Detroit, Mich.

## Real Estate for Bee-keepers.

For Sale.—Three village lots with a three-room house, small barn and henhouse, and 100 colonies of bees in two-story dovetailed comb-honey hives, extractor and all fixtures; good location; satisfactory reasons for selling. Write for particulars if interested. S. LaMont, Jarretts, Minn.

For Sale.—A desirable farm of 118 A. in southern Michigan, well located, and in a fine bee country; 100 A. plow land in a good state of cultivation; 15 A. valuable timber, plenty of good buildings, good water, and a fine bee-cellar. Write for particulars.
Floyd E. Smith, Somerset Center, Mich.

## Bees and Queens.

For Sale.—75 colonies of bees in eight-frame L. hives. Gustave Gross, Lake Mills, Wis.

Wanted.—25 hives of bees; must be free from disease. Henry Roorda, Fair Oaks, Ind.

For Sale.—Bees and honey; good opportunity for right party. Address C. H. Clute, Lexington, Ky.

Early queens, 70 cts.; after May 15, 60 cts.; also bee-supplies. List free. A. Raitray, Almont, Mich.

For Sale.—100 colonies bees on L. frames, at $4 00 each, on summer stand; also 12-in. fdn. mill cheap.
R. J. Smith, Street Road, N. Y.

Italian queens, untested, 75 cts.; tested, $1.00; 2-fr. nucleus, with queen, $2; 8-fr. colony with queen, $7 and $8. E. M. Collyer, 75 Broadway, Ossining, N. Y.

For Sale.—Twelve colonies Italian bees in shipping-boxes, on 7 L. or H. frames, in good condition, at $3 50 per colony. Wm. Amelang, Ottumwa, Ia.

For Sale.—Fifty colonies of Italian bees, 8-frame Dovetailed hives, straight combs, no disease; $5 00 per hive. P. H. Davis, Camden Place, Minneapolis, Minn.

For Sale.—Ten stands of Italian bees in Langstroth Simplicity hives. Will exchange for anything I can use. Bees are strong and in good condition. Make an offer. D. R. Phillips, Brownsville, Pa.

For Sale.—400 colonies Italian bees in 8 or 10 frame Dovetailed hives with Hoffman frames, at $6.00 per colony. In lots of 10, $5.00 per colony.
F. A. Gray, Redwood Falls, Minn.

Moore's strain, and golden Italian queens, untested, $1.00; 6, $5.00; 12, $9.00. Carniolan, Banat, and Caucasian queens, select, $1.25; 6, $6 00; 12, $10.00. Tested, any kind, $1.50; 6, $8.00. Choice breeders, $3.50. Circular free. W. H. Rails, Orange, Cal.

For Sale.—After May 15th, Italian, Carniolan, and Caucasian queens. Tested, $1.00; dozen, $11.00; untested, 75 cts.; dozen, $8.50; virgins, 40 cts.; dozen, $4.50. Nuclei, after June 10, 1 2, and 3 frame, $2 00, $3.00, $4 00, including queens. Orders booked now. Cash orders filled first. Edw. A. Reddout,
Baldwinsville, N. Y.

## Wants and Exchange.

WANTED.—To buy one cock and two or more pea fowls. Will buy in dozen lots if price is right.
CHAS. McCLAVE, New London, Ohio.

WANTED.—Large hand or power spraying-outfit.
G. A. WATT, Bellevue, Ohio.

WANTED.—About 500 colonies of bees on shares, or will buy; have handled large apiaries successfully.
F. B. CAVANAGH, Flint, Mich.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price.
OREL L. HERSHISER,
301 Huntington Ave., Buffalo, N. Y.

WANTED.—To exchange strawberry, blackberry, and raspberry and rhubarb plants, of the leading varieties, for honey-extractor, fdn., or any thing I can use in apiary. JOHN D. ANTRIM, Rt., box 55, Burlington, N. J.

## Honey and Wax For Sale.

Fancy orange-blossom, 60-lb. cans, 8¾ cts.; water-white sage, 8½ cts.; light amber, 8¼ cts.; dark amber, 8 cts. E. R. PAHL & Co., Milwaukee, Wis.

FOR SALE.—302 lbs. of No. 1 white-clover comb honey in 4¼ plain sections, no-drip cases; 17 cts. a pound.
E. D. TOWNSEND, Remus, Mecosta Co., Mich.

FOR SALE.—5000 lbs. clover and amber honey in 160-lb. kegs. C J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—A few 60-lb. tins of Michigan's best raspberry extracted honey.
A. G. WOODMAN Co., Grand Rapids, Mich.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans.
ROBT. A. HOLEKAMP & SON,
4263 Virginia Avenue, St. Louis, Mo.

FOR SALE.—White comb honey, No. 1, average 23 lbs. to the case of 24 sections, $3.25 per case; amber, $2.50. Fancy white extracted in 60-lb. cans, 10½c; amber, 9½c. HAROLD HORNER, Jenkintown, Pa.

FOR SALE.—Choice extracted honey for table use—thick, well-ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample 10 cts. J. P. MOORE, queen-breeder, Morgan, Ky.

FOR SALE.—Fine article buckwheat comb, 22 to 23 pounds net per case, $2.75; balance of our amber at $2 50 per case; six cases candied comb at $2.00 per case. All cases have 24 sections
QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

## Honey and Wax Wanted.

WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax State price, kind, and quantity.
R. A. BURNETT, 199 S. Water St., Chicago, Ill.

## Bee-keepers' Directory.

My late circular on bees and poultry will interest you. H. G. LARUE, LaRue, O.

ITALIAN queens bred for honey, untested, 75c each.
GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root s goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. Yates, 3 Chapman St., Hartford, Ct.

ITALIAN QUEENS.—Mott's long-tongued (Imp'd) and goldens. Circular free. E. E. MOTT, Glenwood, Mich.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Neb.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426 Osage Ave., Phila., Pa.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

BEE SUPPLIES.—Send list of wants for low prices and best goods to E. T. ABBOTT, St. Joseph, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa. Queen rearing outfits and books: new 40-p. catalog free

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND.
Birmingham, Erie Co., O.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd Ky.

ANGEL is breeding his Golden beauties and bright three-banded Italian queens, but will not offer any for sale this season, on account of not being at home at all times of the season. SAMUEL M. ANGEL,
Evansville, Ind.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10th. Over twenty years a breeder; 500 colonies to draw on. Free circular and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1 25 each. Write for circular, order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

HOME AGAIN.

Will the friends who want to write A. I. Root personally, bear in mind that he expects to be in Medina once more, shortly after April 1?

HONEY WANTED.

We are in the market for comb honey in Danzenbaker sections, either clover or basswood. Only fancy or A No. 1 grades are required. If you have any on hand which meets these requirements, please communicate at once, stating quantity and price.

MAPLE SUGAR AND SYRUP.

The maple-groves in this vicinity have produced an abundant crop of choice sweets this season; and while we have not yet secured very much of it, we expect to be well supplied as soon as the roads improve and producers have time to bring it to market. Fancy first-run syrup brings $1.15 per gallon; six gallons or over, $1.10, while good ordinary syrup can be had at $1.00 per gallon; six gallons or over, 95 cts.; twenty-five gallons and upward at 90 cts. Maple sugar is worth 12 to 15 cts. per lb., according to quality and quantity. We should be pleased to hear from those interested, stating quantity you can use, when we will quote you.

A BARGAIN IN DANZ. SUPERS AND SHIPPING-CASES.

We offer at a special bargain 120 Danzenbaker ten-frame supers, nailed and painted, filled with section-holders, Hyde-Scholl "M" fences, sections with full sheets of foundation They have been used, but are nearly new and in good condition. Such supers new are listed in our catalog at $1.75 each, yet we offer this lot crated and on board cars at Floresville, Texas, at 50 cts. each for the lot, and will throw in 1000 4 x 5 sections to make good any in the lot which may be broken or missing. In lots of not less than ten the price would be 60 cts. each; 50 at 55 cts. each as they are crated and loaded on cars. There are also 400 shipping-cases to hold 20 4 x 5 sections in the crates as shipped from the factory, which we would sell at $5.00 per crate of 50, or $9 00 per 100 for the lot — that is, $140 cash for goods worth new at carload prices over $340 This surely is a bargain for any one desiring to produce fancy comb honey with equipment that can not be excelled for the purpose They are not in the right locality for comb-honey production, but should work excellently in some other locality. Send your orders here to Medina.

CLOVER SEED OF ALL KINDS SCARCE

Judging from the very high prices prevailing for clover seeds, the supply must be scarce. Mammoth medium and alsike are selling at $13.00 and upward per bushel. White clover is not so high. This can be furnished at $10.00 per bushel. Alfalfa is also high, and brings $12.00 per bushel, while there is no change in crimson.

We have had an unusual demand for sweet-clover seed, and have but very little of it left. We shall be in the market for several tons of seed from this season's crop; and when the time comes to gather it we should be pleased to correspond with those who can supply the seed of both white and yellow, hulled or unhulled. If any of our readers have any seed on hand to dispose of we should be pleased to hear from them, naming quantity and price. We still have some yellow hulled seed which we offer, while it lasts at 25 cts. per lb.; 10 lbs., $2.30; 25 lbs., $5.50; 100 lbs., $21.00. We have some white seed, nearly all hulled, but containing a small per cent of unhulled seed Price 3 cts. per lb. less than the above. We can also supply a limited quantity of unhulled seed at 17 cts. per lb.; 10 lbs, $1.50; 25 lbs. or over, at 14 cts.; by mail, 10 cts. per lb. extra for any of the above to pay for postage and packing.

THE ALEXANDER BEE-VEIL.

We have secured, for making a bee-veil of wire cloth, a special weave of cloth having 8 meshes to the inch, and No 32 wire painted black. Ordinary window-screen cloth is of the same size of wire, and 12 to 14 meshes to the inch. This special cloth is, therefore, more transparent, and obstructs the vision less, than any other cloth we were ever able to secure. One objection to a veil of this kind is its bulk and the difficulty of transporting it, either by mail or when packed with other goods. We have overcome this one objection by making it with an open seam from the crown to the bottom of the skirt. Eight small safety-pins are included to pin up this seam when you receive it, or you may prefer to sew it up. The veil is rolled up so as to be placed in a box 3 x 3 x 12 inches so that it can be mailed safely for 12 cents postage, or packed with other goods to go by freight Price, complete, 60 cts. By mail, 72 cts. Special wire cloth for veil furnished at 6 cts. per foot or piece for a veil at 18 cts.; by mail, 3 cts. a foot extra, or 25 cts. postpaid for a veil-piece 10 x 33 inches, having edges folded ready to sew on the cloth parts.

SIMPLEX HONEY-JARS.

The factory have assured us that we may again secure this popular honey-jar in several sizes, including the one holding one pound of honey. We have ordered a fresh supply, and expect to have them in stock this next month. They will be packed in reshipping-cases of two dozen each, and the price will be $1.10 per case; 6 cases, $6.30.

NO. 25 HONEY-JARS.

During the past year we have had an unusual amount of trouble with breakage of this jar, even in the reshipping-cases packed with corrugated paper. The breakage occurred either in the porcelain cap or the top rim of the jar where the cap rests. We find we can get this same jar with lacquered tin cap without the center being cut out. This cap is lined with waxed paper wad, which seals tight on the top edge of the jar. This style of cap not only does away with breakage almost entirely, but enables us to furnish the jar at a lower price. We are not yet supplied with the new stock, but expect to have them this month at the following price. They will be packed as usual, two dozen in reshipping partitioned cases. No. 25 jars, tin cap lined, 90 cts. per case; 6 cases, $5.10. We can still furnish from stock the usual style of No. 25 with porcelain caps at $1.10 per case; 6 cases, $6.30.

A NEW SIZE OF SECTION.

There seems to be a demand in some localities, where bees are inclined to daub with propolis or otherwise discolor the wood in sections for a wide frame completely enclosing the sections. Our regular supers are adapted to the regular sections in section-holders without a top-bar. To provide a top-bar as well as a bottom it is necessary either to make the super deeper or the section shorter. In order to use the regular deep super we have decided to make a new section, 4¼x4¾x1⅜ or 1⅛ plain, no beeway. This will be used in a section frame hanging by top-bar in the regular deep super, interchangeable with the shallow Hoffman frame 5⅜ deep. This will necessitate a new fence adapted to this size of section, which will be designated by the letter N. The 4¼x 4¾x1⅛ will hold a full pound, and will work best in the eight-frame super, 24 to the super. In the Danz. width (16¼) ten-frame super the, 4¼x4¾x1⅜ will fit best 32 to the super. These sections may be split for inserting foundation by the Hand method, and the correct size of sheet for that purpose would be 4⅝x 17⅛. Price of N section-frames, $2.50 per 100 in flat. Price of N fences, $2.00 per 100. Sections 4¼x4¾x1⅜ or 1⅛, same price as regular Danz., $4.75 per 1000, No. 1; $4.25 for No. 2. Unless you specify we will send frames and sections 1⅜ wide, and supers fitted with the same. Deep super fitted with N section-frames,

N fences and springs, either 8 or 10 frame, will be designated 2 | N 8. Price, nailed and painted, 70 cts. each; in flat, 55 cts; 5 for $2 50.

2 N | 10. Price, nailed and painted, 75 cts. each; in flat, 60 cts.; 5 for $2.75.

With sections and foundation-starters included.

4 N | 8. Price, each, nailed and painted, $1.00; in flat, 75 cts. each; 5 for $3.50.

4 N | 10. Price, each, nailed and painted, $1 05; in flat, 80 cts. each; 5 for $3 75.

With sections and full sheets of foundation.

1 N | 8. Price, each, nailed and painted, $1.40; in flat, $1.00 each; 5 for $4.50.

1 N | 10. Price each, nailed and painted, $1.45; in flat, $1.05 each; 5 for $4.75.

These are not listed in our catalog this season, and not in stock with any of our dealers. If you wish to test them you will have to make special orders to secure them. You can get them through your dealer if you order in ample time and are not in a hurry to receive them. This section will require a new size of carton and a new size of shipping-case to put them up for market. We offer the new size for experiment this season to see if it has sufficient warrant for introduction into the catalog another year. By cutting beeways in the top and bottom they could be stored without fences or separators, and four could be placed in a shallow Hoffman frame for storing, though they would not be as well protected as in a section-frame. The latest style of shallow frame with ⅞-inch ends would be rather scant in length inside to take four sections, but those made earlier would have room.

## Convention Notices.

The Central Tennessee Bee-keepers' Association will meet in the rooms of the Nashville Board of Trade on Saturday, April 25, at 10 A.M. A full attendance of the members is desired, as this is the regular annual meeting for the election of officers, etc. A good program has been arranged, which will include essays and discussions on subjects of interest to bee-keepers. J. M. BUCHANAN, Sec.

Franklin, Tenn.

The seventeenth annual convention of the Connecticut Bee-keepers' Association will be held in Jewell Hall, Y. M. C. A. building, Hartford at 10:30 A.M. Apr. 9, for the election of officers and the transaction of any other business proper to come before the meeting. A program of unusual interest and value is being arranged and no bee-keepers should fail to attend. The matter of organizing a fall fair, under the provisions of a State law, is to be considered, which will be of vital interest to the honey industry.

J. A. SMITH, Sec.

The Northern Michigan Bee-keepers' Association will meet in convention at Mancelona, April 8 and 9. There will be three sessions on Wednesday, the 8th, and two on Thursday. The headquarters will be at the Handy Hotel, and the place of meeting, Medalie Hall. Ladies are cordially invited, especially for the last day, when a picnic dinner will be held at the hotel.

PRIZES.

Best case comb honey.—1. One Danzenbaker hive, nailed and painted. A. I. Root Co. 2. American Bee Journal one year.

Best 10 lbs. extracted honey.—1. One Aspinwall hive. 2. One Bingham smoker.

Best 5 lbs. beeswax. 1. One Woodman hive. 2 Bee-keepers' Review one year.

Best new invention for bee-keepers and honey-dealers. 1. 500 sections. Lengst & Koenig. 2. A B C of Bee Culture. E. M. Hunt. E. E. COVEYOU, Sec.

GOLDEN ITALIAN QUEENS, $1

Six for $5.

Safe arrival and satisfaction guaranteed.
18 years' experience. Circular.

J. B. CASE, Port Orange, Fla.

WE ARE READY NOW

to take your orders for Root bee supplies. We are filling our warerooms with *new goods* the packer's slips are almost all dated this year. This is our first season in the supply business, and our stock is all new and clean, and embraces almost all the articles listed in the regular Root catalog. Make up your order from any of this year's Root list and we will hustle the goods to you by the shortest road; or if you want our catalog and circulars giving prices on BLACK DIAMOND BRAND HONEY or BLACK-DIAMOND BEES, write your address on a postal and mail it to us. We shall take pleasure in handling your inquiries as well as orders promptly and courteously.

Don't forget the *10 per cent book discount* we have been offering—10 per cent discount from publisher's prices on any and all books and journals about bees published in America. This offer will be valid *only until May 1*, and to secure the discount your order must reach us before that date.

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A LARGER SUPPLY OF ROOT'S GOODS on hand than ever before, and more arriving every day to take care of our increasing trade. LET US LIST YOU as one who is saving money by buying goods of us. OUR LARGE CATALOG of Poultry and Bee Supplies is free. The second largest railroad center in the U. S.—why not save money by buying in TOLEDO? Best price, cash or in trade, for your honey and wax.

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Dean of Homeopathic Dept. of University of Michigan
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ROOT'S BEE-SUPPLIES
AT SPRINGFIELD, MASS.
New Goods. Free Catalog. 'Phone.
F. R. DANIELS, 117 FLORENCE ST.

# Mr. Bee-keeper,

Was 1907 a POOR YEAR for you?

It was a GOOD YEAR for users of

# DADANTS' FOUNDATION.

One dealer used 14,000 pounds.

Another dealer used 7,250 pounds. Another dealer used 4,500 pounds. Another dealer used 4,500 pounds.
Another dealer used 6,000 pounds. Another dealer used 4,500 pounds. Another dealer used 3,000 pounds.

*Thousands of pounds sold to the bee-keeper direct, or worked up for him out of his beeswax.*

The DEALER likes DADANT'S FOUNDATION because the bee-keeper likes it.
The bee-keeper likes it because his BEES like it.
The BEES like it because it is exactly like their own comb, so PURE and SWEET and CLEAN.

DADANT'S FOUNDATION is the Standard because it is the BEST.

Wax worked into foundation. Send for our Supply Catalog.

**DADANT & SONS, HAMILTON, ILL.**

# SUPPLIES FOR BEE-KEEPERS

**Every thing you want; all made by us in our own factories--at LOWEST PRICES.**

**The American Bee-keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

# W. T. FALCONER MFG. CO.

DEPARTMENT G, :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# WE ARE GROWING

## Because the Root Brooder

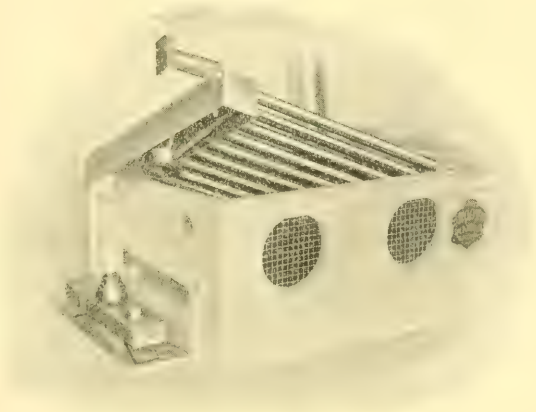
## IS

## The BROODER THAT BROODS

### and the Poultrymen are Quick to See its Good Points.

**It's the only one that gets away from that old-fashioned hot-air hover.**
**It's the only one that supplies the warmth to the chicks as the old hen does it**
**The chicks come in contact with these warm tubes and breathe cool, fresh air at same time.**

Read
"Our Homes"
by



A. I. Root,
March 1st
issue.

**This picture shows how easily the heater and lamp are removed. The chick floor below the tubes can be taken out for cleaning without removing the heater.**

Mr. Chester H. Cook, of Wallingford, Conn., writes: "In regard to the Root Brooder which I bought of you last spring would say that I am well pleased with it. I find it superior in every respect to all other Brooders that I have run or seen used, of which I have some of the most popular makes. I have taken chickens with leg weakness from my hot-air brooders and put them in the Root, and within a day or two they were lively as crickets. No more foul hot-air brooders for me. Wishing you the best of success in the future with your machines. P. S. The last brooder I ordered from you arrived a few days ago and I must say tney are put up in fine shape.

Mr. A. J. Bartlett, of Vineland, N. J., reports, "Our results with the Root Brooders are very flattering; for instance, in our last two hatches (Feb. 15, 1908) we raised *100 per cent of chicks hatched.*

The Root Brooders are so constructed that the chicks can not pile one upon another.

Our 1908 catalog gives an accurate and thorough description of the Root Brooders, and will be sent to you upon request.

## THE ROOT INCUBATOR CO.

**Department G** **CLEVELAND, OHIO**

# ROOT SHELF INDOOR OUTDOOR CONVERTIBLE BROODERS

# Write for Grand Free Millwork Catalog

## 5,000 Building-Material Bargains in Oak, Cypress, Maple, White and Yellow Pine, at HALF DEALERS' PRICES.

This catalog is an authority on Millwork Styles and tells how you can Build, Repair, or entirely Remodel your house at a saving of at least **half** the usual cost. We sell the output of our Sash, Door, and Millwork Factory direct to Home Owners, Carpenters, Contractors, and Builders everywhere at Factory Prices. Our goods are Guaranteed to be up to the High Standard of the Official Grade adopted by the Sash, Door, and Blind Mfrs.' Ass'n of the Northwest. $300,000 behind our Guarantee. Satisfied customers everywhere.

**We Ship Anywhere from Our Mammoth Plant in Davenport, Iowa. Quality, Safe Delivery, and Satisfaction Absolutely Guaranteed.**

## Save Money on Stair Work

**Latest Styles in Finest Hard Woods**

**50 Per Cent Below Usual Prices**

Our Stair Department furnishes Estimates which enable you to build a complete flight of stairs from our stock at a great saving. We furnish all stair material in Plain Red Oak or Yellow Pine; ⅔ the cost of stair work can be saved by using our regular designs which are correct in every detail. Write for FREE Catalog.

**Oak Stair Complete, $28.59** Dealer's price, $80

Including Steps, Risers, Starting Newel, Angle Newels, Balusters, Rail, Face, and Wall Stringers.

## 525 Styles of Doors

**50% Below Regular Prices**

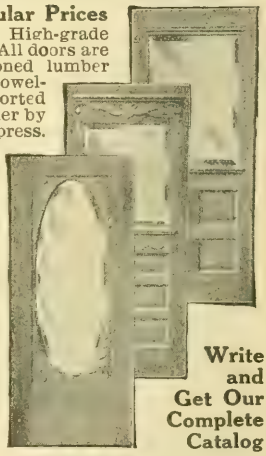
Largest stock of High-grade Doors in America. All doors are made of air-seasoned lumber with hardwood dowel-pins, glued with imported glue, pressed together by heavy steam-power press. Prices, 80c to $16.

Our big line of Soft-Pine Doors embraces every style in demand.

We save you $3.00 to $5.00 each on Hardwood Doors.

Most complete and artistic line in the country. *Veneered Oak Doors*, $3.25 and up. *Art Front Doors* of pleasing design and rich appearance, $1.70 and up.

SEND FOR COMPLETE CATALOG.



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## Hardwood Floor for room 10x12 ft. $7.68

Genuine Red Oak, ⅜ in. by 1½ in.—Seasoned, Matched, ready to lay. Price per 100 lineal feet, random lengths, wrapped in paper, quality guaranteed, 80c. Cheaper and better than a good carpet. Sanitary—artistic—durable. Millions of feet in stock for quick shipment.

**Send Room Dimensions for FREE ESTIMATE**

## Beamed Ceilings

**for ordinary-sized Dining-room or Reception Hall $15**

Just as beautiful and lasting as ordinarily cost $125 to $200. Send size of your room and get detail showing construction, design, net cost.

## Hardwood Interior Finish at Less Than Usual Cost of Pine

We make it possible for you to finish your home or any particular room in beautiful hard wood at less than you would pay your local dealer for White or Yellow Pine. We are able to do this because we make up large quantities and ship direct to the user. Your choice Red Oak, Cypress, White or Yellow Pine. We strongly recommend hard wood, unless you wish to enamel the interior woodwork, in which case White Pine is preferable. We carry every thing in mouldings and interior finish. Send your complete list of materials for Free Estimate.

## Buy Your Entire House Bill From Us

**Send for Free Book of Building Plans—Enclose 10c postage.**

## Windows Half Price

All styles—all sizes, with and without glass. Plain Rail and Check Rail Windows; Barn, Attic, and Cellar Sash. Art Windows in beautiful designs. Our prices save you 50 to 75 per cent. Quality and safe delivery guarant'd anywhere.

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# Gordon, Van Tine Co. 763 Case St. Davenport, Iowa

# Gleanings in Bee Culture

*Apiary of circular hives covered with straw in the Caucasus Mountains, Southeastern Russia.*

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI April 15, 1908 No. 8

# Our Comb-honey Outfit No. 6.

It is always a matter of considerable difficulty for the average beginner to decide exactly what he requires as an outfit for the first effort in keeping bees. To relieve the beginner of all perplexity we list certain outfits which we think will meet his needs. The one we give below is what may be fairly considered the best. Each item has been very carefully selected and we doubt the wisdom of leaving any article out; but the purchaser may do so without altering the prices on the other items.

| | |
|---|---|
| A B C and X Y Z of Bee Culture . . . | $ 1.25 |
| A year's subscription to "Gleanings in Bee Culture" (A large illustrated semi-monthly magazine.) | 1.00 |
| A Junior Root Smoker . . . . | .65 |
| A pair cotton bee-gloves (small, medium, or large) | .35 |
| Bee-veil No. 2, with silk front . . . | .60 |
| One full colony Italian bees in Danzenbaker hive (Complete with 32 section honey-boxes.) | 11.00 |
| A tested Italian queen . . . . | 2.50 |
| Two Danzenbaker hives complete for comb honey (Nailed and painted, ready for the bees.) | 6.20 |
| | $23.55 |

Some may regard this as too expensive an outfit; but it should be borne in mind that the colony of bees is just about perfect. The combs, for example, are beautifully straight and nearly full of brood. The breeding of the queen is of the very best, so that one has the nucleus of a fine stock of bees. In many cases a return of $10.00 in honey has been secured the first year from just such an outfit as this, and in addition one swarm and possibly two may be secured, which practically doubles the value of the investment. This is not an uncommon occurrence. On the contrary, scores of men have done as well or better, where the conditions were at all favorable. Providing any one has a liking for bees, we would earnestly urge the propriety of securing one of these outfits this spring. One is never too old to learn bee-keeping, and there is no more delightful out-door vocation. It is just right for busy folks who must have a hobby. In fact, there can be nothing better. If this offer is not quite to your liking, write us. We answer questions. To show we are not exaggerating the profits of bee-keeping when conditions are favorable, we insert the following unsolicited testimonial from a man of unquestioned integrity. We could secure many more like this if we chose to ask for them.

ST. PETER'S LUTHERAN CHURCH, NEW YORK, March 11, 1908.

*The A. I. Root Company, Dear Sirs:*—Enclosed please find my check for renewal of my subscription to GLEANINGS for five years. I greatly appreciate GLEANINGS, not only for the good and plain reading matter, but also because it furnishes many kinks, which otherwise one would be unable to find out. These kinks have enabled me in the last three years to sell from ten colonies on the average over $100 00 per year. I donate the honey to my church for charitable purposes, and the members are eager to buy, because they know my honey is absolutely pure.

Yours very truly, DR. A. B. MOLDENKE.

**The A. I. Root Co., Medina, Ohio.**

... and mail to us this

**Order Coupon.**

... $23.55, for which send me your Outfit No. 6 complete.

*Name*_____

*Street, or R. D.*_____

*Town*_____

*County*_____

*State*_____

## SAVE 30 TO 60 PER CENT. BUY DIRECT. BUILDING SUPPLIES OF EVERY KIND

**The Chicago House Wrecking Co. Purchased at forced sales, 50,000,000 feet of new lumber.** We are making special concessions to those who buy at once. Our prices today are far lower than prices have been for years. Order now for immediate or future use. Quick action will save you big profits. Remember prices elsewhere which are even now high, are bound to rise. We can quote you 30 to 60 per cent better prices for the same lumber than your local dealer. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouse and yards at Chicago and see the lumber we are offering and you will recognize that it is all we say of it. Make your own selection and see it loaded. It is not necessary to come to Chicago, however, unless you wish to. **We can fill your order by mail** with just what you want and guarantee you absolute satisfaction. Ours is the largest direct to the consumer lumber headquarters in the world. We sell millions of feet annually. Orders filled from every part of the United States. No matter where you live you can save money by supplying your building wants here.

We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can save you money on it. Our tremendous business of millions of dollars annually is your best guarantee of complete satisfaction of every purchase made from us. In our enormous stock of new lumber of every kind we have just what you need for every purpose. Don't buy a stick of material until you get our prices. We offer you everything in the lumber and building supply line needed for residences, farm homes, stores, churches, barns, outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 60 per cent less than your local dealers or lumber yards ask for it.

## IMPORTANT! Send Us Your Lumber Bill For Our Estimate

Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which means sacrificed prices and enables us to sell even as low as cost without loss. You take no chances in dealing with the Chicago House Wrecking Company. Whether for $1 or $10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

We also furnish you building and barn plans absolutely free upon request. Write us for any information or advice you want and we will have our staff of architects answer every inquiry promptly. Our free book of plans is sent if you mention this paper. We simplify your building proposition.

Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of every detail. That is what our Special Builder Service is for. Be sure and send us your lumber bill for our estimate. Feel free to write for anything you want to know along the line of building supplies, furnishings, etc.

## WE PURCHASE OUR GOODS AT Sheriffs' and Receivers' Sales

***Hundreds of Big Money Saving Bargains for Every Builder. Don't Build Your House, Barn, Store, Corn Cribs, Church, Etc., without getting Our Big Lumber Offer. Lowest Prices on Millwork Supplies, Roofing, Water Supply Outfits, Paints, Plumbing Supplies, Hardware, Heating Outfits, Furniture, Carpets, Linoleum, Etc.***

## DOORS 40c WINDOWS 20c

1,000 good doors, various sizes, secured by us in connection with dismantling operations, most of them with hardware. Prices range from **40c** up. Fancy front doors, all designs, **$1.50** up. 10,000 window sash, **20c** up, all sizes. Complete line of everything in mill Work. All brand new, best quality. Barn sash, 6 sizes, **25c** up. Cellar sash, **37c** up. Clear yellow pine mouldings, **25c** per 100 ft. up. Porch columns, **54c** up. Stair newels, **$1.78.** Stair rail, **10c** per ft. Pilaster casing, O. G. base, **1 3-4c** per ft. Base blocks, **4c** each. Quarter round, **25c** per 100 ft. Hardwood thresholds, **4c.** Porch brackets, **3c.** Porch spindles, **4c.** We handle everything in the Building Supply Line, including light and heavy hardware. **Send us your lumber bill for our estimate.** Ask for our new special mill work catalog. It prices everything needed for building purposes. Sent free.

## Rubberized - Galvo Roofing

**$1.25 per sq.** Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Weather-proof and fire-proof. We furnish with each order sufficient cement to make the laps and large head nails. Price is per sq. of 108 sq. ft. **1 ply, $1.25. 2 ply, $1.40. 3 ply, $1.75.**

## OUR NEW 500-PAGE CATALOG NO. 688 FREE.

**This Wonderful Bargain Book** is just out and ready to be sent to you at once. It is a book such as every shrewd buyer must have. **500 Pages** with thousands of items of the very best merchandise and supplies bought at the Sheriffs' and Receivers' Sales. It will pay you to keep it handy. Its pages contain a full record of what we still have on hand from the wonderful St. Louis Worlds' Fair. Merchandise, Machinery and Supplies, articles for every one. You will find it useful in the home, in the workshop or in the office. Write today. **Cut out coupon in corner.** Fill in answers to questions. Sign your name and address in full and mail to us. We will send you our Catalog free upon receipt of coupon and answers to questions.

***CHICAGO HOUSE WRECKING COMPANY,***
***35th and Iron Streets, CHICAGO, ILL.***

## *FREE CATALOG COUPON*

***Fill out, cut out, and Mail to Us.***

When do you expect to build or improve?.....

.....

What kind of building or buildings?.....

.....

What items in this advertisement interest you the most?

.....

Name.....

Town.....County.....

R. F. D. or P. O. Box .....State.....

I saw this advertisement in Gleanings in Bee Culture.

Send me free of all cost your 500-page Catalog. Address

**Chicago House Wrecking Co., Chicago**

# Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

PHILADELPHIA.—The sale of both comb and extracted honey has been very light ever since the holidays until last week when the stock in the stores was cleaned out somewhat, and there has been quite a demand for comb honey. Prices, however, seem weak, and large lots are being offered through the commission men from bee-keepers who have been holding their honey back for better prices. We quote: Fancy comb honey, 15 to 16; No. 1, 14 to 15; amber, 12; extracted, fancy white, in 60-lb. cans, 8½ to 9½; light amber, 7 to 8. Beeswax, 28. We do not handle honey on commission. WM. A. SELSER,
March 30. 10 Vine St., Philadelphia.

BUFFALO.—The honey market here is very dull. Receipts of white-clover comb honey are liberal. Buckwheat is cleaned up. Prospects are rather discouraging for the rest of the season. No. 1 to fancy white comb honey, 15 to 16; No. 2, 12 to 13; No. 1 buckwheat, 11 to 12; No. 2 buckwheat, 9 to 10; white-clover extracted, 9 to 10; amber extracted, 7½ to 8; dark extracted, 7 to 8; tumblers, per dozen, 90 to $1.00. Beeswax, 30 to 32. W. C. TOWNSEND,
March 27. Buffalo, N. Y.

CHICAGO.—The market is without any life. A little honey is being taken as the retailer exhausts his stock, but no lots are moving. Prices are about as last given in comb. Extracted is lower, especially the western product. Beeswax is wanted at 30 when clean and yellow. R. A. BURNETT & Co.,
April 8. Chicago, Ill.

DENVER.—The market on comb honey is slow, and prices are declining. We quote to our trade, No. 1 white, per case of 24 sections, $3.00; No. 1 light amber, $2 85; No. 2, $2 70; extracted, white, 8 to 9; light amber, strained, 6¾ to 7½. We pay 25 cts. for clean yellow beeswax delivered here.
THE COLORADO HONEY-PRODUCERS' ASS'N,
March 31. F. Rauchfuss, Mgr, Denver.

INDIANAPOLIS.—Jobbers are fairly well stocked, but very little honey is being offered by producers. Best grade of extracted honey is in good demand, but comb honey is finding slow sale. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 15 to 17; extracted white clover, 8 to 9; amber, in barrels, 6 to 6½ Beeswax, 28 cts. cash or 30 in exchange for merchandise. W. S. POUDER,
April 3. Indianapolis, Ind.

SAN FRANCISCO.—There is no movement to speak of in honey, as stocks are quite small, with little coming in, and the prices tend to limit the demand. We quote: Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, extracted, 7 to 7½; dark amber and candied, 5¼ to 5¾.
*Pacific Rural Press*, March 28.

CINCINNATI.—The market on comb honey is very quiet. There is no demand. Water-white sage honey is selling at 9 to 10; amber, in barrels, 6 to 6½. Beeswax is in fair demand, selling at 32.
C. H. W. WEBER,
March 30. Cincinnati, O.

HAMBURG.—Prices of honey are as follows: California, 8½; Chile, 4¾; Cuba, 4½; San Domingo, 4½; Mexico, 4½. Beeswax, Benguella, 30; Brazil, 32; Cuba, 30; Chile, 31; Madagascar, 29; Morocco, 30; Carnauba, yellow, 34; ditto gray, 28.—*L'Apiculture Nouvelle.*

BARCELONA.—Spanish beeswax, 29 to 31; foreign, 30 to 31 Extracted honey, first class, 5¾; second class, 5½; strained honey, 5; foreign honeys, 10; foreign, second-class, 8 to 9.—*L'Apiculture Nouvelle.*

Extracted
Honey
Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY
Purchasing Department,
205 La Salle St., Chicago, Illinois.

WE WILL BUY AND SELL
HONEY
of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

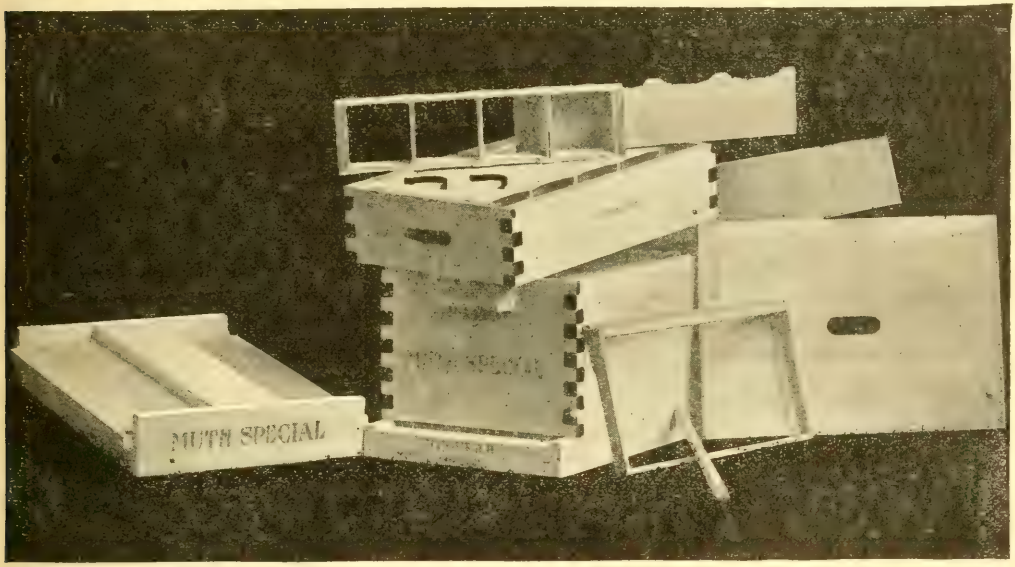
We are always in the market for WAX at highest market prices.

HILDRETH & SEGELKEN,
265-267 Greenwich St. 82-86 Murray St.
NEW YORK.

# The Hive that Makes Good= Because It Is Made Right!

## MUTH SPECIAL

**Is honestly the very best and most practical hive on the market to-day.**




We offer it as a *leader*, because it *is* one! Regular Dovetailed hive, but finished like a parlor car—finest cover and bottom you ever saw.

Cover is gable-style, and can't blow off; has rim rabbeted on the inside edge of the sides, so it has to stick to its job. A honey-board (with the aid of a Porter bee-escape, enabling you to take off honey without a sting) is furnished with each hive.

Bottom is reversible, and it simply *can't* warp.

Look at the construction of this hive, as shown in the above photograph, and then tell us if you ever saw a better.

Here are prices:

| | Nailed, Paint'd | Nailed. | In flat. | | |
|---|---|---|---|---|---|
| | 1 | 1 | 5 | 10 | 25 |
| With starters. | | | | | |
| 1-story, 8-frame | $ 1 90 | $ 1 70 | $ 6 50 | $12 00 | $28 25 |
| 1-story, 10-frame | 2 00 | 1 80 | 7 50 | 13 10 | 30 75 |
| With sections and starters. | | | | | |
| 1½-story, 8-frame | 2 85 | 2 55 | 9 75 | 18 00 | 42 00 |
| 1½-story, 10-frame | 3 00 | 2 70 | 10 50 | 19 50 | 45 75 |
| 2-story, 8-frame | 3 80 | 3 30 | 13 00 | 24 00 | 55 75 |
| 2-story, 10-frame | 4 00 | 3 50 | 14 00 | 26 00 | 60 75 |

**The FRED W. MUTH COMPANY**

**51 Walnut Street** *The* **Busy Bee-men** **CINCINNATI, O.**

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

# Gleanings in Bee Culture

$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.

*Devoted to Bees, Honey, and Home Interests.*

Published by THE A. I. ROOT CO., Medina, Ohio

J. T. CALVERT, Business Manager

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**$53,700**

Made by O-HI-O Cooker Agents in 1905 selling the

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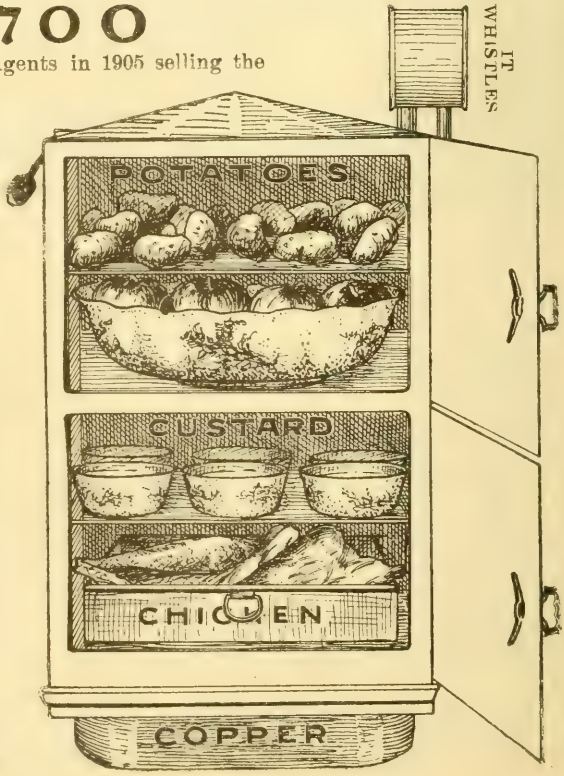
**Steam Cooker-Baker.**

We have many agents making $5 to $10 daily. Write us and we will give you names of agents near by who are making at least $5 daily. We can easily prove that the "O-HI-O" is the best money-maker you ever heard of, and will make you more money than any thing you ever sold or are now selling. *Write us at once and we will prove it.*

Guaranteed to save 50 per cent in fuel, labor, time, and provisions. A whole meal cooked over one burner on any style stove. It assures you deliciously cooked hot meals; *30 days' trial.* No intermingling of odors or tastes. Fine for use in summer cottages. A necessity every day of the year. The only healthful way to cook foods and breadstuffs.

*Handsomely illustrated catalog free.*

**"O-HI-O" COOKER CO.**
**908 Jefferson Av., Toledo, O.**



# WE'VE MOVED

TO

# LANSING, MICH.

WE NOW HAVE

**Larger Quarters.** A large warehouse has been secured, enabling us to store large quantities of goods for prompt shipment.

**Better Facilities.** We are located close to the depots, insuring quick deliveries to the transportation companies.

**More Railroads.** Grand Trunk, Lake Shore, Michigan Central, Pere Marquette—the four leading railroad systems of Michigan, reaching all sections of Lower Peninsula with better service than any other four roads.

**More Express Offices.** American, United States, National.

All these advantages are for the purpose of enabling us to attend better to the wants of the bee-keepers of Michigan and surrounding territory.

## Headquarters for
# "Root Quality"
## Bee-supplies

We make it our business to please bee-keepers in search of the right bee-supplies. If you have time to come and see us in our new establishment we shall be glad to see you. All bee-keepers welcome. Make our store your headquarters while in Lansing. Send for our catalog. Root's factory prices.

# M. H. Hunt & Son

**Lansing .. .. .. Michigan**

# Gleanings in Bee Culture

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### CARRIAGES AND BUGGIES.

If you are on the outlook for a family carriage or buggy we should like to call attention to the advertisement on page 451 of the Elkhart Carriage and Harness Manufacturing Co., Elkhart, Ind. This is one of the largest firms, if not *the* largest, of the kind in the world. They have been dealing direct with the public, without the intervention of the middleman, for a period of 35 years. In fact, we think they were pioneers in the business of selling vehicles by mail. They have built up an immense business by fair and honorable dealing, without which a mail order business could not long exist. Our older readers do not need an introduction, because the firm is well known to them by its advertisement in these columns year after year, and many of them purchased their family conveyance from this source long ago when ordering by mail was something new, and a daring thing to do. The catalog of the firm is always to be had merely for the asking; and as it lists over 200 vehicles and 65 styles of harness it is really worth sending for. If you send for it, please mention this journal

### THE CHARM OF EVERGREENS.

There is a place on every farm for evergreen trees. A thick belt of high evergreens makes a splendid shelter from wintry blasts. Protection of this kind is very welcome to the cattle, sheep, and poultry on a farm, more particularly when the trees are so planted as to check some peculiarly trying wind which blows in springtime when animals want to get out of doors after a long winter's imprisonment. Then, too, these trees serve to embellish a place and screen more sensitive plants and shrubs. Splendid hedges may be made of Norway spruce and arbor vitæ. A thicket of pines or firs is an excellent roosting-place for the turkeys, guineas, and pheasants; and the chickens also appreciate it. Many evergreens are decidedly ornamental, such as the blue spruce, the cedars, and the junipers. We are moved to make these remarks by perusing the catalog of Mr. D. Hill, box 87, Dundee, Ill., who is a prominent specialist in this line. He has made a study of evergreens for the prairie States, and has been very successful in finding them.


# SAVING

**is more important than hard work.**

Money deposited with us is secure and works for you continually. Our perfect system of Banking BY MAIL brings this opportunity to your door.

**4%**

The Savings Deposit Bank has a capital and surplus of $70,000, and assets of over $700,000. Its policy is conservative; its affairs are ably managed by capable and successful business men.

Deposits of $1.00 and upwards accepted, on which we pay a yearly interest of 4 per cent, compounded semi-annually. Send currency in registered letter, your own check; or by P. O. or Express money-order.

**WRITE FOR THE BOOKLET TO-DAY**

**Established 1892** **A State Bank**

THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

A. T. SPITZER, President. A. I. ROOT, Vice-pres. E. B. SPITZER, Cashier.

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# Outlook Is Cheerful.

*By the Bee Crank.*

Said a great evangelical preacher,
"The hen is a beautiful creature,"
And the hen, just for that,
Laid an egg in his hat,
And thus did the Hen-re-ward-Beecher.

A Florida hen cackled and thus betrayed
That a fine large egg she had just laid.
And a bee-man of fame
Was heard to exclaim,
"Oh beautiful thing! come under my wing;
It's us for the land where the mockingbirds sing,
—And if a 'jigger' bites me, *I'll forget it.*"

Whether the story is true or not, there seems to be some circumstantial evidence to support it. Meanwhile I am making a specialty of selling Root's goods at Root's prices, and have a very complete stock of new goods. The indications are that, during May and June, the demand will be tremendous, and I am prepared for such an event. I could ship a ton of foundation the day the order reaches me, and still have a complete stock on hand. My illustrated catalog is free, and I should like to send it to you, and should be pleased to quote an estimate on your wants; or if in a hurry you can order from the Root catalog, my prices being identical with factory list. This man sent for an estimate, and then wrote as follows:

*Walter S. Pouder.* CONNERSVILLE, IND.
*Dear Sir:*—Your favor with estimate received. When freights are taken into consideration your prices are the lowest; and when I buy Root's goods I know what I shall get, which is worth something to me. Inclosed you will find check with order, and I am sending my beeswax by express.
Yours, THOS. H. WHITE.

**Beeswax Wanted:** — Don't waste beeswax, but save it and send it here. I pay highest market price, cash or trade, and I have an outlet for every pound that I could secure, and could use more.

---

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

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Schuh Brothers.....515


WHITEWASHING BY WHOLESALE.

The modern man has no time to waste in whitewashing with a brush. It takes far too long, and usually there is quite an area to be covered—so much that to do it in the old way would be impossible unless important work is neglected. Moreover, there is no need of wasting time on it, because the modern spray-apparatus does the work to perfection—better than a brush, and not nearly so fatiguing. Many of the most important industrial establishments in the country are whitewashed in this manner. In fact, the brush is no longer used on large jobs. Along with the work of whitewashing one may disinfect a place at the same time, and do it thoroughly. Barns, fences, sheds, out-houses, etc., may be readily washed and disinfected with the spraying-machine.

The Rochester Spray Co., 32 East Ave., Rochester, N. Y., are specialists in this line, and make what they call a "kant-clog" nozzle which obviates all trouble with thick liquids such as are used in painting. Write to them personally if you are at all interested. Perhaps you can make a business out of it by doing work for your neighbors. The same machinery is used in spraying trees and plants, so that there is work the greater part of the year.

A VALUABLE POULTRY BOOK.

A book that will be read with a great deal of interest, on account of the rapid growth of the poultry industry and the profits to be realized in this field is Greider's 1908 Catalog of Poultry and Supplies, prepared by B. H. Greider, the well-known poultryman of Rheems, Pa.

This book illustrates and describes all the leading breeds of fowl, their value and ability as money-makers, besides giving the lowest prices for stock and eggs for hatching etc.

A chapter tells how to build the right kind of practical houses, showing plans and pictures, and suggests the necessary equipment for profitable use.

Feeding methods are explained, as well as the way to care for a flock so that they will keep in healthy condition and lay—especially in cold weather, when eggs bring high prices.

Among the features included is a set of chromos—pictures of fowls in colors—that appeal to all lovers of poultry.

At the price asked—10 cts. postpaid—this book is well worth sending for by every one interested in poultry on either a large or small scale. Address Mr. Greider at Rheems, Pa., and we believe you will be perfectly satisfied with your bargain.

CATALOGS RECEIVED.

Catalog of the Frank S. Platt Co., 350 State St., New Haven, Ct. A splendid catalog of flower and vegetable seeds—worth sending for.

The Phœnix Nursery Co. catalog, all about the "Red Tag" trees. Apply to Phœnix Nursery Co., Bloomington, Ill.

Catalogo de Semillas para la Exportacion. The Spanish seed catalog of the Barteldes Seed Co., of Denver, Colorado. Designed for Mexico and Central America

# Bees For Sale.

My bees have wintered perfectly—clean, dry, and free from dysentery—and I have decided to sell a few colonies. The bees are of the Superior stock, the hives nearly new, in good condition, and well painted. The combs are all-worker—mostly built on wired foundation. Everything is strictly first-class.

For a colony in an eight-frame Langstroth hive the price is $6.00; in a ten-frame Langstroth, or in a new Heddon hive (two sections) the price is $7.00; and to each purchaser of one or more colonies the Review will be sent free for 1908.

I am now ready to accept and book orders accompanied by the cash; and when I have received as many orders as I care to fill, no more will be accepted. The bees will be shipped by express, about the close of fruit-bloom, when the newly gathered honey will furnish the necessary water, and safe arrival will be guaranteed in every respect.

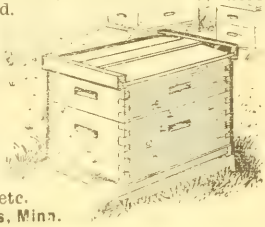
If you wish to stock your apiary with a strain of bees that has no superior, here is a chance to get a breeding-queen, such as the most of dealers ask from $3.00 to $5 00 for, already introduced, in a full colony, whereby she can be shipped without injury, early in the season, all at a moderate price.

**W. Z. HUTCHINSON, Flint, Mich.**

# BEE KEEPING will be a profitable industry this season.

Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

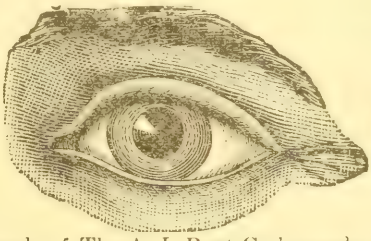
## Get Ready Now for More Honey



**Let us send you our catalog** We are manufacturers and sell only our own make of bee-supplies. Minneapolis is the largest lumber-distributing point; the Mississippi river furnishes us power, and our organization and labor conditions are the best for economical production. **Send us an estimate of your requirements and let us give you prices** We have a large stock of standard bee-supplies on hand.

Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Comb Foundation, Smokers, Extractors, Shipping-cases, etc.

**MINNESOTA BEE SUPPLY COMPANY, 23 Nicollet Island, Minneapolis, Minn.**

# Keep your  on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once. For prompt shipments and good service, we are at your command

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO., MISSOURI.**

# This Coupon worth 25 Cents!

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

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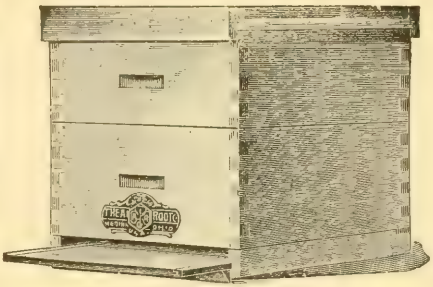
A 32-page illustrated 50-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keeper. . . . Best writers.

**It will increase your Honey-money!**

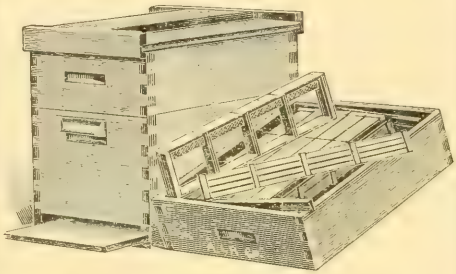
If you will send us your name and address with 25 cents (stamps or coin) together with this coupon, we will send you a trial trip of our journal for 12 months. Order now, and let us begin with this month's fine number. Address

**American Bee Journal, 118 W. Jackson, Chicago, Illinois**



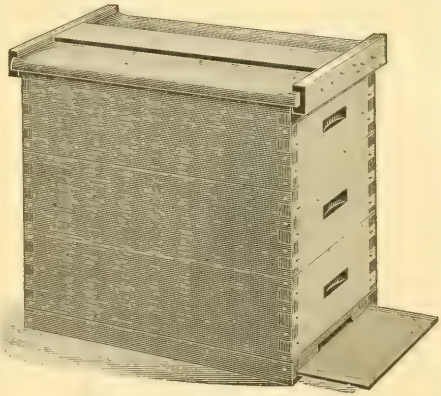
Danzenbaker Hive.

## The Best Comb-honey Hive



1½-story Dov'd Hive for Comb Honey.

## The Best All-around Hive



Divisible Brood Chamber Hive.

## The Best Hive for Experts

## THE A. I. ROOT COMPANY

SYRACUSE, NEW YORK

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**De Espana, Portugal y Colonies.**

Pidan catalogos de las colmenas, extractores, prenzas para cera, ahumadores, zinc perforado, escape de abejas, velos, cuchillos, maquinas para hacer base de panales, y todos otros articulos utiles en apicultura manufacturado por la celeberrima casa de

**A. I. Root Company,**

la fabrica la mas importante del mundo. Precios muy modicos a los subagentes por mercancias puestas en nuestros talleres.

**EMILE BONDONNEAU,**

Agente Générale

POR TODA EUROPA Y COLONIAS,

142 Faubourg SAINT DENIS, PARIS. 10me.

TO THE

# BEE-KEEPERS OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

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**E. GRAINGER & COMPANY,**

Deer Park,

**Toronto, Ontario, Canada.**

CANADIAN AGENTS FOR THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

# We are Still Here, But Not Here Still.

BEE-MEN HAVE realized all over the country that they could save money by buying bee-supplies in TOLEDO.

THIS ANSWERS the question as to why OUR sales increase from 30 to 50 per cent over each previous year.

## A LARGER SUPPLY OF ROOT'S GOODS

on hand than ever before, and more arriving every day to take care of our increasing trade.

LET US LIST YOU as one of the thousands who is saving money each year by buying goods of us.

OUR LARGE CATALOG of poultry and bee supplies is free. Just send a postal for it.

THE SECOND LARGEST railroad center in the United States. Why not save money by buying in TOLEDO?

Best prices, cash or in trade, for your honey and wax.

**Griggs Bros. & Nichols Co.**
523 Monroe St. .. Toledo, Ohio.

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WE ARE HEADQUARTERS FOR

## Bee-supplies

in this section, as we carry the largest and most complete line of Hives, Supers, Sections, Foundation, Bee-smokers, and other Apiarian Supplies, of any one in the New England States. We have a good stock of goods on hand now, and solicit your orders. Send postal for price list of

## Bees and Queens.

**W. W. CARY & SON**
LYONSVILLE, MASS.

# WE HANDLE the BEST GOODS OBTAINABLE

**Lewis** BEE-HIVES and SECTIONS. **Root's** SMOKERS and EXTRACTORS. **Dadant's** COMB FOUNDATION.

If you live west of the Missouri river, send for our FREE 48-page illustrated catalog to-day and save money. We are a co-operative association of bee-keepers, and can supply comb and extracted honey at all times.

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are the result of years of careful selection and judicious breeding from the best strains of superior long-tongue red-clover Italians in America and Italy—strains that have gained a world-wide reputation for hardiness, gentleness, and superior honey-gathering qualities. Highland Farm queens are bred strictly for business by an expert queen-breeder of 20 years' experience. Highland Farm methods will produce PERFECTLY DEVELOPED, LONG-LIVED, AND PROLIFIC QUEENS. If you want *cheap* queens, the woods are full of them. If you want the best that can be produced by the most scientific methods, Highland Farm queens will not disappoint you. Single queen, $1 00; 6, $5.00; 12, $9.00. Safe delivery and satisfaction guaranteed.
Send for circular.

**HIGHLAND BEE AND POULTRY FARM,** J. E. HAND, Proprietor, **BIRMINGHAM, ERIE CO., O.**

# What's the Matter With Hilton?

## WHY!

He has got his new goods fresh from The A. I. Root factory, and his 1908 catalog, and wants you to send for one free—40 pages illustrating and describing Root's goods at Root's prices. Send him a list of what goods you want, and let him tell you how much they will cost you.

Cash or supplies for beeswax at all times.

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**FREMONT, :: :: MICHIGAN**

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**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

**IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR**

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case**, and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed**, giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot**: no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt**, expensive dies making it **uniformly perfect as possible to devise. We confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

## OUR SUPPLY BUSINESS HAS BEEN IN

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for 15 years. It has increased each year. We want YOUR order this year, and will quote you attractive prices. Our prices are f. o. b. cars here. We furnish bees in any quantities. Have seven hundred colonies in our own yards. Catalog free.

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# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

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# Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage.

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**9 and 11 W. Pratt St. Baltimore, Md.**

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## COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

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With Every Order of Supplies of $5.00 or Over.

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

FULL LINE OF
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You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

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H. G. ACKLIN, MANAGER
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On a Line

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We sell at factory prices.
Send us a trial order.

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Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

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will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

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**Headquarters for**

# BEE SUPPLIES

**Distributor of Root's Goods Exclusively, at Root's Factory Prices**

GIVE ME YOUR ORDERS for the **Best Goods Made.** You wi be pleased on receipt of them. You will **save money** by ordering from me. My stock is complete; in fact, I keep **every thing** the **bee-keeper** needs. **Cincinnati** is one of the best **shipping-points** in the Union, **particularly in the South,** as all freight now **goes through Cincinnati.** Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly **free of charge.**

## Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

# C. H. W. WEBER

**Office and Salesroom, 2146-2148 Central Ave.**
**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Company, Medina, Ohio

E. R. ROOT, EDITOR — A. L. BOYDEN, ADVERTISING MGR.
H. H. ROOT, ASST. ED. — J. T. CALVERT, BUSINESS MGR.
A. I. ROOT, EDITOR OF HOME DEPARTMENT

Vol. XXXVI. APRIL 15, 1908. No. 8


## STRAY STRAWS
by Dr. C. C. MILLER

J. E. HAND, page 422, evidently thinks the best time for spring feeding is in the fall. Here's my hand on that, friend Hand.

ILLINOIS failed to get county option, but our new township-option law is making things lively for the saloons Now that you Ohio fellows have county option, you ought to make things just hum.

PHILLIP B. STEWART, I don't believe you will like any of the plans you propose, page 445, unless it be the plan with box hives. Most, however, would prefer the plan given by W. K. M., only by some mistake he is made to say that the bees should be driven out 15 days after swarming. It should be 21.

F. DANZENBAKER thinks I shou'd put nothing in the two-inch space under frames to prevent bees building down, p. 447. Worth thinking over. But when the bees fill up the space with comb, will it not be the same as if there had been in the first place deeper combs with no deep space? Besides, the combs are generally built crosswise, making bad work lifting out the frames.

WHAT CAN possibly make such a difference between F. Greiner's experience and mine? He says, p. 435, that in the few cases when he left nothing but a board cover over his supers, with the hot sun upon them, the result was the loss of a super of honey. I do not think I ever had a section injured, to say nothing of the loss of a super, and I've had hundreds and hundreds of cases of the hot sun shining upon an unpainted single-board cover on the super. I wonder if his hives are in too close surroundings. I once had combs melt down in a hive in shade so dense that the sun never touched it, but with undergrowth on all sides to hinder free circulation of air. [The difference may be accounted for on the basis of locality as well as the immediate surroundings.—ED.]

DYSENTERY is mentioned, p. 418. Better call it diarrhea. Even that is a pretty strong term if there is nothing more than overloading the intestines. [We have known for some time that the word "dysentery" was not the correct or technical one to describe a certain disease of the bees in spring, and that "diarrhea" was much more exact; but, unfortunately, the former term has become so thoroughly incorporated in our literature and the minds of our correspondents that it has come to be one of those words that we can not very well change.—ED.]

REPLYING, Mr. Editor, to your query, page 411, I do not believe that ventilation at each story "requires a large portion of fielders to stay at home to keep up the necessary body heat." The nurse bees are sufficient for that at any time when a flow is on, and are not even they sometimes forced to hang out idle when ventilation is insufficient? [Are you sure that there will be enough nurse bees in all localities to keep up the necessary body heat in double or triple deckers when you storify or pile one super on top of another in such a way as to leave ventilating-gaps? If there has been a large amount of brood-rearing at the right time, it is conceivable that there might be enough of such young bees —ED.]

TAKING AWAY combs from a ten-frame hive and filling out with dummies when the harvest commences, as recommended on p. 417, has the disadvantage that sections over the dummy or dummies at the side will be slowly worked. A limited experience, however, leads me to believe that this may be remedied by putting the dummies, not at the side, but between the combs, one in a place. Contrary to my expectation this did not seem to hinder the work of either bees or queen. [A good suggestion. If a dummy be put in the center of the brood-nest it will have a tendency to force comb-building in supers clear out to the sides, and still the center will not be neglected.—ED.]

I REFUSE to be convinced, Mr. Editor, that when I say it does not pay me to paint my hives I am thereby arguing that hives will not last longer, and look nicer if painted, p. 412. As to the rest, you are quite right in stating my position as far as you go, but not right as to Mr. Doolittle. He believes unpainted hives are better for the bees, and I suspect he is right. You say I have changed hives once already in forty years. Worse than that. In forty-seven years I have changed five times—from a sugar-barrel to Quinby box hives; then to the Lester frame hive; then to the Vandervort with frames 18 by 9; then to the Langstroth; then from ten frame to eight frame; also changing from several kinds of frames to the Miller frame.

CAN YOU TELL, Mr. Editor, when Neponset-covered covers came into use? You sent me one of the first, I think, with instructions to paint. I didn't paint, but the cover seems just as good yet. [We introduced it some five or six years ago, and at that time a correspondent, in calling our attention to it, stated that he had covers covered with the paper that had been used for twelve years, and it was then as good as ever. We have covered a large number of our hives with the material, and find it to be very durable, either with or without paint. We feel satisfied that it will outlast the ordinary *steel* tin plate. The only objection to it is that it will not stand much rough handling, such as piling a heavy hive on top of it in such a way as to gouge into the paper.—ED.]

THE METHOD of using two starters in sections, one at top and one at bottom, "still leaves a chance for pop-holes and bee-spaces in the comb at the sides," page 433. I don't wonder at your thinking so, Mr. Editor; but if you were to see a crop of my honey I think you would decide the bees had not made good use of their chance for pop-holes. Look at "Forty Years Among the Bees," pp. 283, 285 Of course, the sections there pictured were selected as the very best, and yet hundreds of others were like them. But look at pages 15, 269, 271, 279. Those sections were taken with no thought of avoiding pop-holes, many of them being unfinished, and not filled out as they would be later. [Your evidence, doctor, seems to be quite conclusive. Apparently you had already put into practice, in part at least, our suggestion as given on page 433, April 1st issue. If so, it would appear that comb honey without pop-holes *can* be produced by a large top starter reaching almost to the bottom, and a narrow bottom starter, providing both starters nearly touch the wood on either side. This allows for the sagging of the foundation and a slight side stretch. Of course, you keep your sections square; for foundation cut nearly to a fit (in width) requires square sections and square cutting—at least the top sheet.—ED.]

ALLEN LATHAM asks, "Had you ever thought that it stands to reason that there should be a poor joint between top starter and bottom in sections?" I must confess that it does. after his calling my attention to some points. Only rarely will top and bottom starters exactly correspond so as to be the same as a continuous sheet of foundation, and the top starter will not always be in exact alignment with the bottom. I confess I had been so well satisfied with the finished product that I had never critically examined the work of the bees at that point; but happening to have on hand five sections emptied of honey by the bees, I have just made such examination. In the first four there was nothing to show that the foundation was not continuous from top to bottom. In the fifth case there were plainly three cells out of shape and unusually large. That was all that showed on the surface; but looking into the cells, and especially after cutting in, it was easy to see that the top was about ¼ inch out of alignment with the bottom, the bees having built horizontally across from one starter to the other. But in sealed sections there is no indication that the section was not entirely filled with a single starter. Just how the bees manage it, or why they don't do the crooked work that reason ought to expect, is beyond me. I only know that, when the section is done, it's all right.

YOU ARGUE, Mr. Editor, page 412, that by taking away from a weak colony a comb just as soon as the queen has filled it, and replacing it with a comb of just-hatching brood, you can get the queen to lay in a smaller room as many eggs as a queen having a strong force of bees. Let us see. Suppose A is a strong colony and B a weak one. You take from B a frame of eggs and young brood and exchange with A for a frame of bees just emerging. There will be a big gain in B because there isn't the waiting for empty cells there would have been without the change. But you forgot about A, didn't you? Don't you see that A will have to do exactly the same waiting that you have saved B from, and that you have just hindered the queen in A by so much in *her* laying? [If you will turn to page 412 you will notice that we specify that, in order to get an equalization of queen-laying on the Hershiser plan, there would have to be a "proper coöperation on the part of the apiarist." In the case you cite between colonies A and B, it is apparent that, with no further manipulation, queen A would not be able to lay to her full capacity. But what is to interfere with the apiarist giving A an empty comb at the time he gives her a frame of young brood from B? If he does this, both queens might lay at pretty nearly an equal rate. This would be a case of proper coöperation on the part of the apiarist. It is true that it would take one extra comb. But in that case, of course storifying might be necessary. When we use the term "storifying we are using the excellent English word for "tiering up" one story on top of another. But suppose colony A does not need young brood, or, for that matter, the empty comb for the queen to lay in? It is possible that, by letting a queen lay to her full capacity, the strong colony might, as E. D. Townsend says, p. 419, be ahead of time for the harvest.—ED.]

SECRETARY W. Z. HUTCHINSON is doing some good work on plans for the next National convention at Detroit. See Convention Notices on page 525.

### HOW THE BEES ARE WINTERING.

REPORTS from nearly every portion of the United States seem to indicate splendid wintering; in fact, we may say that in all of our experience we do not remember the time when bees came through so well.

### HONEY CROP PROSPECTS FOR 1908.

WE have just gone over a large number of reports that have accumulated within the last few days. The prospects for a good honey crop are favorable.

For the North the winter has been mild, and spring not so early as to start brood-rearing out of season to be chilled later on.

Reports from California are somewhat conflicting. Early in the spring bountiful rains had come, seeming to insure a good honey crop; but since that time conditions have been less favorable in some sections. As it is, we judge there will be from a light to a fair crop; and should the situation change for the better, the crop may be a good one.

Conditions are exceedingly good for a flow in Texas. It begins to look as if the Lone Star State would redeem its reputation. Its bee-keepers could once boast of a certain crop year after year; but during the last two years it has been a failure in many sections.

Reports from other portions of the South are favorable. It is too early to predict any results in the central and northern States.

### SPRING OR FALL FEEDING; FURTHER REPORTS.

IN answer to our request, as given on page 337, March 15th issue, for brief reports, quite a sprinkling of responses have come in. The consensus of opinion summarized is about as follows:

1. Don't feed in the spring.
2. Give combs of sealed stores to hives short of stores.
3. If these are not available, and colonies are likely to starve, give liquid syrup; or better
4. Feed the strong colonies, and give their sealed combs to the weak ones short of stores. We consider this suggestion excellent.

To stimulate brood-rearing in the spring it is advised to scratch the surface of the sealed combs of honey next to the brood rather than to feed thin syrup. This is also good.

### WHAT AN AUTHORITY ON AGRICULTURE HAS TO SAY OF ALSIKE.

IT is seldom that we read any thing more to the point than which Mr. Alva Agee has to say of alsike, in *The National Stockman and Farmer*, as a forage-plant for farmers. He certainly can not be accused of booming the plant in order to help the bees. In answer to a correspondent he says:

> Alsike clover is sown with wheat or rye, or is seeded alone, like medium red clover. The seeds are about half as large as those of red clover, and therefore half the quantity per acre is sufficient. However, I doubt whether you want to seed to alsike unmixed, as it inclines to lie close to the ground, having more of the creeping habit than the common red. Moreover, its roots do not penetrate the soil as deeply as is desirable in a fertilizing plant. These are its two weak points. On the other hand, it is surer to make a stand than the red; it lasts longer in pasture and meadow, and it ripens more nearly with timothy. For many years our paper has urged the mixing of alsike with medium red for all land inclined to be unfriendly to clover. Alsike is pretty sure and dependable on any kind of land; and especially is it superior to the red on wet land. It makes a fine hay, but it yields less than the medium red. For pasture it is our most valuable clover. ALVA AGEE.

Bee-keepers would do well to help spread the doctrine among the farmers. They should get their local papers to publish it. It is good stuff.

### DR. WILEY STILL HAMMERING.

IN spite of the adverse glucose decision, Dr. Wiley is still on deck losing no opportunity to hammer the adulterators. At the International Congress of Mothers he had this to say, which we clip from the *American Grocer:*

> "If every mistress of a household in this country should demand pure foods," he declared, "there would be little difficulty in the courts, and manufacturers would soon cease making things which the mothers of this country would refuse to buy for use in their families."
>
> He added that there would be a cry against the mixing of certain substances with foods to make them palatable. Dr. Wiley called attention to the great importance of purity in such articles as butter, maple syrup, honey, and particularly of all dairy supplies.
>
> "My plea is," he said, "in order to secure pure food in the household that this and similar organizations unite to compel the manufacturers and dealers in food stuffs to stop all adulterations, to stop all misbranding, to stop all coloring, all deception, and furnish the pure, unadulterated, and palatable article."

That is the right kind of doctrine, and bee-keepers will be delighted to support Dr. Wiley in his efforts to have this state of affairs come to pass. When it does come, bee-keeping will be one of the best callings in this country. W. K. M.

### THE NEW POSTAL LAW.

IT is just as we thought. Many of our subscribers who were in arrears with their subscription to this journal were so simply by lapse of memory or from inadvertence. Since the Postoffice Department has issued its new ruling many have promptly replied by paying up all past dues, and, besides that, paying for a considerable period ahead. Many have accompanied their remittance with complimentary words for GLEANINGS and its management. These are always acceptable, and the sentiments expressed are

cordially reciprocated by us. We look on our subscribers as our friends — friends in deed as well as in words.

We were a little afraid some of our old friends would take offense at our announcement, but really we have no choice in the matter. The postoffice authorities wish to suppress the never ordered and never stop papers which are only advertising sheets for their publishers. We think most of our readers will perceive the new ruling is really for the benefit of the people as a whole.

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### A CORRECTION.

Mr. C. H. W. Weber, whose entrance-controller we referred to on page 355 of our March 15th issue, says it is not true that his device is provided with "darkened passageways" as we stated, but air-channels, through which the bees can not go, but through which the air can pass freely. We understood perfectly the construction of the device, but we were unfortunate in the use of the terms.

He says further that it is not intended to have the exitway entirely closed by means of a slide, except only in the very coldest zero weather for a day or two. After this the slide is shoved over to one side, leaving an opening of about one inch wide. This is covered by another wooden slide in such a way as to shut off the light and yet allow a free passage to the bees into the hive. When so used, he explains, there will be no confined bees, and consequently no commotion within the colony as feared by us. Our readers will please note these corrections in connection with page 355.

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### SAMUEL SIMMINS, OF ENGLAND, A PIONEER IN THE INTRODUCTION OF MANY NEW METHODS AND DEVICES.

In our last issue, page 415, reference is made to the fact that Mr. Samuel Simmins, of Sussex, England, introduced split sections in 1887; but this is only one of some of the numerous devices or methods which have been "discovered" in the last year or so, but which we find were described by Mr. Simmins in his book in 1887, and other writings, twenty or twenty-five years ago.

We will take, for example, plain sections, described and recommended by him; direct introduction of queens; hiving swarms on foundation starters; plural-queen system; thick top-bars to prevent burr-combs; wooden queen-cell cups; perforated cylindrical queen-cell cages (which have recently been patented in this country); division-board feeders; bleaching comb honey; drawn comb in sections; a large space under frames to check swarming; uncapping-machines, etc. While he was not the original discoverer of *all* these devices or methods, it is apparent that he was an early pioneer in the use of some things, and an originator of others that are now receiving special prominence, and which have been counted as "something new under the sun."

In regard to split sections, Mr. Simmins described minutely in the 1887 and the 1903 editions of his book, "A Modern Bee-farm," the exact, precise method for putting foundation in split sections as described by Mr. J. E. Hand in these columns within the last year.

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### BE CAREFUL HOW YOU LABEL OR SELL YOUR HONEY; THE NATIONAL LAW ON MISBRANDING.

One of the provisions of the national pure-food law is that every article of food bearing a label, or that is sold as a certain product, must not misstate the source whence such food was produced. Applying this to the honey business it simply means that one can not sell heartsease or mountain sage as "white-clover honey" without getting into trouble with Uncle Sam, providing, of course, that such goods were shipped from one State to another.

A case has just arisen between two bee-keepers. The buyer has sent us the correspondence, showing that the seller wrote that he had a nice lot of white-clover comb honey to sell. A correspondence sprang up between the two parties. The buyer agreed to take the honey, paying for it cash in advance. When it arrived, instead of being a "nice lot of white-clover honey" it was heartsease and other fall honey, poorly graded and badly packed. The buyer demanded the return of his money, and the amount he paid in freight.

The producer refused to do this, saying he did not guarantee the source of the honey, etc. The buyer, on the other hand, sends us the correspondence to show that the seller was offering a "nice lot of white-clover honey." On the assumption that it was "white clover," and a "nice lot," he consented to send the money in advance. He now has complained to us, suggesting that we "show up" the other fellow through these columns. We are replying by saying that, under the conditions, on an interstate deal (if he represented that the honey was from white clover when it was not), the producer will have to return the money or be liable to a fine of $500, imprisonment, or both. In this case the party evidently does not know what he is "up against."

We have thought best to mention this incident for the benefit of the few who either do not know or who are willfully regardless of the fact that, when they sell honey to a party outside of their own State, it must be exactly as represented as to the source, otherwise they will be liable to prosecution by a United States officer. It is bad enough to violate a State law, but a good deal worse when a national law is broken.

As we understand it, Uncle Sam does not attempt to adjust differences between producer and buyer if goods are improperly packed, or broken in shipment; neither will he prosecute if the goods are not as represented, except in cases where they are sold as coming from a certain district or from a

certain source when they are not, or otherwise misbranded. No more can Michigan or Ohio cheese be sold for York State cheese. They must be *exactly as represented.*

It is but fair to repeat that only a very few of our readers need to be reminded of this provision of the national pure-food law. The great majority would not knowingly misbrand, law or no law.

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### GLUCOSE IN AUSTRALIA.

THE *Australasia*, published in Melbourne, Australia, prints the following in its issue of Jan. 4, 1908:

With regard to the company which has been formed to introduce the manufacture of glucose to Australia, a further step forward has been taken. It has been decided to send Mr. W. L. Engelbrecht, Mount Gambier, to America to select the most up-to-date machinery and get all available information as to the best processes for the manufacture of glucose. He will also visit Germany and England, and continue his inquiries there. In America glucose is made most largely from maize, but in Germany from potatoes. The machinery selected will be adapted for both. Mr. Engelbrecht will leave for America per first boat in January. The head works will be in Melbourne; but branches for dealing with potatoes will be established at Mount Gambier and Warrnambool, and in Tasmania.

We are sorry for our Australian friends, more particularly the bee-keepers. What can be the matter with the Australian people that they should desire to eat glucose? Cane syrup is infinitely to be preferred—in fact, glucose can not be eaten until some kind of good syrup is mixed with it. In this country its use has been ruinous to the manufacture of jams and jellies, and certainly it has always been used to lower the intrinsic value of any food in which it is used. In fact, its use is to cheapen or adulterate, *never to improve any thing.* It has also created a number of millionaires at the expense of the poorer classes. The Australian bee-keepers will have their markets lessened if this scheme materializes. W. K. M.

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### IN TERROR OF PARCELS POST.

THE reporters in Washington are all agreed that parcels post stands a poor chance of being realized at this session of Congress. One reason they assign for this is interesting; namely, that members of Congress are being fairly deluged with letters from country merchants who think that parcels post would be the ruin of their business. As a matter of fact, great sums of money are being spent in creating a public opinion adverse to any movement of the kind. The men who are opposed to this reform are possessed of means, so that there is no trouble in getting funds; but it has been noted they are exactly the same class who resolutely opposed free rural delivery.

On the opposite side, the farmer and his friends are apathetic, and have no paid lawyers or lobbyists to influence the legislators at Washington. It is, unfortunately, true that the average farmer has no inclination to write or time to devote to the question. It is different, however, with the women of the farmer's family. The parcels post appeals to them. By its means they could send to their home town for all sorts of small orders, such as every housekeeper really needs, without making a journey of so many miles. It is a wonderful convenience, more particularly when any one in the house is sick, or, as is the case with many, nobody is available to go for the goods required.

The only objection made thus far to parcels post is that it favors unduly the mail-order houses. But what are the facts? The mail-order houses do not care for the parcels post, because it is said they have an "understanding" with the express companies. In many instances the express people have greatly helped their business, and it is true they have assisted the mail-order houses in every possible way. In any case, the greater part of all mail-order trade is done by freight, and always will be, so that, after all, the country merchant sides with his old enemy, the express company, against his true friend the farmer, who has always patronized him.

If country storekeepers kept every thing in stock required by the farmer and his family there would be no need of parcels post; but, on the contrary, they keep only the bare necessities of life, and it would be absolutely impossible for them to keep on hand every thing the modern housekeeper or farmer requires. The rural dwellers of the United States have little idea of the wonderful convenience of parcels-post service; but they can imagine a good deal. It makes country life far pleasanter for all, more particulary for the women folks, who are almost constantly in need of some small order from "town."

The farmers should consider this matter carefully, and endeavor to influence others so that, the coming fall, every Congressman will be compelled to state whether he prefers the express companies to the farmer and his family It is either one or the other.

W. K. M.

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### THE LOGICAL RESULT OF THE GLUCOSE CORN-SYRUP DECISION.

ACCORDING to the newspapers of Chicago, the Corn Products Co. has acquired 1200 feet of dock frontage on the Chicago drainage canal; by leasing the same for 99 years. It has purchased 110 acres of land in immediate proximity, on which will be erected a five-million-dollar plant for the manufacture of glucose on a grand scale. A new town will be built around the factory, to which the name Argo has already been applied.

This shows the tremendous importance of the "corn syrup" decision, for, as already stated, the Royal Baking Powder Co. and the Western Grocery Co. have both acquired immense factories quite recently for the manufacture of glucose. Under the proper name of glucose it was hard to sell, because the general public had learned to dislike it; but under the name of "corn syrup" it has obtained a new lease of life; and the starting-up of three immense factories proves the agitation against it had a solid foundation

in fact. Had Dr. Wiley's counsels prevailed, it is safe to say these three factories would never have been started. W. K. M.

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### THE NEW GRADING-RULES FOR WESTERN HONEY; THE PRACTICE OF NOT SEPARATORING SECTION SUPERS DISCRIMINATED AGAINST.

THE following letter, received from the Manager of the Colorado Honey-producers' Association, on the subject of grading western honey, will be read, we feel sure, with interest:

*Mr. Root:*—I am sending you herewith a copy of the new grading-rules adopted by the Colorado State Bee-keepers' Association at its last annual meeting.

Experience had shown us that, while our former rules were satisfactory to most of the bee-keepers of Northern Colorado, where the larger part of the crop is always white, there was some dissatisfaction with them in other sections of the State where sometimes a considerable portion of the comb-honey crop is light amber in color and the cappings of the same also off in color. Under the old rules such honey, while it was a nice article of good flavor and appearance, well filled out and capped over, had to be graded as No. 2, although we are told it was very often sold again by jobbers in the East as No. 1 white.

Another matter that received attention in the revision of the rules was the weight of individual sections. We found that the term "all sections well filled" is sometimes misconstrued to mean also a section of honey that is capped over and securely fastened to the wood, but the comb so thin that it could not conscientiously be called a No. 1 section of honey, weighing only 12 to 12½ ounces. Such honey packed with quite heavy sections would bring the weight of the case up to the required standard; and while it might pass through the hands of the jobber all right, it would prove unsatisfactory to the retailer, as the variation in the weight of the sections of honey would be too great to permit their being sold at a uniform price. Not only this, but, according to the views of the committee revising the rules, a standard 4¼ section filled with honey should weigh not less than 13½ ounces in order to be classed No. 1.

As practically all the comb honey produced in the State is full separatored, the new rules touch only upon the average net weight of half and non-separatored honey without going into details.

The committee has aimed to secure grading-rules which will result in a close grading of the crop according to finish, color, and weight of individual sections, so as to make the handling of our honey entirely satisfactory and profitable to the retailer.

The recommendations cover the most important points to be observed in preparing and handling the crop after it leaves the hive.

Many of your western subscribers would, I believe, appreciate it if these new rules were published in GLEANINGS.

THE COLORADO HONEY-PRODUCERS' ASS'N.
Denver, Col. F. RAUCHFUSS, Mgr.

The grading-rules referred to in the letter above, it will give us pleasure to place at the head of our Honey Column along with the eastern grading-rules.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13 1-2 ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13 1-2 ounces.

Cases of half separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade, wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 lbs. net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

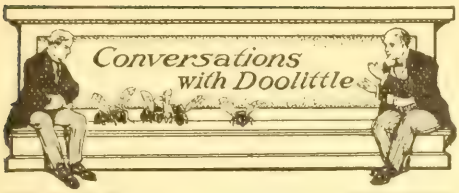
After receiving these rules we wrote to Mr. Rauchfuss, stating it was our opinion that, had these rules been in effect, some of the complications that arose over that car of misgraded honey, referred to on pages 339 and 358, March 15th issue, might have been avoided. In referring to this particular car he says:

I have no difficulty at all in locating the origin of this car, as it is evident that it was produced in the western part of this State. A good deal of missionary work seems to be necessary yet in that section when it comes to producing and grading comb honey. I was over there last fall and found there is quite a little honey produced yet by people who don't pay any attention to grading-rules, and apparently are not willing to learn, as, so far, they have always been able to dispose of their crop to careless buyers and speculators at somewhat near the figures that careful bee-keepers were getting for their crop; and as long as such conditions exist we can not hope for much betterment until the time arrives when such stuff as illustrated on page 358 of GLEANINGS can not be sold at all, as comb honey, and can be sold only for what it really is—that is, cull honey, cut out and sold that way. If you read over the grading-rules adopted by the State association you will find no place mentioned for such honey as illustrated there, and it is not our intention to have such goods as that ever go out of the State. Regarding the use of separators, I want to say that at the present time we have our members (by this I mean the members of the Colorado Honey-producers' Association) in line, so none of them are producing comb honey without separators. Most of them use full separators, and a very few half-separators. During the past season we have had only one small lot of honey which we bought from a farmer in the house, that was non-separatored, and it was a poor lot. We therefore graded it over, and sold it in the local market; but to my certain knowledge we have not shipped a single case of unseparatored honey this year.

THE COLORADO HONEY-PRODUCERS' ASS'N,
Denver, Col. F. RAUCHFUSS, Mgr.

We may explain that, when we wrote Mr. Rauchfuss, we deplored the fact that some bee-keepers in Colorado were still trying to get along without separators, and that we hoped the time would come when all the bee-keepers in the Rockies would see the importance of separatoring their supers. We are glad to see that the practice of leaving them out is becoming obsolete; at all events, the new grading-rules discriminate against such non-separatored honey to such an extent now that the producer can not afford not to use them. It was a penny-wise-and-pound-foolish policy before; but the conditions of the new ruling will make it even more foolish.

Of course we assumed that the attitude of the Colorado Honey-producers' Association as a whole is plainly against misgrading honey and trying to get along without separators; but it is a pleasure to see that the manager so plainly declares against it. We are glad to say that the great bulk of the Colorado honey on both sides of the Rockies is of the finest quality and up to the grading. It is only occasionally that we run across a bad lot. We find the same to be true of other localities where good honey is produced.




VOLITION OF QUEENS; SHAKING BEES, ETC.

"I should like to have Mr. Doolittle answer the following questions through GLEANINGS, believing that its readers will be interested in the subject.

"1. Does the queen lay more drone eggs as she grows older?

"2. Can the queen lay eggs at will?

"3. What is a worker doing when she shakes her abdomen over the combs with a gyrating movement, doing this on brood-combs over eggs, larvæ, and sealed brood? Some bees following after, seem to be doing something with their heads. I see that a worker that comes from the fields with pollen on her legs does this as well as the other bees, and there must be some reason for it.

"In order to make a thorough investigation of these matters, a one-comb observation hive will be necessary, with squares marked off on the glass, so that certain portions of the comb can be kept track of under all of the development of the brood under or beyond these squares, a memorandum being kept of the whole.

"E. A. NEWELL, Massillon, Ohio."

In answer to the first question I would say that, during the time between the fertilization of the young queen and when the spermatozoa begin to fail, the number of drone eggs she may lay depends almost wholly upon the wants of the bees in the colony of which she is considered "mother." I know that this may be considered as heresy among those who have been telling us, during the past, that a young queen never lays eggs in drone-cells for the rearing of drone brood during her first season of laying; but hundreds of cases, if not thousands, which have come under my observation, prove to me that a queen which has been laying from two weeks to two months will lay just as many drone eggs under the same circumstances as will the queen which is from three to five years old, unless the spermatozoa she has been carrying have partially or wholly failed. With such failure, any queen will lay eggs which will produce only drones, just the same as will the eggs laid before she has mated. I said "under the same circumstances," and by that I mean any circumstances under which the colony wants drones. Such circumstances are generally when a colony is strong enough in bees to begin to think of swarming, with exceptional cases where the bees take it into their heads that they should supersede a queen of the same year's rearing Where I have had early swarms, or made colonies early by the shaken-swarm plan I have, scores of times, found all the drone comb in the hive full of drone brood within a month of the time the young queen (which the colony had reared, or which had come from the cell I had given) had begun to lay where the colonies containing them became populous from the amount of brood the combs contained after swarming. I have thought many times of writing this matter up, when I have seen it stated that a queen of the first season rarely if ever laye any eggs for drones that season, but never got around to it.

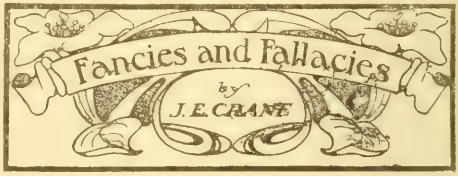
Twenty to thirty years ago, when I used natural swarming for my increase, I saw many times much drone comb built and filled with drone brood by second swarms; but, as a rule, all after-swarms are not strong enough as to number of bees to wish any drone brood. Then I have many times gotten a young queen at the head of colonies a week or so before the time I expected the honey harvest to commence; and, in order to get a "great big yield" of section honey, I have taken out all the combs not well filled with brood, and those having mostly eggs and larvæ in, filling up the hive with combs from which the brood was just emerging, saying to myself, "Now I have you, for colonies do not swarm with queens which have been laying only a week or so, enough so that they have gotten fully settled down to business," only to have such colonies fill every drone-cell the hive contained with drone brood, and swarm inside of two weeks, just when the honey harvest had nicely begun. From this experience, covering a period of nearly forty years, I am led to say that any and all queens lay drone eggs just in accord with the wants of their colonies, and that the age of the queen has nothing to do with the matter so long as she is capable of laying eggs which will produce worker bees. After she has passed the stage of laying eggs which are fertilized, she becomes what is termed a "drone layer," and can lay no other kind, no matter how much the bees may desire it otherwise.

Regarding the second question, I can see no other answer than yes; as, so far as laying is concerned, the queen is obliged to will to do just as the bees will. In other words, she *wills* just as the colony wills, every time, when it comes to the egg-laying part. She lays only when the bees feed her prepared food in sufficient amount, and, quite often, after the bees have fed her so that she has laid a large number of eggs, if the weather turns bad, they will not allow these eggs to hatch, removing many of those which would hatch at once, and keeping others for an indefinite period, then allowing them to hatch, or destroying them, just as the weather seems to justify. These things have come under my observation quite a few times during May and June in very fickle weather.

But from a portion of our questioner's letter which was not for print I judge that he wishes to ask if the queen can lay either drone or worker eggs at will, as he speaks of the pitch of the cells having much to do with the queen laying eggs in drone comb. Be-

lieving that is what he wishes me to express myself about, I will again answer yes. I have every reason to believe that the queen knows whether she is laying eggs which are to produce drones or those which are to produce workers. Those who read the conversation on drone comb in Gleanings for Feb. 1, 1908, will see how I allow in most of my hives drone comb in only one frame, and keep this frame at the side of the hive so that it may be kept unoccupied by drone brood as long as possible. Well, I have often had colonies start brood-rearing in spring on the side of the hive furthest from this comb, and as the season advanced, and the bees desired drones, and before worker brood had come within three combs of this outside comb with drone-cells, the queen would travel clear around those three unoccupied combs and lay in all of the drone-cells, without putting a single egg in any worker-cells all about the margin of this drone comb. Further, in some cases, all along the edges of the drone comb there may be drone and worker cells mixed, when every drone-cell would be picked out and eggs deposited, without a single egg in *even one* worker-cell. As soon as all the drone-cells were occupied with eggs the queen would return to the brood-nest and go to laying worker eggs as she was doing before. I know that there is now and then a case where a queen will deposit eggs in drone comb, a part of which will produce workers, and the other part drones; but in this case I am inclined to the supposition that the "queen wills it," rather than that the size, depth, or pitch of the cell has any thing to do with it. Of one thing I am certain from many observations; and that is, where the bees desire drones *every* cell of this drone comb will contain only drones, no matter whether the cells are a shade smaller, a little deeper or a little shallower, or whether the pitch is different. The only thing which confronts us, then, is, whether there may be times when the bees and queen want worker brood but are prevented because of the size of the cell. To this I should say no, for I have often confined a nucleus, which had a queen just commencing to lay, to cells wholly of the drone size, and had nothing produced from these cells but worker bees. From these observations, I conclude that, where both drone and worker brood are found in drone comb at certain times, the bees and queen are willing to have some drones as well as workers in the hive.

Regarding the third question, I will frankly say that I do not know; nor have I ever found anybody who does. I have asked a great many bee-keepers about this, and the most of them seem willing to acknowledge that they do not know why this shaking process is gone through with by certain bees in certain colonies any more than they know why certain bees from certain colonies will arrange themselves in rows all up and down on the outside of the front of the hive, and stand there and scrape away, up and down, with a swinging motion of the body, for hours and days at a time. Some have claimed that, when this scraping act was begun, the bees intended to swarm soon; but scores of colonies, keeping it up off and on for a month without swarming, have shown the falsity of any such conclusion; and, so far as I know, *all* are alike ignorant as to what the bees are thus exercising for. I have been told many times that this shaking motion of the bees is to loosen the pollen from the pollen-baskets, so that it would slip off easily into the cells when the bee wished to leave the loads; but this will not account for the matter, for, as our questioner tells us, the majority of the bees which go through this gyrating exercise do not have pollen in their pollen-baskets. Then this "gyrating" is confined, as is the scraping, to certain colonies, so that it can not be of universal necessity in the economy of the hive, and for this reason it will be more difficult to come to any direct conclusion in the matter, even if it were possible to do otherwise. I have stood, sat, and lain beside a single-comb observation hive for hours that have lengthened into days and weeks, but I never saw a bee so gyrating in a one-comb observation hive; and until I do find one, the "marked-off squares" will not be needed. Like our questioner, I believe that all are interested in these things, even though it may be of no money value to us, and, like him, I "should like to know what the bees are doing it for," and what the scraping motions are for; but so far I do not know, nor have I found any one able to tell me.




Dr. Miller says, page 7, Jan. 1, that bees when taken from a cellar can be placed without reference to former location. True; and, more, they can be moved at almost any season if a board or other obstruction is placed in front of the hive for a few days.

Page 8 the doctor wonders if there is not a larger proportion of Prohibitionists among bee-keepers than any other class. I believe he is quite right. I remember attending a large convention of bee-keepers some years ago, when it seemed as if nearly all were of this persuasion; and, more, a large number were in favor of a party for carrying their principles into effect.

On page 84 Stenog gives some rules from C. J. H. Gravenhorst, republished in the *Bee-keepers' Review*, as to why some colonies do so much better than others. Now, it seems well to know why it is; but can we not, while aiming at this as an ideal condi-

tion, spend our time more profitably on a few more colonies than in trying to bring all up to this standard?

A. I. Root's advice to rest, page 104, before eating is (to those not very strong) one of the best things between the covers of the Jan. 15th issue of GLEANINGS; and if heeded it is well worth more than one year's subscription. Better by far take the rest before than after, but better after dinner than not at all.

I fear your editorial on page 18, on the "big field for bottling honey," is somewhat overdrawn so far as New England is concerned. Few stores here in this section that can be persuaded to sell bottled honey, but they have an opportunity to do so, and a single firm in a single year has put out as much as 17 carloads of extracted honey.

Mr. Holtermann, in reporting the Michigan convention, page 99, says Mr. Aspinwall advocated continuous passageways between brood-frames and sections, as it gives better ventilation, and the bees can go in a straight line to reach the sections. This is all very beautiful in theory, but I fear not in practice. I believe Mr. A. has great faith in ventilation. All right; but if too free communication is given, bees are more apt to carry up pollen, and the queen to lay eggs in sections, to say nothing of the bits of dark wax or cappings to injure the appearance of the finished section.

Glucose! glucose! glucose! corn syrup! corn syrup! corn syrup! If a man steals a loaf he is a thief. If he robs a bank of $100,000 he is only a defaulter. If a man mixes 10 lbs. of glucose with 90 lbs. of cane syrup it is adulterated; but if he mixes 90 lbs. of glucose with 10 lbs. of cane syrup it is corn syrup

Well, defaulters are not so respectable as they used to be; and if the so called corn syrup is as bad as represented, the people will soon find it out, and the reputation of the offspring will be no better than its ancestor, glucose. Let us be patient Meanwhile let the people know how it is made.

Some very interesting facts and articles have appeared of late in GLEANINGS in regard to feeding bees for winter. J. L. Byer, page 99, prefers to feed syrup made two parts sugar to one of water. This has been my rule for many years. But unless I mix some honey with it there is apt to be some loss by granulation.

Along this same line E. W. Alexander, p. 99, says, "If it requires 20 lbs. of honey to winter a colony, this additional surplus would be worth at wholesale about $1.50. Now, if in its place we use 14 lbs. of sugar to make 21 lbs. of very thick syrup, costing about 75 cents, or half the amount the honey will bring, there is a saving of over $400 in an apiary of 600 colonies; besides, the bees are given a much safer and better winter food." I believe no one will dispute the statement that the sugar syrup is a safer food, as a rule, than honey—especially late-gathered honey. But that 14 lbs. of sugar made into 21 lbs. of syrup, and fed to a colony of bees, is equal to 20 lbs. of sealed honey, there may be, it seems to me, some question.

Dr. E. F. Phillips tells us in "Miscellaneous Papers on Apiculture," pages 7, 8, that the water in thoroughly ripened honey will not exceed 25 per cent, and is generally not more than 20; and some very ripe honeys will have as little as 12 per cent of water, while the thick syrup that Mr. Alexander speaks of, page 29, is 33⅓ per cent water. It would seem that this extra 13⅓ per cent of water must be eliminated before we can get a correct comparison of the actual feeding value of the sugar. To this must be added the loss caused by the activity of the bees in storing the sugar syrup, and for wax for capping, so we can not safely figure on more than 18 lbs. of sugar stored that will be of equal value to the honey extracted. It will probably be less. Thus we must reduce the total amount of honey secured from 600 colonies 1200 lbs., which, at his estimate of 7½ cents as its value, would make $90. To this must be added the cost of the labor of extracting 12,000 lbs. of honey and feeding 12,600 lbs. of syrup, which might be from $25 to $50 more.

Now that I have GLEANINGS for Jan. 1 before me I think I must stir up my good friend Doolittle a little. In answering the questions of T. E Howe, page 23, Mr. Doolittle assumes that basswood always yields honey when it blooms, and always blooms when not killed by frost. This is undoubtedly true at Borodino, for Mr. Doolittle would no more knowingly make a false statement than cut off his right hand; but what is true of Borodino may not be true of some other places. During the past five years I have seen basswood bloom more plentifully than ever before, and yet fail to yield honey appreciably.

There are places where basswood has yielded even better than for Mr. Doolittle or Dr. Gallup. Mr. O. H. Townsend, of Otsego, Mich., told me last August that he once had a colony that gathered over 40 lbs. (I think it was 45 lbs.) for three days in succession, and would have gathered more, but that by 4 o'clock P.M. the hive was so crowded there was no room for storing more. So it seems to me that much depends on location as well as the amount of bloom. Near the bottom of page 23 he says, "The fruit-buds and leaflets to all trees with which I am familiar are formed in June and July of the preceding year, so the results of next season's honey-yield, so far as the buds and flowers are concerned, are already in embryo on the apparently bare and lifeless branches of the basswood-trees. as we behold them these zero days of winter." Now, this statement is quite true of many fruit-bearing trees as the apple, pear, plum, peach, etc.; but when it comes to the basswood, I believe my friend is a little off. If we look carefully we shall find that the blossom-bud of the basswood comes out of the new or present season's growth of wood at the base of the leaf, or where the present season's leaves join the

stem close to the axillary leaf-bud for next year, and does not form till after the present season's leaves appear. The fruit-buds of the grape are somewhat similar, and come along the new growth of wood opposite the leaves. I have sometimes known frost to kill the basswood-buds, but it was very late when the basswood was partly leaved out, and the new blossom-buds formed on the present season's growth of wood.

### I AM "OVERSTOCKED" WITH INFORMATION

When I started in the bee business I was puzzled to know just how many "gums" I could keep. I got a couple of hives and then wondered if that was too many, or if I could keep a thousand. I thought I would keep three or four hives; but one day I happened to find out that a neighbor, only two blocks away, had *six* colonies, and my heart sank within me. All my future hopes as a bee-keeper were blasted. His bees outnumbered mine, and, as I thought, would, whenever a flower had any juice in it, beat mine to it. I wondered if he would not get discouraged and quit. I thought I might buy his bees; but he would not sell, so I watched sorrowfully for my poor little darlings to starve. They did not gather any honey, and I was satisfied that my locality was overstocked, as there were eight hives within a radius of —well, they were all the bees I knew of in the county.

I went to a man who knew all about bees, they told me. In fact, he admitted that he did when I accused him. He had reared queens, he had bought queens, he had imported them, he had done every thing with them; and he told me confidentially that I could get enough honey for table use, if I did not make a hog of myself, provided I kept but eight swarms; but as sure as I kept more I not only would get no honey but would have to feed. It was like this: It takes power to propel a bee through the air; there is no such thing as perpetual motion, and in order to generate that power it takes honey, which was to the bee what coal is to the locomotive. Now, after you have more than eight colonies the bees have to go so far to get enough honey to supply power that it is all digested before they get home, and they starve. Then often, in going so far they are never able to find their way back. This, you know, was not idle theory, but scientific facts. But I thought I would keep a number just for the fun of it, even if I did have to feed. The first year I got a little honey. I increased to fifteen, and got less. Just as he told me. The next year I increased to thirty, and got still less. Just as he told me, The next year I increased up to sixty, got nothing, and had to feed. Just as he told me. The next year they all did better than they ever did when I had only two. Then I began to think that possibly the crop or something else had to do with success or failure besides the number of colonies. I would just read the bee-journals and find out. I read two articles, and that settled it. The first article said that bees gathering nectar was just like dipping water out of the ocean with a pint measure. It did not make a blamed bit of difference how much you dip out, the plants will all be full again before another bee can poke its nose in, and a few thousand colonies more or less is nothing.

The other article substantiated the first as follows: When bees gather nectar it is just like "shuckin' corn." There is just so much nectar; and when the bees go out and shuck it there is "nothin' doin'" till a new crop is grown. You want only just the right number of bees that will gather all the nectar; and if you happen to count your blossoms wrong, and have a dozen or so of bees more than there are blossoms, why, those poor extra little devils will have to starve, and you, you incompetent bee-keeper, their blood be upon your head! It is often amusing to read the arguments on both sides of the overstocking question; and when there is a failure it is customary to lay it to overstocking. I think a good deal of it is imagination, superstition, or something like it. One writer has nearly a thousand colonies in one place, but they all say he has an extra good place —buckwheat as far as you can see, all buckwheat. He frequently gets a surplus from white clover. In this locality buckwheat never does produce any white-clover honey, but still this is not a good locality.

Here is an experiment that I should like to see tried. Necessarily, from the magnitude of the enterprise, it should be undertaken by some gentleman with philanthropic tendencies. The government might try it. I think it would give us some light on the overstocking problem.

Take an average white-clover locality, and take fifty colonies and set them all on a big wagon-scale. Then take five hundred more, put them on trolley cars and run them up beside the fifty. At night weigh the fifty and record the weight. Then during the night run those that are on the cars away for ten miles or so. Then the next night again weigh the fifty and keep a record. Then bring back the five hundred beside the fifty, and at the end of the day weigh again, and so on till the flow is over. Then average up the honey the fifty gathered when alone and when the five hundred were with them, and see what the difference was, if any.

That would be an interesting test, and before it came off all the bee-keepers could have a guessing-contest as to results. I will register my guess now. I am not theorizing nor arguing — just guessing. My guess is there would be two per cent difference.

## FANCY COMB HONEY FROM COLONIES CURED OF FOUL BROOD.

### How to get Rid of the Disease without Sacrificing the Honey Crop.

BY R. F. HOLTERMANN.

In connection with this article are shown two engravings of the first-prize honey exhibited at the fruit, flower, and honey show at Toronto, and produced by I. A. Thomson, Brittania, Ont. This was also a portion of the honey which was sent by the Ontario Bee-keepers' Association as a Christmas present to His Majesty King Edward.

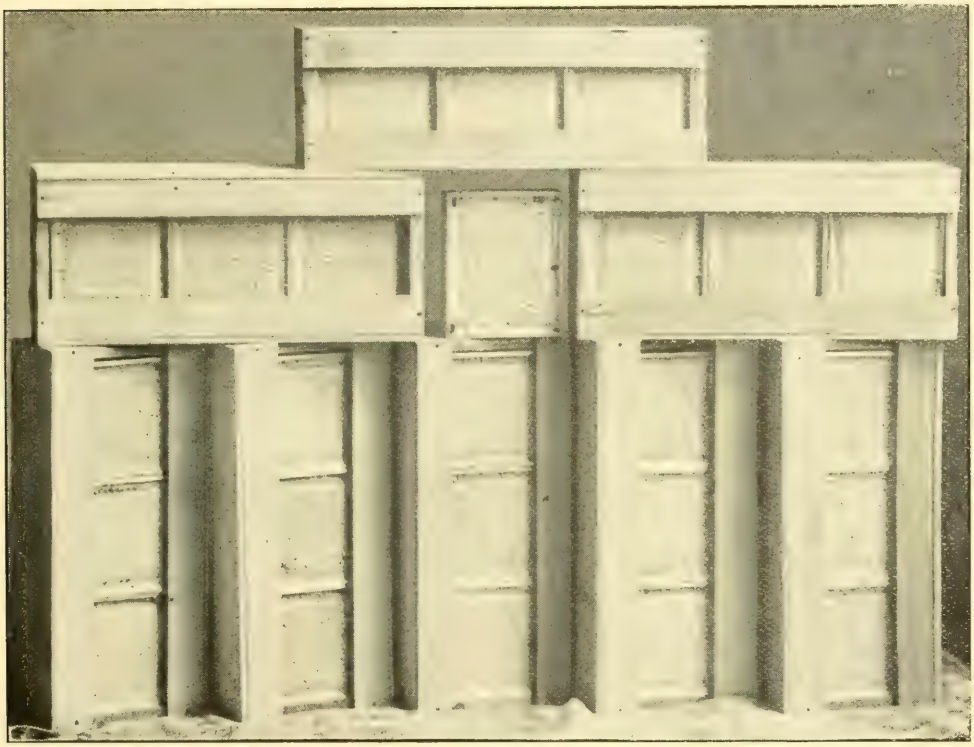


FIG. 1.—PART OF THE HONEY SENT BY THE ONTARIO BEE-KEEPERS' ASSOCIATION AS A CHRISTMAS PRESENT TO KING EDWARD.

This honey was produced in sections containing full sheets of foundation fastened with melted wax on the sides and top; ⅛ inch space was left between the foundation and the bottom of the section to prevent buckling.

Incidentally these engravings show that profit may result, even under adverse conditions, and also that a foul-brood inspector may make himself very useful by dropping a few words of advice which may not cost any additional time.

Mr. Thomson, who is a very thorough and intelligent bee-keeper, stated that, on finding foul brood among his bees, he notified the Hon. Nelson Monteith, Minister of Agriculture for Ontario, at Toronto, as the law requires, and he in turn sent Mr. H. G. Sibbald, of Claude, Ont., who is foul-brood inspector for the district. Mr. Sibbald, after his arrival, went carefully through the apiary, and out of seventy-eight colonies he found eighteen diseased. Mr. Sibbald then told him that, if he liked, he could cure the eighteen, and wait to see whether any disease would develop in the remaining sixty. Or he might treat the entire lot by following a certain plan outlined, and at the same time secure what crop of comb and extracted honey that might be obtained. The plan recommended and carried out was as follows:

The queens in six of the eighteen diseased colonies were caged, and these six were removed to a secluded spot in an orchard. The bees in the remaining twelve were shaken upon starters, and the combs of brood and honey were piled two supers deep upon the six hives with caged queens.

In four days the twelve on starters were again shaken upon full sheets of foundation, and when the comb was nearly completed top stories were given containing full sheets of foundation, and the twelve colonies then run for extracted honey.

There was left, then, only the six diseased colonies with their queens caged, and with two supers each, containing the old combs of the other twelve. These were treated in ten

days as follows: The top stories in each with their combs of brood and bees were removed and placed on a new stand. The bees in the next super and those in the brood chamber were shaken into a hive containing starters, and the queen released, and the two shaken hives again piled on top of one of the former top supers removed to the new stand.

In four days the shaken hives were again shaken upon full sheets; the starters as in the first case were taken to the honey house and rendered into wax.

These last six hives treated, being strong in bees, were given section supers containing slatted separators, wide frames, and 4×5×1⅜ sections filled to within ⅛ in. of the bottom, with sheets of extra-thin section foundation attached to the section at the top and at the two sides by means of a brush and melted wax.

In four days the old hives remaining were shaken on starters followed by a shaking

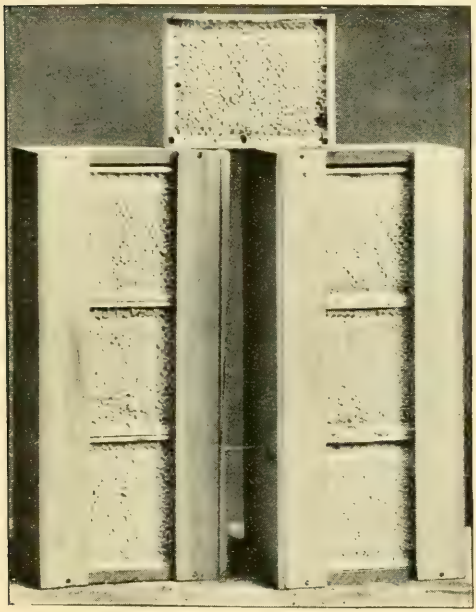


FIG. 2.—COMB HONEY PRODUCED IN A COLONY JUST CURED OF FOUL BROOD.

upon full sheets as before described, the combs being taken away for rendering. These colonies, also being extra strong, were run for comb honey as outlined above. As soon as the sections were well under way, and when they would be considered by most advanced bee-keepers to be too far under way, the supers were raised up and others put underneath.

Now as to the remaining sixty colonies in the yard, which had no foul brood as far as could be seen. Not caring to run any risk, however, and wishing to make a clean job of the apiary, Mr. Thomson carried out the above plan, with the exception that the bees were in every case shaken upon full sheets of foundation and received no second shaking. These were run for comb and extracted honey, the same as were the foul-brood colonies; and although only a medium year in the locality, at the end of the season there were 88 colonies in good condition, 3000 lbs. of extracted honey, 1000 lbs. of comb honey, and 1100 lbs. of beeswax.

The above plan necessitates careful work, and care must be taken not to expose diseased comb or honey to the bees. Mr. Thomson felt sure he had a clean yard when through. Every thing was done when honey was coming in. Every scrap of the old comb was melted into wax, the refuse burned, and a thorough cleaning-up was effected. The plan is well worth giving to bee keepers, particularly as there is so much foul brood in some sections, and as this method not only does not interfere with the honey crop, but leaves the apiary in 99 cases out of 100 in better condition than before.

Brantford, Ont., Can.

## TRANSFERRING.

### A Beginner's Experience in Cutting Combs from Old Box Hives and Transferring them to Modern Hives.

BY F. DUNDAS TODD.

[Several years ago, after we had made several hundred pictures, some of which appeared in these columns, and having read various books on photography designed for amateurs, we decided to take some journal devoted to the art in order that we might keep abreast with the times. The *Photo-Beacon* was recommended; and having subscribed for it we were delighted with its contents—especially the editorials.

Not long after, a correspondence sprang up between its editor, Mr. F. Dundas Todd, and the editor of this journal. The former was seeking pointers on the subject of *bees*, and we were equally anxious to gather pointers on the art of making pictures. The result was a pleasant correspondence, during which we "swapped" ideas.

We said we were delighted with the editorial work on the *Photo-Beacon*, and so we were. Mr. Todd the editor, instead of writing along conventional lines, adopted the simplest and purest Anglo-Saxon, using short, crisp, and clean-cut sentences. How easy it was to follow him! We could almost see him in his dark-room showing us *how*.

It finally developed that our friend found it necessary to sever his connection with the *Photo-Beacon*, on account of failing health on the part of a member of his family, and go west He had already been keeping bees in a small way, going into the study of them with all the ardor and intensity of a professional man. On arriving in his new field he began bee-keeping anew in a larger way. And now, to make a long story short, he has submitted to us manuscript detailing the experiences of an amateur bee-keeper. When we say "amateur" we do not mean one who is "amateurish," but one who is expert and who takes up the study just for the love of it. Such an amateur is Mr Todd. Along with the manuscript came a number of photos which it can be readily imagined, would be first-class from the standpoint of a professional picture-maker.

We take pleasure therefore in submitting the first installment, which, we apprehend, will not only be seasonable but particularly welcome to the amateur and to the beginning class of bee-keepers, of which we have many in our GLEANINGS family. The style is the same simple clean-cut English used in his photographic writing; and as one reads the lines he can scarcely fail to understand and to imbibe some of his enthusiasm

It is but fair to Mr. Todd to state that we are taking the last of the series and putting it first, because it comes at *just the time* of the year when most persons,

if they transfer at all by the direct method, can do it to the best advantage.

The other installments will follow in consecutive order and at their conclusion we hope to put them in pamphlet form for the benefit of beginners and amateurs who may not have time to read the more extended works now offered for sale.—ED.]

When I started keeping bees in a modern hive I would have scouted the idea of ever having to wrestle with the problem of transferring; yet I had performed the operation in less than three months. That was to be my first and only venture; but in my second year of bee-keeping I transferred twice, and I suspect I shall probably beat that record in my third season, as I am in a locality where gums are many and hives are few, and I am just starting in afresh.

There are two ways of transferring—the direct and the indirect. The latter is by far the more preferable, I suspect; but I have never practiced it, for the simple reason I have always wanted to transfer when the conditions demanded the direct method. I hope to follow in the future the indirect route, but at the same time I do not look upon the other any more as a serious ordeal.

In the direct method the combs are cut out of their original position and transferred to the frames of a regular hive; in the indirect method the *bees only* are transferred, and that gradually, to their new home. It is the first I am about to describe and illustrate.

My first venture in transferring was easy—merely changing the bees and combs from the regular Hoffman frames to the Danzenbaker. Since the original frame was considerably wider than the Danzenbaker, and as the combs were simply perfect, it was no trick at all to cut from the one, trim to the proper size, and place in position in the smaller frame, where they were held in place by a string of loose fibrous nature that was wound round the frames several times and fastened securely. In a week the hive was opened and the strings cut away as the combs were found firmly fixed in position

My second venture was for a friend who had fallen heir to a colony housed in a soap-box, and he wished them put in a regular hive. This proved a more difficult proposition, but I carried it through all right; but since I did some things rather awkwardly I prefer to describe my third venture, which was the most difficult of all.

The following tools have been found necessary: Heavy hammer, cold chisel, sharp steel knife (a carver is excellent), a saw (I always have it handy but have never used it); a large empty tin biscuit-box with a hinged lid to receive scraps of comb which can be made useful afterward; a board a little larger than the frames; a table, preferably covered with oilcloth; an empty box whose opening is, as nearly as possible, the same as that of the lower part of the hive to be operated upon; a couple of moderately heavy sticks for drumming with; a pail of water and a towel; a ball of binding-twine, or for small frames a box of rubber bands, which are much handier, and a bee-brush or a wisp of grass. Since the new hive must necessarily occupy the place of the old one it is better to do the work a little to one side or at the rear of the latter so as to save time in disposing of each frame as it is prepared.

FIG. 1.—DRUMMING THE BEES UP INTO THE EMPTY BOX.

I prefer a clear sunshiny day when the thermometer shows at least 65 degrees in the shade, so as to avoid as far as possible any chilling of the brood. Of course, there are certain seasons when the free flow of nectar makes them more favorable; but I would at

such times use the indirect method in preference to the one I am about to describe. I suspected the presence of the beeswax-moth in the end of October, and felt they had to be got rid of as quickly as possible, for if I did not I might not have any hive in the spring. Direct transfer is, I am convinced, one to be used on only urgent occasions, because the comb is usually so uneven that it must be replaced at the earliest opportunity; so one is thus brought right to the level of the indirect method, but with lots of muss and extra labor.

Having all your tools brought together, set your table in the most convenient position and place the tools in the order you expect to use them so that you will waste no time hunting for them.

FIG. 2.—REMOVING ONE OF THE SIDES OF THE BOX HIVES.

Assume your armor of defense—veil, gloves, and do not forget strings around your trousers at the ankles, as myriads of bees will soon be crawling everywhere on the ground.

See that your smoker is in first-class working order, though it is probable you will find little use for it after the start, because the ordeal about to be inflicted on the colony will in all likelihood thoroughly demoralize its members.

Begin by puffing a little smoke into the entrance. Wait a minute; then give them another dose; repeat a little later. Wait two minutes or so, then lift the box hive off its stand and place it on the table upside down; then place the new hive-body (empty of course) in the place the box hive occupied. It is desirable to get at least one frame of brood and honey into the new hive as quickly as possible, so that the flying bees will find an abiding interest in the new conditions.

Now on top of the box hive place the empty box, upside down, and proceed to drive the bees up into it by vigorously thumping the sides of the box hive with the sticks provided for that purpose—Fig. 1. The more bees you drive up, the better; but at this stage I could never get much over a pint to vacate the combs. However, as the work proceeds they will continue to come to the top, and I generally jar them off into the box each time I cut out a comb.

TRANSFERRING THE COMBS.

The next thing to do is to cut away one side of the box hive, Fig. 2. Still keeping it upside down, place it at some convenient height, and commence operations by driving the cold chisel between two of the boards. With a flimsy box the wood will probably split away; but with heavy lumber you will probably have to cut the nails with a chisel. At any rate I have never found any difficulty in removing one side of the box hive.

The combs will certainly not be in the fine shape and condition in a properly cared-for hive, but they are more apt to be curved and twisted in many directions; besides, if old they will be not only black, but so hard it will seem almost impossible to cut them with a sharp steel knife; in fact, the first temptation is to use a hatchet.

On the table place the board that is slightly larger than the frame. Some recommend a folded newspaper or cloth on top of that so as to protect the brood from injury as far as possible; but it gets so sloppy and inconvenient that I have discarded its use.

With the sharp knife, used as if it were a saw, slice the first comb from the sides of the box, and then cut it away from the top. The comb being free, lift it and clear it of bees by giving it a sudden jerk above the empty box. If it be old and hard it will stand such rough treatment; if new, brush off the bees with a bee-brush or a wisp of grass.

Now place the comb on the board; take the first frame, and adjust it on top of the comb so as to take the best of it. You want to save as much of the honey and brood as you can. If honey is coming in freely you will have less worry about the stores; but if you transfer in the fall or early spring, then save as much of the honey as you can. Therefore adjust the frame to include as much of the upper part of the comb as possible. Since these combs will probably be discarded at the earliest opportunity, one need not be very careful as to the direction in which the cells are turned; but, all the same, as far as you can, let the comb that was at the top of the hive be at top of the brood-frame.

Your frame adjusted, take the carving-knife and mark out on the comb the inside

FIG. 3.—OUTSIDE OF THE BOX HIVE REMOVED, SHOWING THE APPEARANCE OF THE INTERIOR.

means of the board both frame and comb are tilted safely to the proper angle. To secure the combs in position I find rubber bands more convenient than strings. The size depends upon the frame, of course; but, roughly speaking, they ought to be, when unstretched, about one-third the width of the frame. An assistant can slip these on in a few seconds, the frame being projected over the end of the table for the purpose. Four is an average number for a frame. If rubber bands are not handy, then a soft string, such as binder-twine, is good. Make two turns at one end of the frame so as to catch one end of the string; then wind to the other end of the frame; cast a loop, or make any kind of a knot, and the job is done. Get the frame into the hive as quickly as possible, so that dimensions of the frame. Then remove the frame and cut right through, but preferably keeping to the outside of the bounding lines so that, when you replace the frame, the comb will have to be squeezed into place. If the original comb was both longer and wider than the frame your task will be easy; but this rarely happens, even when transferring to small frames, and so you will have gaps at the corners and ends. The remedy is easy: Put a piece of comb larger than the gap on top of it, never minding how the new piece is turned; then cut through both combs; remove the trimmings, and force the new piece into the hole, where, of course, it will fit perfectly. All this is a long story, but in practice I find it takes 45 minutes from the first puff of smoke to the moment the cover goes on the new hive, so about three minutes is time enough to spend on each frame.

You were advised to place the comb on top of a board. You will see why. The frame has to be brought to the perpendicular; and if you try to lift it bodily the pieces of comb will simply fall out; but by

FIG. 4.—BOX OF BEES PLACED IN FRONT OF THE ENTRANCE OF THE HIVE.

the bees will have something to care for. Never mind the slop on the frame; the bees will take care of that right away, and probably get more assistance than either you or they care for.

Before starting the next frame, clear the table of the trimmings by dropping them into the tin box, and closing the lid. Before your job is finished you will probably draw from this store; but in the mean time you want the fragments under cover, to be free from the annoyance of thousands of bees that are naturally attracted by the smell of honey. Turning to the box hive you will find a host of bees on top of the combs. Jar them off into the empty box, and proceed with the second comb and the second frame. If you find brood here, be as gentle as you can. Do not kill any life wantonly or even carelessly. I know it is impossible to make omelettes without smashing eggs; but one need not smash eggs when omelettes are not being made. Besides, bees cost money. Bees and honey are convertible terms. Bees make honey, but honey is made into bees. Therefore both humanity and business protest against the careless destruction of life.

If the weather be at all cool, one can not proceed too quickly with the brood-combs to get them into the care of the bees as speedily as possible.

The instructions for filling one frame apply equally to all others; but this may be added: Get the combs as even as possible, and never hesitate to cut out a piece that is too thick, as it will interfere with the future handling of the frames. Again, in piecing out, try as far as possible to cut pieces that will reach from top to bottom of the frame, as the wedging-in gives more certainty of the comb staying in place. And do not forget the reserve stock in the tin box.

Once the frames are all in place and the cover on the hive, place a board running to the entrance and set the box with the bees on it (open end, of course) toward the entrance, and the procession will soon start homeward, Fig. 4

PREVENTING ROBBERS.

Last of all, remove the honey mess as quickly as possible, so that you will not encourage robbing. Even with only one hive in the yard, and the nearest apiary quite a distance away, it is simply amazing how speedily a well-defined line of travel one can see in the air. So at once carry the old box hive at least one hundred feet from the scene of operations; pick up all loose fragments of comb, and dispose of them in the covered tin box; then wash the tools and table as speedily as possible. A few minutes' playing with the hose-pipe is very effective.

The last time I transferred was toward the middle of November. The day was warm, with no wind. I worked on the south side of a thick hedge so that the conditions for comfort were ideal. The task was finished by two o'clock; but before the bees were all in the hive a perfect cloud of robbers had gathered from far and near. To protect the hive I flung a liberal supply of damp grass on the entrance-board, leaving it there until four o'clock, when the chilly air drove the visitors away. The grass was removed, so that those which rightfully belonged there could find admission

The robbers returned for at least two days; but I was on the alert, and at the first hint of their presence I applied the wet grass. The unwelcome visitors held the outside of the hive for the best part of these two days, but after that a very contracted entrance seemed sufficient.

The scrap comb was strained of its honey over the stove, then diluted and fed back to the bees in an Alexander feeder, giving about a pint each day. At the end of a week I opened the hive, examined only one comb, but found it in fine condition; so with a sharp knife I cut the rubber bands, which snapped back to the bottom of the hive. The bees are now carrying them out at their leisure. On the same day I cleaned the bottom-board. The hive was exceedingly strong in bees, but I found hundreds dead on the bottom. I think the chilly night had killed off those that failed to get into the combs, as in my present locality the thermometer touches 32 degrees every night during the winter months.

A few moth larvæ were found, but not enough, I think, to have hurt much; and since the transfer a couple have been found outside the entrance.

December 9, a month later, young bees were sporting in goodly numbers, so that, apparently, all is well. A few bees were carrying in pollen of a light yellow color. The source of this is unknown to me. The only bee-plant I knew to be in bloom was alfilarela; but the blossoms were few, as its season is not due until February, so far as I can learn. There also lingered on the stage a small quantity of second-growth sweet clover.

Medford, Oregon.

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## MOVING BEES IN CAR LOTS.

### Some Timely Suggestions from One who has Learned by Extensive Experience.

BY E. D. TOWNSEND.

There is but one good time to move bees, and that is at the period in spring when the hives are the lightest in bees and honey. In this location this is about the middle of May. Our plan is to watch the progress of the season to see whether it is late or early, and occasionally to look through the swarms in order to keep posted on the time when the colony is weakest in bees and in stores. This will be when the last of the old bees have died, and when their places are filled by young bees just reared, which are not, as yet, very numerous.

PREPARING COLONIES FOR MOVING.

If the bottom-board has a deep side, place this side up, and fasten with four box-staples, which should be put on the sides of the hive,

as it is not satisfactory to put staples on the back end for moving on a car. When both sides of the bottoms are stapled, two staples to a side, as shown in Fig. 1, there will be no danger of their being bumped off in transit.

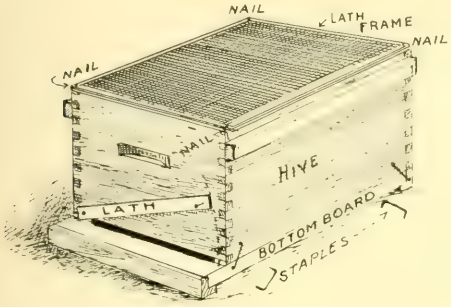



FIG. 1.

As many wire-cloth frames will be needed as there are colonies to move. These are to be nailed on the top of the hive, after removing the cover, and are for ventilation. Ask the hardware man for black window screen (other colors may do just as well, but I prefer the black); and if the right width is purchased it will cut to good advantage.

The wire cloth should be the size of the top of the hive, outside measure. As the lath are 1½ inches wide, cut four pieces 1½ inches shorter than the length of the hive, and four 1½ inches short of the width, and make the frame as shown in Fig. 2, in such a way as to mismatch the pieces at the corners, which will be double thickness. With the inch nails that are sold for bee-keepers' work nail through both sets of lath and the wire screen, especially at the corners. If basswood lath is used and the nails clinched, the

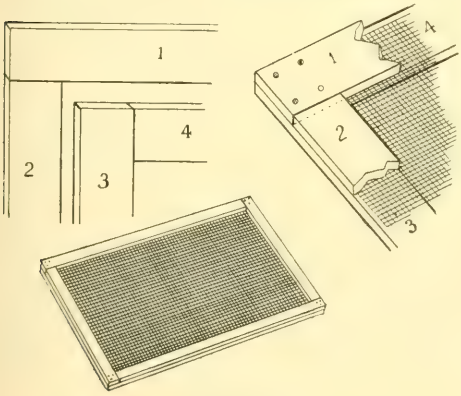



FIG. 2.

screen ordinarily ought to last a lifetime, and it will be much more handy than simply a piece of wire cloth fastened with loose lath or strips that are always being lost. The screen is to be fastened on the top of the hive with four 5-penny box nails, one at each corner, driven into the side board of the hive. As this screen affords ample ventilation for May moving, a lath is nailed over the entrance to shut the bees in. It is very harmful to keep bees shut in their hives, and we aim to plan so that all of the entrances are left open until the morning the car is to be loaded. If the colonies to be moved are far from the depot they are moved in by wagon, unloaded in some convenient place, the entrance-blocks removed, and the bees allowed to fly until the morning they are to be put in the car. It is very important to have every thing handy, for the work should all be done in one day, and the bees started toward their destination at the earliest moment.

### HOW TO MOVE BEES ON A WAGON.

Some may want to know how we move bees from an outyard to the car. This is done on a common low-wheeled farm-wagon. We put on a set of bolster-springs and then a flat hay-rack. If there is no front rail or dash, a narrow board is nailed across the front edge of the rack to keep the first row of screened hives from being jostled out of position.

The hives are loaded so that the frames are crosswise of the rack; and if they are of the Langstroth pattern, ten or twelve rows of four hives each can be put on crosswise. One tier high will make an ordinary load. When all are on, a narrow strip of board is also nailed along both sides and the back to keep the hives from sliding off.

### THE KIND OF CAR TO SHIP IN.

The agent of the railroad company should order a single-deck stock or cattle car for the day the hives are to be loaded. A non-ventilated box car should not be used, for hot weather may come before the bees get to the journey's end, and there would then be trouble in ventilating. As an illustration of the importance of making use of a ventilated car I will cite an instance that happened here in Michigan a year ago. A party moved a car of bees in a regular box car, and provided no screens for the tops of the hives. The combs in seventeen of the best colonies melted down, and other colonies were so reduced in strength that they were of but little use that season; in fact, there would not have been a single colony to go through without smothering had it not been that the trip took but two days, and these two days were during some of the coldest weather in the spring. I believe, then, that it is best to have in all cases a well-ventilated stock-car, and to provide screens for the top of each hive.

### LOADING THE CAR.

The car should be placed, as nearly as possible, to the colonies so that they can be conveniently loaded. In placing the hives in the car every thing must be braced rigidly to prevent shaking and jarring any more than is necessary. It is important to remember that there is no side shaking to speak of, so all of the bracing should be done with the intent of preventing the lengthwise shaking. A few hundred feet of 2×4 scantling will be needed, and also a few 16-ft. pieces of 2×6

timber. The 2×4's will need to be 16 ft. long for a 36-ft. car and 14 ft. long for a 33-ft car, for they must be long enough to reach from one end of the car up to the doorway. These 2×4's are to be placed lengthwise of the car

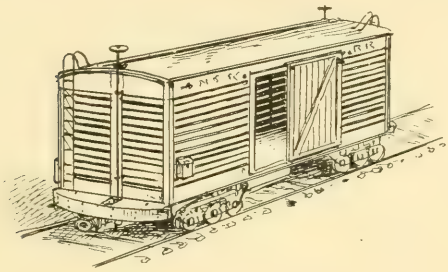


FIG. 3.

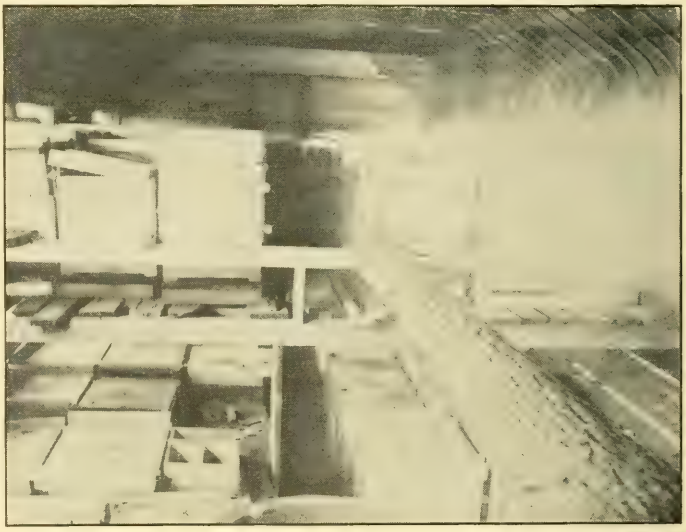
over the first tier of hives, to act as a support for the second tier. The 2×6 pieces are to go across the car between the last row of hives and the doorway. In this way each tier of hives can be keyed up tight with covers, etc., so that there will be no unnecessary jostling.

After sweeping out the car, fill one end nearly to the door with one tier of hives placed directly on the floor. Before reaching the doorway with the last row of hives, cut one of the 16-ft. 2×6 pieces in two in the middle, which will make two pieces 8 ft. long. One of these will be just the right length to reach across the car, and it should be placed flat on the floor against the car-door-post and on the side of the post toward the bees. There will probably be a space between the edge of this two-inch piece and the last row of hives put in, and this space should be filled in with covers or bottoms or some other material, for it is very important to have the hives placed and held so close together that there can be no movement endwise of the car. Six ten-frame hives, if there are no projections on the sides, can be placed in each crosswise row, for, of course, the hives should be loaded with the frames parallel with the rails. If eight-frame hives were used, possibly seven could be put into each crosswise row.

After the first tier of hives is loaded so that the floor is covered on one end of the car up to the doorway, and keyed up firmly, as before explained, seven of the 2×4 scantlings are to be placed parallel with the car on top of this first tier. One of these is put at each side of the car, and the other five spaced equally between them, so that the next tier of hives may rest on them. (If these 2×4's were placed crosswise, the hives would be more likely to get shaken off.) In order to give a larger surface for the rows of hives to rest on, the 2×4's should, of course, be laid flat. This will allow a two-inch space between the first two tiers of hives, which is ample to give good circulation. The subsequent tiers are loaded in the same way.

By this plan we have moved three cars of bees from Remus to the northern part of the State during the month of May. However, when we do any further moving we propose putting 2×4's crosswise of the car also, between each tier, so that there will be 4 inches of space instead of only two. In this way there will be openings at the sides as well as at the ends of the car, and we are sure it will be sufficient, since there would be circulation from all four sides and also up and down at the ends of the hives where the hand-hole cleats hold them apart 1½ inches.

If bees only were to be moved, probably four hundred colonies could be put in, using both ends of the car. However, we once moved nearly two hundred colonies of bees in one end, while about one-half of the necessary fixtures belonging to them were placed in the other end. The rest of the fixtures were put into a regular box car without any crating. The goods in this second car were billed at 600 pieces weighing 4000 pounds. We paid by the hundred-weight and not for a full car. Since I did not wish the car of bees to arrive before the other car did, I asked the agent to blanket the shipping-bills; but he said he knew no way of doing this. However, I asked him to pin the two bills together, which I believe he did finally. As



O. H. TOWNSEND'S PLAN FOR LOADING THE HIVES IN THE CAR.

It will be noted that the two tiers of hives are separate, and that access can therefore be had to any hive in the car.

there was a car shortage at that time I knew it would be quite difficult to hold this one car that contained only 4000 pounds. I had found that the agent could not bill both cars together, so I counted up all the pieces I could find in the supply-car, and found there were something like 600, as before mentioned. As good luck would have it, the two cars started out hitched together. We went over four different divisions of railroad; and at each division, armed with a shipping-receipt calling for 600 pieces, I went to the agent and asked him to let this car of supplies go through with the bees. If he did not seem to be inclined to grant the request I would mention the fact that there were 600 pieces in the car to transfer, many of them in poor shape to handle. The consequence was I had my way at each point, and both cars were sidetracked together at the destination.

If not too many colonies are to be moved, the hives might be tiered up along each side of the car, leaving an alley in the center between, so that one could walk the whole length of the car. Better ventilation could be afforded by this plan.

In moving bees in hot weather, when the colonies are more populous and the weather such that it is necessary to have more ventilation, an empty story might be placed over each hive with the screen on top, thus giving a large clustering-space for the bees. While I have had no experience in moving bees by railroad in hot weather, my experience in moving by wagon would convince me of the necessity of this additional clustering room at all times when the weather is hot.

Mr. O. H. Townsend has had considerable experience in shipping bees; and concerning this part of the subject he writes as follows:

My experience in shipping bees has taught me that it is best to load them so that it will be possible to have access to any hive in the car if necessary. In order to accomplish this the upper tier of hives must be placed some distance above the lower tier instead of resting upon it. This leaves every hive in the car so that it can be moved independently of any of the others. The engraving on the preceding page gives an idea how this is done.

In order to save all brood it is best to feed *en route* with thin sugar syrup. The barrel indistinctly shown in the engraving is for the purpose of holding the sugar. Last spring I shipped the colonies late, and so had a shallow Heddon case on each hive with the screen on top of this. An Alexander feeder made just right for fitting lengthwise in each hive, and resting on the tin rabbets, was filled and placed in each hive the day before the colonies were taken away. These were also filled again as the bees were loaded into the car. The feed was poured from a common garden-sprinkler with the perforated end removed.

Even in hot weather it would be better if one could get the air to the bees without the light shining in, for this light keeps the bees trying to get out.

One who has never moved bees in car lots by freight has no idea how much the cars are bumped together in switching. Anybody in the car will be almost knocked from his feet, and the first thought is that every comb in the hive will be broken down; but if the combs are a few years old there will be no breakage. It is not necessary that the combs be wired to stand moving, but they should be two or three years old so that they will be well fastened to the frame on the ends as well as the top. Combs used for brood-rearing are also tougher and less easily broken than those that have not contained brood.

Bees in car lots go by freight at a second-class rate on 12,000 pounds. If the car goes to a station where there is no agent, as will be the case many times in shipping to a new location, the freight will have to be prepaid, and there will be no siding privileges included in this. In other words, in shipping to a prepaid station or over a different road, the car can not be sidetracked at different points for the purpose of taking on more bees along the line. In shipping from Remus over the Pere Marquette Railroad we can get the car sidetracked at any point along the line by paying $3.00 as a minimum charge. If it is necessary to sidetrack on some different road the matter must be taken up, of course, with the officials of that road.

In order to make the best headway with the car, find out from the agent the time when the car will be transferred to the next division of the line or to the next line, for it sometimes happens that the car would have to wait for several hours before being transferred. In such cases always have the agent ask the division superintendent for permission to have the car transferred immediately after arriving at the point of transferring. In asking for this privilege, always present the argument of *very perishable* goods. It is then necessary to see the agent of the next division, or road, as the case may be, and tell him that there is a car of very perishable goods on the transfer siding, and ask him to get it off on the very first freight. I always ask if there is any through freight that might get the car to destination first, for it is always best to wait a little longer if a through freight can be made use of that will save a little time in the end. There is also less jarring because of the shorter number of stops, etc.

On arrival at the destination the hives should be unloaded, placed on the permanent stands, and the entrance-blocks removed as soon as possible, for the bees seem to suffer most when confined if the hives are not being jarred. A neighbor once moved two wagonloads of bees in very hot weather. The hives were placed on the new stands about noon, and part of the bees were not allowed to fly until the next morning. The result was that these colonies that were confined were suffocated, for the combs were melted down. When there is danger of suffocation on the car, water should be sprinkled on the bees frequently with a sprinkler in order to keep the temperature down. For this purpose a couple of five-gallon cans should be kept filled with water, to be used in case of an emergency. A lantern will be found necessary also. If the destination is reached during the night the colonies may be unloaded early in the morning, as the bees will keep quiet during the night.

Remus, Mich.

## FALL AND SPRING FEEDING.

### When to Feed Thick and when to Feed Thin Syrup; Syrup vs. Honey as a Winter Food.

BY E. W. ALEXANDER.

Feeding is becoming a very important part of our business, and from the many letters of inquiry I am receiving from parties in many places I find some bee-keepers have rather erroneous ideas of the proper way to do this work in order to secure the best results, and at the same time avoid all danger of the feed entering the supers. There is no question but that we can secure very beneficial results by judicious feeding in early spring as well as late in the fall; but we must be careful to do it so no possible harm can come from the practice. I would advise having every thing as handy as possible before commencing this line of work; for after it is commenced there should be no stop until the weather becomes warm and settled, except on fair days, when the bees can gather nectar from the flowers.

Before taking our bees from the cellar we have our feeders all ready, and the necessary barrels of sugar for spring use in our bee-house; then with an agricultural boiler which holds 45 gallons two men can make the necessary syrup and feed six or seven hundred colonies in less time than we could formerly feed fifty. It is the advantage secured from taking these short cuts on both time and expense that I have called your attention to so often.

There are only a few conditions a colony is likely to be in when it is necessary to resort to feeding. First, in the spring, if the bees have little or no honey they should be fed at once five or six barrels to prevent starving. This syrup should be about the consistency of good honey; then to stimulate brood-rearing it is far better to feed a much thinner syrup. I find that, if made of 1 lb. of sugar to 3 lbs. of water, it will give the best results. This furnishes both food and water mixed together, which is very necessary to encourage early breeding.

Then before the close of the season, if there are some colonies rather weak in bees, also light in honey, they should be fed daily two or three pounds of either extracted honey or sugar syrup. This should be one-half sugar to one-half water, which will encourage fall breeding and also add somewhat to their winter stores.

For the principal winter food the colonies should have a syrup made of the best granulated sugar, one pound of water and two of sugar. This should be boiled well until the sugar is thoroughly dissolved. Some think it necessary to add a little extracted honey or tartaric acid to prevent the syrup from crystallizing. We rather prefer this addition, but have had good results without it.

Feeding for winter stores should be done late in the fall, about two weeks before putting the bees in their winter quarters; and whatever amount they require should be given them at one time.

When feeding at any time or for any purpose we must use good judgment; otherwise we may thwart the very object we wish to achieve. First we must be very careful to feed just enough, and no more than the necessary amount to secure the desired object. When feeding in the spring, give only enough for daily use of the thin syrup; and if there is a spell of a day or two that is fair, and the bees are getting some nectar from the flowers, then stop feeding until the weather becomes unfavorable for them to work, but don't stop unless you are sure that the flowers are yielding nectar. If you watch your bees and the weather closely you can stop feeding as it becomes more pleasant, so there will not be any syrup left in their combs.

When feeding in the fall for winter stores, we must be careful to feed only enough to furnish them with the necessary amount to last during their long confinement. I think it best to feed all colonies 15 or 20 lbs. of *thick* sugar syrup late in the fall; where a colony has as much honey as it requires for winter use, or more, I would remove two combs of their honey from each side of their hive early in the fall. Extract these four combs and return them near to the center of the hive; then when giving them their winter food they will store it in these center combs, and cluster on them during the winter. In this way they will use up all the syrup you have given them, and there will be no danger of any being left to enter the supers.

We must be careful how we feed, to avoid all harm, and at the same time secure those good results from feeding.

If we gave our bees a lot of thick syrup in the spring it would be of but little use to stimulate breeding, as they require water at that season as much as they do honey. Then if we gave them the thin syrup in the fall, such as they require in the spring, it would be one of the worst things we could do, as it would cause almost every colony to have the dysentery before mid-winter.

You may think that, if a colony requires feeding, it is of but little consequence when, how, or what it is fed; but there is a right and a wrong way to do all things, and our bees are certainly very exacting in their requirements. There is a great deal to be gained in turning sugar syrup into bees in early spring, and by it saving their lives during the winter; but remember, even if the law would allow us to do it there is not a particle of profit in feeding sugar syrup to bees to get them to turn it into either comb or extracted honey.

In one of my articles last fall I spoke of our feeding 200 colonies sugar syrup as a substitute for honey during the winter. Before feeding we removed nearly all the honey from these colonies, and now after five months of confinement they are in perfect health, and, without a single exception, have wintered well. They are as bright and lively as we could expect to see them in June. We are so well pleased with this experi-

ment on a large number of colonies that it is rather doubtful if we ever again depend on honey as a winter food.

I think Prof. A. J. Cook, nearly forty years ago, was the first man who called our attention to this very important subject. It was at a bee-keepers' convention in Utica, N. Y., and I can never forget how anxious father Quinby and Capt. J. E. Hetherington were to inquire all about this substitute for honey as a winter food, which at that time was a new discovery. If his advice had been taken then it would have saved the lives of far more colonies of bees than there are to-day in the United States.

Delanson, N. Y.

[When this article was written Mr. Alexander had not seen the special series of articles on spring management that appeared in our two March issues, wherein *spring* feeding, except to prevent starvation, was considered ill-advised. Even if he had seen them, it is presumed that his advice would have been just the same, except that he probably would have presented some arguments in defense of the practice for his locality.

As we have before pointed out, our correspondent has a late honey-flow, mainly from buckwheat, and therefore this must be taken into consideration.—ED.]

## THE PLURAL-QUEEN SYSTEM.

### A Review of the English and American Systems; Their Advantages and Disadvantages as Viewed from the Standpoint of a Traveling Bee Expert in England.

BY J. GRAY.

In this article I propose to review briefly the various conditions under which two laying queens will live in peace in one colony.

PLURAL QUEENS UNDER NATURAL CONDITIONS.

When supersedure takes place in a colony of kindly disposition the old queen is allowed to continue while the young one takes up the duties of motherhood. The forces that go to make up this variation from the normal conditions of a colony are twofold—disposition and plenty. The bees of a colony of kindly disposition will extend their kindness to the old queen, neither workers nor young queen showing fight; and while stores are pouring into the hive the old queen still finds some workers to feed and care for her. Here, then, is one of the vital points: Under what conditions can I get a colony to feed two queens, without which all our efforts will fail? Note how easily the hundreds of drones are disposed of, all for want of food. It is not a question of drone fighting drone, but it is a question of starvation. When those conditions arrive that a queen begins to restrict her laying because she is not fed so lavishly, then comes the time that one queen is neglected and starved. It is here that Alexander is beaten by the bee.

THE ENGLISH SYSTEM.

Our Wells hive provides for the two colonies becoming one in scent and heat, only until harvest time, when the two forces are worked together in one common super. I pointed out in my last the greatest fault of the system; *i. e.*, the big unwieldy hive. There is also another fault that comes through the two colonies carrying the same scent.

Dr. Miller has called attention to the fact that a colony will use one side of the hive more than the other. It is just this that causes trouble with the Wells—both colonies carry the same scent, with the result that, in the early flights, one side increases to the depleting of the other until at last the queen is missing from the weakened side. I have had the same experience when trying to winter tiered-up instead of side-by-side scent, and heat allowed only between the two.

THE ADVANTAGES OF THE WELLS SYSTEM.

The advantages are a big yield of honey and less swarming. The lesson it teaches is that it takes about four days for two colonies to acquire the same scent.

THE HAND SYSTEM.

This has some very good points. The shallow frames make a crowded condition of brood-nest which would tend to favor two queens from the workers' point of view. The queens being kept apart by the excluder, their time is not wasted by useless fighting, even though their stings were cut off, and the frames are shallow enough for two sets to form one chamber with a queen in each set.

Doolittle has pointed out how bees contract with cold, and occupy only half the space. When this contraction occurs there would be the fault of starving one queen, as in the Wells system. Is it possible to modify the Hand system and use a queen-excluder in summer and wire cloth in winter, with an upper and lower entrance? Even then the risk would still remain that the lower entrance might be used the more.

THE ALEXANDER SYSTEM.

This would have been excellent if possible to carry out; but it fails at the most critical time. We want a system that will carry us through the winter It would be hard on the stock to sacrifice every other queen, and, when the spring comes, raise an equal number to fill up again.

Modern apiculture has guided the bees to perform some wonderful work, yet this problem presents a big difficulty in that we are against the natural instinct of the bees.

Long Eaton, England.

[Mr. Gray suggests the use of wire cloth after the honey-flow, or during winter, instead of perforated zinc; for when a flush of good times for the colony has passed, one of the queens will be missing because the bees favor one more than the other. It is possible, if the cluster were divided by wire cloth, the two queens could be maintained over winter.—ED.]

## PLURALITY OF QUEENS.

### Points in the Wells System Explained.

BY SAMUEL SIMMINS.

In my 1893 edition of "A Modern Bee Farm" I gave a chapter upon this subject; but in preparing my 1904 issue, the question appearing to have ceased to create any further interest, I gave but a passing notice to the plural-queen methods.

It may interest your readers to know that, some twenty years ago, Dr. Stroud, of Port Elizabeth, South Afrcia, claimed to be able to work a number of queens in one colony without their killing each other or being disturbed by the workers; but he gave no particulars that would have explained his plan of management.

More recently Mr. Heddon stated that he could run more than one queen in the same hive; but it was reserved for Mr. Wells, of Aylesford, Maidstone, England, to be acknowledged as the first to reduce the matter to practical working as a system in honey production.

The correspondence relating to the matter is to be found in the *British Bee Journal* for 1892, and in the issue for November 10, of that year, after stating he had at first made up his mind to work none but "two-queen" colonies in future. Upon further consideration, and in deference to other expressed opinions, he said: "In order to compare results, and to make the matter as plain as possible, I decided to change my plans and work five single-queened stocks through the season, and very carefully note results.

"It will, perhaps, not be out of place just to say once more that the double stocks have two queens in each, divided in the center of the hive with the thin wood perforated dummy, so that neither queen nor bees can pass beyond their own part of the *stock* hive; *but* at supering time a sheet of queen-excluder zinc is placed on top of the frames, and on this the super *into which both lots of bees are allowed to run and mix together as they please.*"

Now, this is just the point which the editor of GLEANINGS has somehow overlooked, for the bees not only mix in the supers, but of course can also, through that medium, mix up into either side occupied by the separated queens. Without doubt any other projected plan of working more than one queen in a hive will come to grief where a similar neutral medium (as to queens) is not allowed. By Mr. Wells' plan there was no uncertainty as to the fate of either queen; as, when the supers were removed, each queen was left where she started. The five double-queen hives gave him 789 lbs. of honey, mostly extracted, while the five single-queen hives yielded 205 lbs.

Mr. Wells used 14 frames in the brood-chamber, each 14×8½, so that, with two queens, he would not have more than six of such frames to each queen, while the single queens had most of the 14 frames. His hives did not appear to be large enough for the dual-queen plan, as he was troubled with much swarming.

In my 1893 edition I illustrated a larger hive for the purpose than is used by Mr. Wells, with two chambers for each queen, with his perforated divider at the center, and a full-length super, though a sectional super in three divisions would appear to be better for either comb or extracted honey.

At the same time I also gave a sketch of my tiering hive of ten frames, with excluder zinc between each, as another method of working two or more queens in the same colony. I was careful, however, to advise my readers that when

UNITING TWO OR MORE STOCKS

by this plan a small-hole perforated divider was to be placed as a safeguard between each brood-chamber, until the bees were considered mutually good-tempered. These boards were then to be replaced by zinc queen-excluders. A colony of two chambers in this style, if divided in the center of each by a Wells dummy, will accommodate four queens, either with entrances each way, or only one below. Furthermore, with no entrance cut in the rim of the hive, a further zinc-excluder frame may be at the base, with a hollow floor under, thus preventing any loss of queens by swarming. But just here is a question as to disposing of the drones, even if so much zinc is advisable.

It was in the year 1889 that my own experiments were made in holding more than one queen in the same chamber; but at the time I failed to find any advantage in the plan. The queens and combs being divided by excluder zinc, I was troubled by the loss of valuable queens as soon as bad weather occurred, and the brood-nest was restricted; hence there was little encouragement so far as my experience had gone.

COMPARATIVE RESULTS.

That the plural-queen plan can not always be relied upon to give the best results may be gleaned from the following experience with various hives. These bees were on British standard frames, 14×8½, and were worked for comb honey. The results secured by this bee-keeper do not show any advantage for the plural-queen plan, but certainly the reverse, as at the most the double-queen lots show only 40 lbs. to each queen, whereas several single-queen hives gave 80 lbs., and in one case as much as 120 lbs.

| | | | |
|---|---|---|---|
| No. 1, single-queen, | 80 lbs. | No. 6, double-queen, | 50 lbs. |
| " 2, " " | 80 " | " 7, " " | 60 " |
| " 3, " " | 120 " | " 8, single-queen, | 80 " |
| " 4, " " | 70 " | " 9, double-queen, | 70 " |
| " 5, " " | 21 " | " 10, " " | 80 " |

No. 11, single-queen, 78 lbs.

No. 3 appeared to make a big jump in comparison with the rest, and it may be interesting to note this was Simmins' "hanging-chamber" hive. In this hive a super with full sheets of foundation is started *beneath* the stock; and as soon as the bees cluster upon the foundation the case of sections is placed above the stock, with the bees just as they are, already drawing out the cells.

This appears to me to be the most expeditious way of providing drawn combs in sections, and the above result fully justifies my contention. More detailed arangement is to be found in "A Modern Bee Farm."

It will have been seen that, in working for extracted honey, Mr. Wells secured higher results with his double-queen hives than with single queens, there being an average of 156 lbs., for his five lots, or 78 lbs. for each. Will there be any advantage in the plural-queen plan? I see none.

*Note.*—The first intimation of my method of selection by breeding *solely from one queen for one season* was outlined in the *American Bee Journal* for March, 1906, also showing how each selected queen-mother was afterward passed on as the parent or grandparent of the only drones used in the following season, thus always mating back to the progeny of the next selected queen brought into the strain.

Heathfield, Sussex, Eng.

[In looking up the Wells system originally, we did not run across any articles where Mr. Wells mentioned the use of perforated zinc. In the reference above given, he clearly states its use and we accept the correction.—ED.]

## THE DUAL AND PLURAL QUEEN SYSTEMS.

### Conditions Under which They may be Used; a Review of the Whole Question.

BY J. E. HAND.

Judging from the nature of the argument that has been advanced in opposition to the plural-queen system it would seem that this system is not well understood, even by those who consider themselves sufficiently qualified to criticise it. Therefore the object of this article is to show that the plural-queen system is not only possible but profitable, as well as highly desirable under certain conditions

It is claimed that the conditions under which two queens are allowed to remain in the same hive are in cases of supersedure, when, after rearing a young queen, the old one is allowed to remain in the hive as long as she lives. Granted that this is true of bees when guided by the hand of nature. It is equally true, however, that, when guided by man's reason and ingenuity, two or more queens may be kept in the same hive with impunity.

It has been found that, while a vigorous queen will not tolerate a rival queen, the bees themselves will tolerate a plurality of queens or any number of queen-cells; therefore all that is necessary in order to keep two queens in one hive is to keep them from getting together. This is done by means of perforated metal, which keeps the queens apart, but allows the bees free access to both queens. Thus we have one large hive with two queens, each queen being sole mistress of her own brood-apartment.

It is hardly necessary to add that these are the only conditions under which two queens may be kept successfully in the same hive. It will be seen that the two-queen system, instead of being an open violation of nature's laws, is the result of a correct knowledge of the habits and instincts of bees

In discussing matters pertaining to apiculture, sufficient allowance should be made for the location and environments of the writer of an article as well as the hive he uses.

#### THE PLURAL-QUEEN SYSTEM OF DOUBTFUL VALUE IN DEEP HIVES.

Viewing the plural-queen system from the standpoint of the deep-frame hive, with its slow-going methods of manipulating frames singly, it is doubtful if it could be made a success. However, it should require little argument to prove to the bee-keeper of average intelligence the many advantages to be derived from the use of the plural-queen system when used in connection with the sectional hive with its improved methods of rapid hive manipulation.

Bee-keeping as a pursuit is progressing, and bee-keepers are fast realizing the necessity of employing short-cut, labor-saving methods. Twenty-five years ago rural electric lines, rural telephones, and rural mail delivery, were unknown. To-day the face of the country presents a network of electric and telephone lines, and every rural district has its free mail delivery; likewise the bee-keeper of to-day is compelled to meet greatly changed conditions. Good locations are scarce. Our one-time bee-pastures have given way to fields of waving grain, and the woodman's ax has laid low our forests of basswood. Our honey yield has been cut in two in the middle, which means that we must either adopt short-cut labor-saving methods that will enable us to keep twice as many bees as we kept before, or go out of business.

The bee-keeper of to-day who advocates the slow-going methods of a quarter of a century ago is fast becoming a back number. It is high time for this class of bee-keepers to wake up and take an inventory of stock before they get so far in the rear that they will never catch up.

As the horse-car has give way to electricity, so the old methods of handling, brushing, and interchanging brood-frames singly must soon give way to the more modern methods of rapid manipulation by hives.

Mr. Dadant's statement, that the queen is of vastly more value than any one thing connected with the colony, is literally true. Does not this prove that a plurality of queens increases the value of a colony? A queen may easily be worth ten dollars. Is not the bee-keeper making money who can rear such a queen at practically no expense, save for a very little time and with a little talent?

Again, Mr. Dadant discourses at considerable length upon the difficulties of rearing queens early enough in the spring to produce workers in time for the harvest. This argument falls to the ground in the face of the fact that queens are reared at the close of

harvest and carried over winter in shallow brood-cases. These little colonies, with vigorous young queens, will winter in a good cellar even better than a strong colony.

We have found it more profitable to work our bees on the two-queen system of swarm control, and then, at the close of the harvest, make our increase, as above stated, at a time when there is nothing for the bees to do, and every colony in the apiary can well spare enough bees, brood, and comb to stock one of these small brood-cases. By the above method each colony is provided with a young queen at the beginning of each season. When we consider that these queens are reared from our choicest breeders, it is easy to see the value of such a system as a means of improving our bees.

Two of the brood-cases, above mentioned, are equal in capacity to 8 L. frames; but we usually use three during the breeding season. At the close of the season, the third (or top) brood-case, with the young queen, is removed and wintered separately.

There are no weak colonies to nurse, and every colony in the apiary will be in condition to enter the sections at the beginning of harvest, and will give uniform results in honey production.

The claim that one queen will lay more eggs than a colony can care for, amounts to but little in the face of the fact that, if a weak colony is placed upon a strong one, the heat from the strong colony, and the addition of more nurses, will enable a weak colony to care for as much brood as the strong.

Again, the two-queen system is a guarantee against the loss of a crop of honey, which is often the result of the failure of the queen.

That the difficulty of introducing another queen is often used as an argument against the two-queen system is sufficient proof that the opponents of this system are not up to modern methods of rapid queen-introduction by hives.

All that is necessary is to place the small colony upon the strong one; only one cover is removed. It takes about a minute to do it, and not one queen in fifty will be lost.

If the colony added is very weak, a wire screen is used between the colonies until the brood-nest is well established, when the wire cloth is removed, allowing the bees free access to both brood-apartments through the perforated metal honey-board that separates the two colonies. It is merely two colonies under one cover and upon one bottom-board, which may be instantly separated whenever desired, and which insures a mighty army of workers for the harvest, and is practically a non-swarmer. A medium colony usually amounts to but little.

If you want honey you must have a hive literally jammed with bees, and the two-queen system gets them without fail.

Birmingham, O.

[It is getting about time to close this discussion of the plural-queen system, as we do not believe it would be wise to prolong it much further at this time. Next fall or next winter, after another season's work in testing it, we will reopen the question if desired.

We may be warranted in drawing some conclusions as a result of the past discussion in these columns:

1. More than two queens to the hive is seldom necessary or desirable, and hence, in a general way, not practicable. The more the queens, the greater the complication.

2. The plural, or dual, plan ordinarily can not be worked, except by the use of queen-excluders, so that each queen can be kept from her rival, and that even then—

3. After the main or general honey-flow is over, one of the queens (or all but one) will be missing. This is not invariably so; but the general trend of the discussion seems to indicate that this is so with most of those who have tried it.

4. While the *plural* plan, as above noted, is not practicable, the *dual* (two queens to the hive) may be and probably is profitable under some conditions. The evidence thus far submitted seems to bear out this statement if we may believe the testimony of some good and competent men.

5. Not all hives or systems are adapted to the dual plan and we may say some men couldn't work it with any plan. Unless one has faith in this or *any* system there is not much use in his wasting time with it.

6. The dual plan requires more skill and patience to work it than the single-queen-to-the-hive plan.

7. The beginner had better let it alone until the veterans more generally are able to work it.

8. All veterans with the proper equipment should try it in a small way. The possibilities of the system seem too great to be lightly passed over.

We have attempted to take no sides in this discussion, but we have endeavored to have the subject thoroughly discussed and considered fairly before it was dropped.—ED.]

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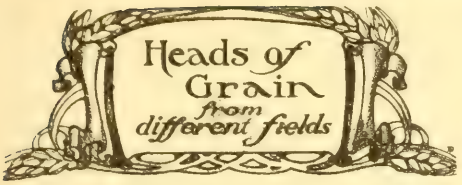
### DOG EAT DOG; SIC 'EM!

According to the latest newspaper reports, the Royal Baking Powder Co. intend to do things on a grand scale, and have invested $1,500,000 in a glucose-factory at Roby, Ind. It is said the factory cost originally $2,400,000. Had Dr. Wiley's decision on the glucose question been allowed to stand, it is safe to say the factory would have sold for much less. The Corn Products Co., we are informed, expected to buy this factory immediately after the decision, and are chagrined at the sale to others. Now, it is alleged, they have declared war to the knife, and intend to engage in the manufacture of baking-powder on a vast scale. They are well fitted to do this, as they have been supplying, or claiming to supply, the manufacturers of baking-powder with 85 per cent of their raw material. They use great quantities of soda to neutralize the hydrochloric acid in the manufacture of glucose, and, of course, this gives them a great opportunity to control the sale of it. W. K. M.




### LIQUEYING HONEY IN CANS; WEIGHT OF STORES COMPARED WITH WEIGHT OF SUGAR FED.

A word about heating cans of honey. After the honey has begun to warm, loosen the screw cap with that corner of the can uppermost. This will let out the expanded air and gases. The cap can then be replaced, and later the act repeated if occasion demands. There is no danger of a can bursting from the swelling of the honey; but the expanding of much enclosed air or gas is quite likely to bring disaster.

If one has only a can or two to liquefy, let him try this plan: Lay the can on its side on the hot stove, turning it to expose a new side to the heat every two or three minutes. After the four sides of the can are fairly hot, set the can upright on a part of the stove where a kettle of water would keep hot but would not boil. The side heating loosens the cake of honey and causes it to fall to the bottom as the can is set upright. There is little danger of overheating so long as this cake of candied honey is constantly pressing down upon the bottom of the can. I find this a rapid way to liquefy, and a safe one when conducted properly.

On page 1508 Mr. O. S. Rexford writes of his experience in feeding winter stores. The editor asks for the experience of others. Mr. Rexford mentioned his experience in the fall meeting of our Connecticut Association. In consequence of that I experimented a little this fall. I was obliged to feed some fifty colonies for winter. In three cases I weighed the colony before and after the feeding, allowing two weeks for the syrup to become digested and stored in the combs. I found that the weight of stores was in each case from 15 to 20 per cent larger than the weight of the dry sugar used. The three colonies were simply fair selections from the fifty, and can be considered typical cases. Examination of the brood-nests of several others corroborated the result.

I feel sure that there was something unusual or abnormal in the case cited by Mr. Rexford. ALLEN LATHAM.

Norwich, Ct.

### QUEENS REARED BY SWARMING IMPULSE TEND TO PERPETUATE EXCESSIVE SWARMING.

I think Mr. Alexander's statements on queen-rearing, Feb. 15, page 209, are well worth consideration. I formerly used swarm-cells altogether, with the result that every colony would almost invariably prepare to swarm, and some of the prime swarms would swarm again in four weeks. Within the last few years I have reared my queens from colonies which do not swarm, and in colonies free from the swarming impulse; and the result is more than satisfactory, reducing swarming to a fraction less than four per cent. This conclusion might be questioned on the ground that the last two seasons were so very poor that colonies would not attempt to swarm much, or that the queens were poor ones and could not populate their hives sufficiently to swarm; but these bees produced an average of 62 pounds per colony in 1906, and about the same in 1907. Furthermore, the queens seem to keep their hives well populated throughout the season. The majority of the colonies which do prepare to swarm are those containing queens reared under the swarming impulse. I keep some of these for testing their prolificness and the honey-gathering qualities of their bees, and comparing them with queens reared on the supersedure impulse. I find these results are about the same. J. C. ATKINSON.

Beaumont, O.

[Here is a statement on the other side of the question.—ED.]

### QUEENS FROM NATURAL-SWARM CELLS FOUND TO BE BETTER THAN ANY THAT WERE BOUGHT.

I have read Mr. Alexander's article, Feb. 15, page 209, about using queens from natural-swarm cells. Now, Mr. Editor, I have practiced that same thing for ten years, of course selecting the best cells or virgins from the best queens. I produce comb honey in ten-frame hives, and I use two hive-bodies until the beginning of the honey-flow. I find these natural-swarm-cell queens fill two ten-frame bodies with brood as readily as any queens I have been able to buy would fill a single eight-frame hive (I have bought queens from many queen-breeders, and have never been able to get *one* that would give me half the surplus the *average* swarm-cell queens do). I think continued selection along this line, instead of running a strain of bees out, as per Mr. Alexander, would in time give us the best it is possible to get by any possible plan or line of breeding.

Berthoud, Col. A. C. VANGALDER.

### HOW TO TEST THE VALUE OF A QUEEN.

*Mr. Editor:*—In your comment on the article by Wm. M. Whitney, p. 36, Jan. 1, you ask how we can know a good queen the first season. This is an easy matter with me. It can be determined by putting a young queen, when she first begins to lay, on a ten-day test. Encourage her to lay by feeding the colony one pint of feed at night for ten days. Try this on six or more queens with the same amount of bees, and see the difference in the amount of eggs laid.

Little Rock, Ark. W. J. LITTLEFIELD.

[The laying test under stimulative feeding would determine only one thing, viz., her prolificness. She might be never so good in

this one respect, and yet fall down when her bees came to the honey-flow. Some strains of colonies, however populous, are inclined to loaf. By your test, a Holy Land queen ought to be a great honey-producer because she is a great layer. But an extended experience covering a period of years did not show that these bees were superior, if as good, in the production of honey as the less prolific Italians.

No, it will not take at least a season through to test a good queen, and it would take a year to give her an all-around test.—Ed.]

### CEMENT PAINT FOR OLD OR NEW HIVES.

Having studied your A B C very carefully for a year now, and from personal experience in painting hives for a year, and other outdoor farming implements for many years, I now use no more oil paints for hives, but the following recipe for this country, which is hot, is a perfect success so far as bees are concerned, and very much cheaper and easier than oil.

Take milk containing a large percentage of cream; add good cement slowly, stirring well until a good thick paint is made. Apply with a broad flat brush. Two or three coats put on will petrify the outside surface of the wood. I claim the following advantages for hives over oil paint: Cheapness, ease, and quickness of painting; cleanliness, no clothes or hands soiled; practically no swell; certainly not objectionable to bees; unaffected by damp or weather for years; fills up old cracks admirably; smooth surface; and last, but not least, a porous paint which does exclude air through the wood. The natural color is a yellowish slate; but any dry-powder paint may be added to give the desired color. I prefer the natural color, which always looks tidy and clean. One barrel of cement will or ought to do for hundreds of hives. It is necessary to paint occupied hives on a cool cloudy day, the idea being to keep the sun off for six hours, so that the paint will not set too quickly. The slower it sets, the harder the surface gets. Milk containing a good thick set of cream on top is much more preferable than skim or separator milk. It is also necessary to use up all paint mixed, within a few hours.

Amerspoort, So. Af. U. L. Robertson.

### HONEY-DEW GATHERED IN JANUARY.

I have seen bees gathering pollen here in January, but not before have I noticed honey coming in at this time of year. Jan. 22 was a very warm day, and I was not surprised to see bees flying out, but I could not understand why some of them alighted so heavily, just as they do in summer when a flow is on. There is a small patch of pines about 200 yards away, from which bees were busily coming and going — some of them so heavy that they dropped on the way. Upon examination I found a sweet liquid on pine twigs, which I took to be honey-dew. To make sure the bees were gathering this, I opened a hive that had a loose top, and found a patch of brood near which I found several cells full of this liquid. This may be nothing new to some people, but it is something unusual to me. Hugh Johnson.

Reidsville, N. C., Jan. 23.

### A WET BOARD FOR WATERING BEES.

In watering bees in the spring of the year I place a board about 10 feet long and 10 or 12 inches wide on an incline, lengthwise. A bucket of water on the other end of the board, punctured at the bottom so the water will leak out and run down the board is just enough to keep the board wet.

I wet the surface of the board first, and the leak will usually keep the entire surface wet until the water has all run out. I teach my bees by being prompt to supply the water, so that they come regularly at a certain time. After they once start, it is surprising to see how many will get on the board in a short time. B. J. Worsley.

Theresa, N. Y.

### OUTDOOR FEEDING FOR STIMULATING.

For stimulative feeding I fill gallon jars with syrup, tie a cloth over the top just thick enough so the syrup will not run too fast, and turn the cloth end down on some short sticks so the bees can get under. If these are set in some nice warm place the bees work on it nicely, and it causes no disturbance. I use about 1½ to 2 lbs. of granulated sugar to each, for it also supplies them with the water they need.

What does any one want of two queees if he can have queens like some I have, that fill two hive-bodies? One queen is enough for me; but I want good ones or none at all.

Mt. Jackson, Va. S. Click.

### SWEET CLOVER AS A FOOD FOR STOCK.

Last week, seeing in the cornfield sweet clover over two feet high in bloom I thought of a writer who said it would not grow in cultivated fields. The large plant which I send in a separate inclosure has grown from seed which has germinated since July 29, when the corn was last cultivated. I also send two young plants which have grown from seed since our first rain, Oct. 14. The whole field was plowed late last spring, and that part which is now covered with a dense growth of young clover, being above the irrigation line, was not planted. This part of the field was free from clover last year, and the seed must have lain dormant two years. I consider it a good plow-under crop. Today I counted over 100 nodules on one plant. This coming season I hope to save enough seed to plant ten acres, and the following spring plow it under for corn-planting. Last week I gave some sweet clover to a pen of young fatting hogs which had never eaten any. They were all very fond of it. Some horses and cattle do not relish it *at first*, but, like human being, have to acquire an appetite for some foods. I well remember my first attempt to eat an olive. Now you can scarcely feed me too many. If you have a

pet Jersey cow you wish to have love you, and give you a good quantity of rich milk, give her a good feed of sweet clover at milking time; but too heavy feeding with it will give the milk a peculiar flavor.

Descanso, Cal., Dec. 5. E P. ST. JOHN.

And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it.—GEN. 1:28.

Please notice the above is what *God* said in the beginning of the human family. The very *first* command God ever gave to humanity was to be fruitful, and multiply; and a reason for it is given in almost the same breath, that we may *subdue* the earth. Just now in this year of 1908 we *are* subduing the earth in one sense, and may God be praised for it. But this Home paper is not to be a temperance talk, but rather a talk on "high-pressure gardening." Do you ask what our text has to do with gardening, etc.? Well, I think I can show you. A few days ago I saw in one of the Cleveland dailies a notice of the arrival of the first car of Florida celery, and that it had sold readily for quite a good price. About the same time, Mr. Rood remarked that a man near us was offered *$5000* for his crop of celery, about ready to harvest, on only *five* acres of ground. As it was less than two miles from our home I sprang on my wheel and proceeded to investigate.

By the way, I do *once in a while* go back and "get astride" of my hobbies of former years. My wheel has only recently been shipped from the old "cabin home" (cabin in the woods No. 1), and I started off with my old enthusiasm for wheeling, and soon found that there is a "second wind" down here in Florida equal to any in the world. I was soon out in the wilderness, and had to inquire my way. Two colored boys and a white one were sawing wood.

Now, I want to stop right here to consider the *tremendous* difference in specimens of humanity. In this region I have been much impressed with the numbers of bright well-informed people. Yes, I have mentioned the good behavior and the well-educated condition of the colored people around here.

Now for my illustration: Not one of the three young men I met had ever *heard* of "Lattimer's celery-farm," while it was less than one-fourth mile from where they were at work. A *fourth* colored man, a little further along, told me to open the first big gate on the left-hand side and follow the well-traveled road and I would soon see the celery. The two photographs which will appear in the next issue of GLEANINGS will give you a faint glimpse of the vision that suddenly burst on my (enraptured?) view. Let me explain a little.

At that time we were in the midst of a severe drouth. The morning was hot, and after I left the town there was little to be seen except the dry dusty wilderness. Every thing looked dead and dried up; and if you didn't *know* better you might be tempted to say none of the land was worth more than $5.00 an acre. Well, imagine my surprise to see, all at once, a field of celery that eclipsed any thing I ever saw before in Florida or anywhere else.

A short time ago Manatee Co. cut a drainage-ditch through this locality that permitted draining a number of ponds, or swamps, and this was one of them. After the water was let off into the big ditch the next thing was to get water to put back on the ground during a dry time. As the garden was in a slight depression it was all spread out before me, as I stood on a little higher ground. I got a drink of water at one of the two artesian wells, and soon found a very bright young man of eighteen who regretted that his father, Mr. C. L. Lattimer, was just then away, but he kindly gave me the following points:

Mr. Lattimer, as nearly as I can remember, commenced work here in the woods just about a year ago last January, so that the wild land has been "subdued" (see text) and this wonderful crop grown in only a little over a year. Most astounding of all, the father had had no experience with celery before this time, and was not even *an experienced gardener*, and had had no experience in gardening or even farming in Florida.

As the boy gave me the facts I said:

"Why, my young friend, this is almost incredible. Your father must have suddenly developed a craze for celery-growing, and done a deal of studying."

"You can bet your life he did. We all of us studied it up, and we have just worked like beavers in clearing up the land and getting it ready."

"'All of us?' How many children has your father?"

"Eight—four boys and four girls."

There you have it, friends. Mr. Lattimer has obeyed that first command that God gave humanity, and the loving Father has rewarded him.

Young Lattimer informed me further that such land can be bought for about $50 or $75 per acre, and that clearing it up and getting it ready for celery will cost about as much more. They have never yet used as *much* as a ton of fertilizer to the acre, costing about $40 per ton.

The two artesian wells cost something like $600 each. As nearly as I could gather, the entire outlay of cash has been *much less* than *half* of what he has been offered for the very first crop.

As fast as the celery is gathered and shipped tomatoes are put right on the ground, so the land is idle hardly a single day. The tomato-plants are grown in shaded beds

right on the premises, and were already growing finely when the celery had been sold off.

Now let me put in a word of caution. Mr. Lattimer was probably an excellent farmer in Alabama, where he came from. Before going into this venture he probably looked up celery-growing in this region very thoroughly, and I have reason to think he employs at least one or more expert men who know all about the business. I think, too, he must have ample means to do the right thing at the right time, for his son told me he had still another celery-ranch ten or twelve miles away.

Just now very good prices are being offered for *celery;* but during the past winter, I am told, carload after carload of *lettuce* has been grown that didn't pay cost. Mr. Lattimer had quite a little patch that was never cut, on account of the low price offered.

The bleaching is done with boards, and these are of what is called "pecky cypress." I do not know what the boards cost for an acre; but this kind of lumber can be bought here for about $18 or $20 per 1000. As it is light, never warps, and almost never rots, it is a splendid material for bee-hives. As the boards can be moved as fast as the celery is bleached sufficiently, and sold, only enough boards are needed at one time for a small part of the whole field.

Quite a quantity of water is needed during a dry time. As it lay in the furrow between the rows of plants it seemed to me it must be almost "knee-deep." The strong but not unpleasant perfume pervades the whole locality when marketing and shipping are going on.

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### SELLING SECRETS, ETC.

For some time past there has appeared in many of the poultry journals the following advertisement:

CUT OFF THREE-FOURTHS YOUR FEED-BILL.

Send us your name and address on a postal card, and we will send you free 16 sample pages of our revised book, "Successful Poultry Culture." This book will tell you how to actually make four bushels of the BEST FEED IN THE WORLD for chickens from one bushel of common grain, and it will tell you how to SAVE THREE-FOURTHS YOUR FEED-BILL.

This is certainly the greatest discovery of the 20th century, and will *double and triple your profits* in the poultry business. These 16 sample pages are absolutely *free*, and will tell you all about it. Send us a postal to-day for them.

RECORDER PUBLISHING CO.,
332 Dearborn St., Chicago, Ill.

A cut, which we do not reproduce, represents a loaf of bread cut in four pieces. I suppose the advertiser does not object to our giving him one insertion of this advertisement free of charge. Now, the greatest obstacle in the way of successful poultry-keeping in Florida is the cost of grain; and it certainly would be a big item to be able to save *three-fourths* of this expense. I accordly sent at once for the free (?) sample pages that the above advertisement says will "actually tell you how to make," etc. The 16 pages came promptly; but they did *not* tell the wonderful secret. They simply indicated that it was given in *one* chapter of the whole book, and you could not get the whole book unless you sent them $1.00 for it. If they make misstatements in their advertisement, why should they not make more in their dollar book? But as I had started in to save three-fourths of my grain I thought I would follow the thing out. I found, as I rather suspected, it was the Briggs secret of making "feed for ten cents a bushel" that I exposed and wrote up at different times during last year*. As I have been feeding sprouted oats and also sprouted corn and wheat all winter, more or less, I ought to know something about it. While sprouted grains *are* excellent feed for fowls, especially during the winter time, when there is apt to be a dearth of green food, I am satisfied that you *do not* cut off three-fourths of your feed-bill, nor any thing like it. May be the sprouted grain will go *twice* as far, but I very much doubt that. It seems to me our experiment stations are the ones to settle this matter before more such statements come out along this line. Poultry of all ages will eat with avidity sprouted grain, even when the sprouts are as much as six inches long. I suppose all of you have seen fowls scratch up seeds in the garden, and then swallow them, and the plant attached, with great satisfaction, and no doubt this is an excellent thing for poultry; but will our experiment stations please tell us how *much* money it saves in feeding sprouted corn and oats instead of feeding the grain itself? If the advertisers are right in saying that one bushel furnishes as much nutriment as four bushels of dry grain, I will beg their pardon and be glad that I have advertised for them.

Sprouted grains, as is well known, have been used more or less for human food. In the Chinese quarters of San Francisco, and in some other cities, I have seen sprouted peas offered for sale in front of the Chinese groceries. "Malted nuts" are excellent food, and, I believe, are made from nuts that have been sprouted so as to convert the starch into sugar for making a more delicious food, and perhaps a more digestible one. But if one bushel of sprouted oats is worth as much as three dry for poultry, why wouldn't they be worth something for horses or for human beings? I have often gathered beechnuts in the woods in the spring of the year, when the nuts had sprouted till the plants were two or three inches high, and they were very good food.

Now, then, who will tell us more about sprouting nuts and grain for human food? And, by the way, why do not some of our enterprising poultry journals inquire into such things a little more before inserting advertisements like the above?

---

*The "book" is a cheap paper pamphlet, 128 pages, with nothing in it particularly new or valuable except about two pages on sprouted grains.

# Hotel Cumberland

NEW YORK

S. W. Cor. Broadway at 54th Street

Near 50th St. Subway and 53d St. Elevated, and accessible to all surface lines

Ideal Location.

Near Theaters, Shops, and Central Park.

**New and Fireproof**

**Strictly First Class. Rates Reasonable.**

All Outside Rooms.

No Carpets. All Hard-wood Floors and Oriental Rugs.

European Plan.

Transient rates, $2 50 with bath, and up.
Restaurant Unexcelled. Prices Reasonable.

*Send for Booklet.*

**Harry P. Stimson**
Formerly with Hotel Imperial.

**R. J. Bingham**
Formerly with Hotel Woodward.



**"Seaboard Magazine"** SIX SOUTHERN STATES SEABOARD'S STRONGHOLD **Sent Free**

## A MAN'S DISPOSITION

is, without doubt, seriously affected by the climatic conditions which surround him.

### ARE YOU PLEASANTLY LOCATED?

Are you shut in by the ice and snow of a rigorous winter, with naught but a cheerless sky to gaze upon? What of your lands now? Covered with snow? How about your stock? Have to be kept housed and fed?

The farmers in our territory are plowing, their stock grazing on the hillsides, and in the famous Manatee section growers are shipping their products to Northern markets, receiving remarkable prices for the same, due to the season.

Our lands are just as fertile as yours, produce just as much and at a time when prices are the best. It's a duty you owe yourself and family to look into this.

**CLIMATE IS A MOST IMPORTANT FACTOR** in connection with the profits, as well as pleasure, to be derived from your location.

Wouldn't you like to be pleasantly situated, surrounded by climatic conditions which permit work to be carried on the entire year, and where the struggle for existence against the elements of a frozen North is not known?

The climate in the six States traversed by our line is unsurpassed anywhere, and the profits being derived by those who only a few years ago were battling with the rigors of winter in a northern location is evidence of the value of our lands. Do you expect to remain where you are and keep up the struggle? Why not come down into southern sunshine and be pleasantly located, while at the same time you are deriving big profits from your crops?

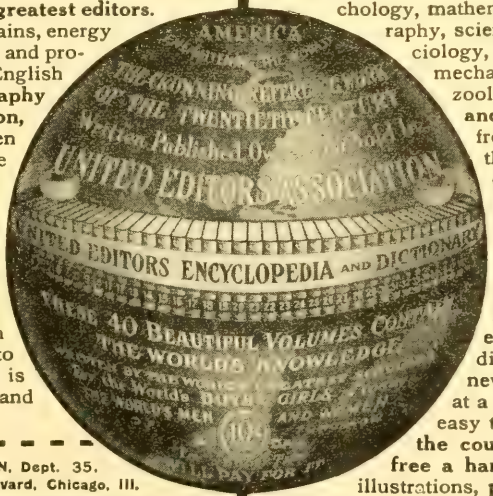
**OUR LITERATURE IS FREE.** The "Seaboard Magazine," prepared especially for the benefit of parties contemplating a change of location, will help you. Let us put your name on our mailing-list. Drop us a postal to-day,

**J. W. White,**
**General Industrial Agent,**
**Seaboard Air Line Railway,**
**Dept. F, Portsmouth, Virginia.**



# THE Editors Encyclopedia

and Dictionary contains 40 volumes, 100 maps, 7,000 illustrations, 30,000 pages and the world's knowledge all written and arranged by nearly 1,000 of America's greatest editors. A product of American brains, energy and co-operation. Defines and pronounces every legitimate English word. Contains the biography of every important person, living or dead. Made by men whose practical experience has taught them what to include and what to omit.




## Mail the Coupon

**Cut This Out and Mail Now.** It implies no financial obligation whatever. We want you to know why this new work is better than any other and cheap only in price.

CUT HERE

UNITED EDITORS ASSOCIATION, Dept. 35,
Cable Building, 28 Jackson Boulevard, Chicago, Ill.

Gentlemen:—Please send without cost or obligation to me full particulars regarding your new Encyclopedia and Dictionary, including sample pages, full page illustrations in tints and colors, colored maps, etc.

*Name*... .....

*Address* .....

# AN Up-To-Date Library

A practical work written by practical men for practical people; embracing all that is known of history, literature, education, philosophy, psychology, mathematics, religion, art, biography, science, medicine, civics, sociology, commerce, geography, mechanics, electricity, botany, zoology, etc. All the learning and wisdom of the world from dawn of recorded thought to present year—each subject presented in clear, simple language.

## Mail the Coupon

**A Few Sets Only, Now Offered.** The editors have arranged to distribute a few sets of this new work in each vicinity at a very small price and on easy terms. Cut out and mail the coupon today and receive free a handsome book containing illustrations, portraits, maps, beautiful colored plates, sample articles, etc. With this book we will send you full particulars telling how easily you can own this great reference Library.

**Mail the Coupon Today**

UNITED EDITORS ASSN., Dept. 35 Cable Bdg. 28 Jackson Bvd. Chicago

# The Young Man or Woman

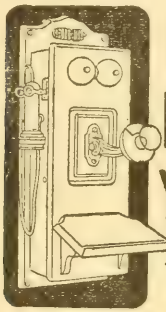
**who is a High-School Graduate**

contemplating the study of medicine will receive a catalog if inquiry be made of

**W. B. HINSDALE, M. D.,**

Dean of Homeopathic Dept. of University of Michigan

**ANN ARBOR, MICH.**



# Let us tell you How to Increase Your Farm Profits

HERE'S the answer: Build a telephone line—you and nine or ten of your neighbors—so that you can keep in daily touch with your markets.

The telephone is more of a necessity on the farm than it is in the city. You can buy a

**Stromberg-Carlson**

# Telephone

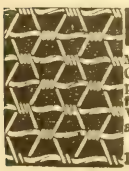
equipment at reasonable costs and by following our easy and simple directions can build the line yourselves.

A telephone on the farm keeps you in touch with the markets and enables you to get medical or other assistance quickly when needed, to say nothing of its social features.

Let us send you our book, "How the Telephone Helps the Farmer," 21st edition and other booklets. They are free.

**Stromberg - Carlson Telephone Mfg. Co.,**

**Rochester, N. Y. Chicago, Ill.**



**FENCE** *Strongest Made*

Made of **High Carbon Double Strength** Coiled Wire. **Heavily Galvanized** to prevent rust. Have **no agents.** Sell at **factory prices on 30 days' free trial.** We pay **all freight.** 37 heights of farm and poultry fence. **Catalog Free.**

**COILED SPRING FENCE CO.**

Box 101 **Winchester, Indiana**

**THE "BEST" LIGHT**

One burner will give as much light as ten ordinary oil lamps; six 16 candle power electric bulbs—six 16 candle power gas jets or 5 acetylene gas jets. Costs 2 cts. per week. Produces a pure, white, steady, safe light. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog.

**THE BEST LIGHT CO.**

**306 E. 5th St., Canton, O.**

**Let Me Pay Postage on My Big Free Book to You**

Just write a postal for my Big 1908 Book—shows big line of

**Split Hickory Vehicles**

—Sold on 30 Days Trial—Guaranteed Two Years. I make all my Buggies to order—sell them direct from factory and let you use them free for 30 days as a test. My Buggy Book gives you full particulars of my offer. Two big factories. H. C. Phelps, Pres., OHIO CARRIAGE MFG. CO., Station 293 Columbus, Ohio.

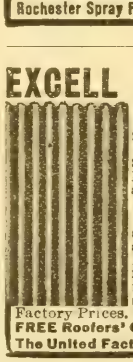
**THE "KANT-KLOG" SPRAYERS**

**Something New.** Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same Nozzle. Ten styles. For trees, vines, vegetables, whitewashing, etc.

**Agents Wanted.** Booklets free.

**Rochester Spray Pump Co., 32 East Ave., Rochester, N. Y.**

**EXCELL IRON and STEEL ROOFING and SIDING**



Send today for Free Book and bottom Factory Prices on Metal Roofing and Siding. Made in our own factory. Better than you can buy elsewhere at any price. Shipped at our risk. You

**Send No Money**

so you take no risk. Our guarantee and see-what-you-buy-before-paying-Plan specify you pay nothing unless fully satisfied. Lowest prices on all roofing and roofing supplies sold straight to you from Factory at real Factory Prices. Don't buy till you get our prices and **FREE Roofers' Guide**—Write for this Book today.

**The United Factories Co., Dept. 38-R, Cleveland, O.**

**Get My Big Book Now Free**

Two full gallons free to try—3 Months Time to Pay—You Pay no Freight to try my Paint.

I want to send you my Books and big Color Cards to select from—all FREE. They tell why my Made-to-Order Paint is better than ready-made or painter-made Paint—tell why I save you money and give you a satisfactory, long lived paint—made fresh to order for the individual user—shipped in cans dated the day it's made—and sold under a $100.00 gold guarantee as to its purity. Write me today—just a postal.

**O. L. Chase, The Paint Man, Dept. D24, St. Louis, Mo.**

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLD'G. CLEVELAND, OHIO.**

# FIX YOUR ROOF

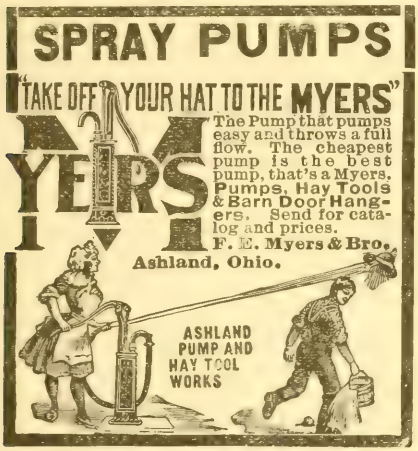
**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

**Roof-Fix** The Perfect Roof Preserver, makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our free roofing book tells all about it. Write for it today.

The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.

# SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"



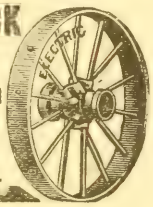

The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

F. E. Myers & Bro., Ashland, Ohio.

# SAVE YOUR BACK

Save time, horses, work and money by using an

**Electric Handy Wagon**

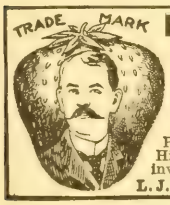



Low wheels, broad tires. No living man can build a better. Book on "Wheel Sense" free.

Electric Wheel Co. Bx 95, Quincy, Ill.

# 450,000 TREES

200 varieties. Also Grapes, Small Fruits etc. Best rooted stock. Genuine, cheap. 2 sample currants mailed for 10c. Desc. price list free. LEWIS ROESCH, Box A, Fredonia, N. Y.




# BERRY PLANTS

We are headquarters for plants of the new "Oswego" strawberry and 50 other best new and old varieties. Also the "Plum Farmer" raspberry and other desirable kinds of Raspberries, Blackberries and other Fruit Plants, etc. 24 years experience. Highest awards at World's Fair. We invite correspondence. Catalog free.

L. J. Farmer, Box 808, Pulaski, N. Y.

# EVERGREEN SHADE-TREES.

White Cedar, 3 to 4 ft., 25 cts. each; Spruce, 3 to 4 ft., 25 cts. each; Balsam, 3 to 4 ft., 25 cts. each. Send for price list and get reduced prices on large orders. Address SCHUH BROS., CATAWBA, WIS.

# Cow Peas. Wood's Seeds.

We are headquarters for all Farm Seeds—**Cow Peas, Soja Beans, Millets, Sorghums, Ensilage Corn, Crimson Clover, etc.** prices quoted on request.

Write for prices and **Wood's Crop Special**, giving interesting information about Farm Seeds. Mailed free on request.

**T. W. WOOD & SONS,**

SEEDSMEN, - - RICHMOND, VA.

# PATENTS.

Twenty-five Years' Practice.

**CHARLES J. WILLIAMSON,**

Second Nat'l Bank Bldg., Washington, D. C.

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

# Duroc Jersey, Tamworth, and Hampshire Swine a Specialty.

Finely bred and eligible to registry. White Leghorn and Barred Rock eggs; fancy strains. Eggs, 30 for $1.50; $4.00 per 100. Narragansett turkey eggs, 12 for $3.00. Scotch Collie puppies. Also the best herd-books for recorded stock. Satisfaction guaranteed. Send for circular now. Address

**Jno. M. Wheeler, Winchester, Ky., Rt. 4.**

# Your Name Will Get $2 Eggs

*For 50 Cents Per Sitting*

The White and Brown Leghorns are the greatest layers in the World. I keep 1000 of the celebrated Chamberlain laying strain on my Experimental Farm, and to increase the sale of my Perfect Chick Feed, I will send to any one who will send me their name so I can send them my Perfect Chick Feed Catalogue, 2 sittings of Single Comb Brown or White Leghorn Eggs for $1 for the 2 sittings. Only 2 sittings sold to one person. White or Barred Plymouth Rock Eggs $1 per sitting. This is a rare chance to get a start of extra fine stock. Send money and have your orders booked early as we can only fill about 1 order in 10 in season.

W. F. CHAMBERLAIN, *(The Perfect Chick Feed Man)*
KIRKWOOD, MO.

All leading varieties of standard-bred chickens, ducks, geese, turkeys, and peafowls. Send 4 cts. for large catalog.
J. J. BRENNER, D.12, Mankato, Minn.

# The National Fruit Grower

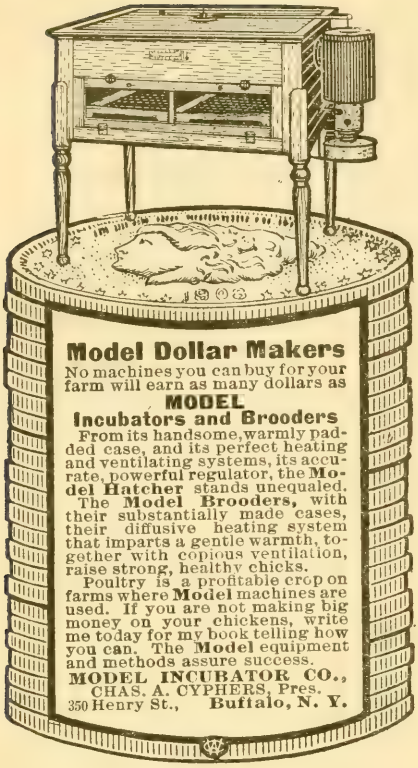
is a monthly publication of great importance to growers of fruit. The Spraying Department each month is worth the yearly subscription price of 50 cts.

SEND 10 CTS. FOR THREE MONTHS' TRIAL SUBSCRIPTION.

The National Fruit Grower, St. Joseph, Mich.

# FRUIT TREES

as cheap as $5 PER 100 Guaranteed true to name. FREIGHT PAID. Apple, Pear, Plum, Cherry, Peach and Carolina Poplars, healthy and fumigated. All trees, plants at low wholesale prices. We beat other reliable Nurseries in quality and prices. Catalog free. Reliance Nursery, Box 816 Geneva, N. Y.



**Model Dollar Makers**

No machines you can buy for your farm will earn as many dollars as

**MODEL Incubators and Brooders**

From its handsome, warmly padded case, and its perfect heating and ventilating systems, its accurate, powerful regulator, the **Model Hatcher** stands unequaled. The **Model Brooders,** with their substantially made cases, their diffusive heating system that imparts a gentle warmth, together with copious ventilation, raise strong, healthy chicks.

Poultry is a profitable crop on farms where **Model** machines are used. If you are not making big money on your chickens, write me today for my book telling how you can. The **Model** equipment and methods assure success.

**MODEL INCUBATOR CO.,**
CHAS. A. CYPHERS, Pres.
350 Henry St., **Buffalo, N. Y.**

**$7.15 Buys the Best 120-EGG Incubator ever made**

**Branches**
St. Paul
Buffalo
Kansas City
Detroit

**Freight Prepaid East of Rockies**

Double cases all over; best copper tank; nursery; self-regulating. Best 100 chick hot-water Brooder, $4.35. Both ordered together, $11.00. **Satisfaction guaranteed.** No machines at any price are better. Write for our book today or send price now and save waiting.

**Belle City Incubator Co., Box 69, Racine, Wis**

**GREIDER'S FINE Poultry Catalogue**

for 1908 is larger and better than ever. Tells all about pure-bred poultry and **illustrates 60 varieties.** Contains **10 beautiful chromos** of leading breeds—pretty enough to frame. Tells of best Louse Killer, how to cure diseases, make money. Only 10c postpaid. Send to-day for a copy.

**B. H. GREIDER, Rheems, Pa.**

**4 LEADING BREEDS of POULTRY**

R. C. Rhode Island Reds, White and Silver-laced Wyandotte eggs per 15, $1.25; Barred Rocks at $1.25 per 15. Muscovie duck-eggs, $3.00 per 9. Fine Italian stand of bees, $5.75 with queen; tested queen, $1.25.

**Address LAFAYETTE POULTRY CO., ALMA, MO.**

# NEW GOODS! BIG STOCK!

**New Warehouse Root's Goods**
**Prompt Shipment Low Freight**

**EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.**

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
**241 BULL ST. SAVANNAH, GA.**

# WESTERN Bee-keepers

**.. will ..**

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

# FREE! 50 lbs. Comb Foundation FREE!

## WEED'S NEW-PROCESS COMB FOUNDATION.

# PRIZES GIVEN AWAY

ABSOLUTELY FREE IN A CONTEST.

**FIRST PRIZE—25 lbs. Comb Fdn.** **THIRD PRIZE—5 lbs. Comb Fdn.**
**SECOND " —10 lbs. Comb Fdn.** **FOURTH " —5 lbs. Comb Fdn.**
**FIFTH PRIZE—5 lbs. Comb Fdn.**

THE ABOVE PRIZES will be given absolutely free to those who will make the largest number of words out of the letters found in the name "Toepperwein." The letters may be used over as many times as desired, but in no single word oftener than found in the name "Toepperwein." Only words found in Webster's dictionary are admitted. The words must all be plainly written in columns, and numbered.

This contest is absolutely free to any one and anywhere. It is a fair contest, and one has the same chance as the other. These contests are very instructive, and just the thing for schoolchildren to pass the evenings. The contest will close May 1, 1908, and all lists with words must then be in, and in May 15th GLEANINGS the results will be published, giving the names of the winners and all the words of the one who wins the first prize. The winners have the privilege of choosing any grade of foundation. We feel confident that the winners will be highly pleased with the prizes, as the comb foundation is as fine and perfect as any machinery can make, and is made right here in our factory out of this clear Southern beeswax.

## SHIPPING-CASES.

12-in. 4-row shipping-cases, with 3-in. glass.....$17.00 per 100.
9¼-in. 4-row shipping-cases, with 3-in. glass..... 15.00 per 100.
10-in. 2-row shipping-cases, with 3-in. glass..... 9 35 per 100.
6¼-in. 3-row shipping-cases, with 3 in. glass..... 9.80 per 100.
7⅛-in. 3 row shipping-cases, with 3-in. glass..... 10.70 per 100.

## ROOT'S BEE-SUPPLIES.

We always carry a large and complete stock of The A. I. Root Co.'s make of bee-supplies at Root's factory prices. Write us for illustrated catalog and price list.

## WEED NEW-PROCESS FD'N.

We have just received a set of new machinery, and our *Weed New Process Foundation* is perfect and gives perfect satisfaction everywhere.

## 13,000 CASES OF HONEY-CANS

on the way which will be here in time to supply the bee-keepers with cans. We buy honey in large amounts at market price.

Whenever you are in San Antonio make our office your headquarters and let us show you through our plant. Stay here a while and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

## UDO & MAX TOEPPERWEIN,

**1322 South Flores St.** **SAN ANTONIO, TEXAS.**

# ITALIAN Queens

and bees, and nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Our stock is northern-bred and hardy. We just visited our outyards (all wintered on summer stands), and not a colony is dead to date (March 18). Some hives have lost scarcely a bee, so it appears. BROTHER BEE-KEEPER, how do you like such stock for hardiness? A party up in Maine got 50 nuclei of us several years ago. We just received a letter from him. He is after more of our bees, because last season he got 2200 pounds of honey which sold for 22 cts. per pound. Our stock is well known throughout the United States. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Free circular and testimonials. Price of stock as below.

| Prices of Queens before July. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $1 00 | $5 00 | $ 9 00 |
| Tested queens | 1 50 | 8 00 | 15 00 |
| Select tested queens | 2 00 | 10 00 | 18 00 |
| Breeders | 4 00 | | |
| Golden five-band breeders | 6 00 | | |
| Two-comb nuclei, no queen | 2 50 | 14 00 | 25 00 |
| Three-comb nuclei, no queen | 3 50 | 20 00 | 35 00 |
| Full colonies on eight frames | 6 00 | 30 00 | |

ADD the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

## QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio

## Imported Carniolans, Caucasians, Queens

and Hungarians (Banats), each bred in native land of respective race, $5.00 each. Now on hand ready for immediate delivery.

**Frank Benton, P.O.Box 17, Washington, D.C.**

## Queens from Southwest Florida

From very best stock, furnished by The A. I. Root Co.; reared on the island where A. I. Root was formerly located. Prompt shipments and correspondence solicited. I. T. SHUMARD, Osprey, Manatee Co., Fla.

## Queens FOR 1908.

Finest Goldens bred in America. Send for my latest circular and prices — "and be convinced."

**DANIEL WURTH, . PITKIN, ARK.**

## GOLDEN ITALIAN QUEENS, $1

**Six for $5.**

Safe arrival and satisfaction guaranteed. 18 years' experience. Circular.

**J. B. CASE, Port Orange, Fla.**

## GOLDEN-ALL-OVER and RED-CLOVER ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers. Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $5.00 | $9 00 |
| Select untested | 1.25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.

I am booking orders now, delivery after May 25.

**Wm. A. Shuff, 4426 Osage Ave., Philadelphia, Pa**

## Taylor's Strain of Italians is the Best

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3 00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

J. W. TAYLOR & SON, Beeville, Bee Co., Texas.

## Italian Bees and Queens

from Root's red-clover stock of golden Italian queens. Untested, 75 cts. each; six, $3.75. Select untested, $1.00 each; six $5.00. Tested, $1.50 each; six, $8.00. Select tested, $2.00. Two frame nuclei, with untested queen, $2.25. Orders filled in rotation. Send all orders to E. A. SIMMONS, GREENVILLE ALA

## NOT CHEAP QUEENS, BUT QUEENS CHEAP

**500 Best Strain Italian Queens Ready to Mail March 1st.**

Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK ARK.**

## The Time To Place Your Order for QUEENS

for spring delivery is here. Order now (with partial payment if not convenient to send all) and state when you want delivery. When ready for the queens, send the remainder. By so doing I shall be able to handle your order without the usual delays incident to the rush orders when the season is on.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested, in May and June, | $1.00 | $5.50 | $10.00 |
| Untested, after July 1 . . | .75 | 4.00 | 7.50 |

Selects, 25 cents extra. Tested, May and June, $1.50; after July 1, $1.25. Nuclei and full colonies ready May 1. Catalog for 1908 free. Send for one.

**GEO. W. BARNES, Box 340, NORWALK, O.**

## Westwood Red-clover Queens

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, $1; tested, $1.25. Address New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.

## W. H. Laws

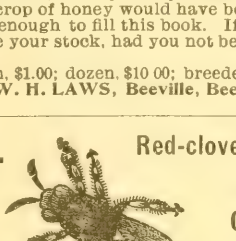
is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled. Testimonials enough to fill this book. If you are going to improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10 00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

## For Sale.

A Carload of BEE-SUPPLIES. AND QUEENS.



Red-clover, Italian, and Caucasian Queens Ready Now.

SEND ME A BILL OF SUPPLIES NEEDED, AND I WILL GIVE YOU MY LOW PRICES.

*I can save you money.*

PRICES OF QUEENS: Untested, 85 cts. each; dozen, $8.50; tested, $1.00; dozen, $10 00; breeding queens, $2.50 to $5.00; nuclei, four-frame, with fine queen, $4.00.

SEND FOR CATALOG. GOODS GUARANTEED.

**G. ROUTZAHN, BIGLERVILLE, PA.**

## DOOLITTLE & CLARK

have some choice Italian queens reared last fall, and ready for delivery May 1. These queens are mated to select drones. Price $2 50, $5.00, and $10 00

**BORODINO, ONONDAGA CO., N. Y.**

## Queens Queens

of the

## FINEST POSSIBLE BREEDING

BRED BY

**F. J. WARDELL,**

**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen . . . . . | $1.25 |
| Select untested queen . . . . | 1.50 |
| Tested queen . . . . . | 2.50 |
| Select tested queen . . . . . | 3.50 |
| Breeding queens . . . . . | 6.00 |
| Select breeding queens . . . . | 9.00 |
| Extra select " 1 year old, | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

We are READY NOW to take your orders for

## Bees—Nuclei and Queens

Shipment can be made with safety on and after May 15; we guarantee *safe arrival* then. If you want queens early, communicate with us; we have a few that we can ship by May 5, at your risk.

Don't forget that we do a general bee and honey business; that we can supply you with Root hives and fittings, sections, foundation, tools, etc., at their factory prices. It is not necessary to have our catalog (though we send it free); make your list from any Root catalog published this year; send us the total amount, and we'll ship the goods by the most direct route. Dozens of freight trains enter and leave Bangor each day, and we're waiting to hustle your order aboard one of them in red-hot fashion. If you're not decided about some detail, or want us to quote you a net price on the supplies you want, write us; the mails travel 800 miles a day, and you will be surprised to see how quickly we will answer your inquiries. And we'll do it *cheerfully* too.

SEND US YOUR WAX. We are giving *thirty cents cash*, or *thirty-three cents in trade* for pure yellow beeswax of average quality.

TIME IS UP on our special book-offer May 1. After that date all bee-books and journals will be sold at regular price instead of the 10 per cent discount we have been giving.

**GEO. S. GRAFFAM & BRO., Fifth St., Bangor, Me.**

## How are Your Bees?

### Any Queenless Colonies?

If so, send for a queen at once. We can furnish by return mail fine tested queens, reared last fall, wintered in four-frame nuclei, three-band Italians, none better, $1.00 each. Satisfaction guaranteed. Send for price list.

**J. W. K. SHAW & CO., Iberia Parish. Loreauville, La.**

**QUEENS FROM ITALY** Tested. Safe arrival guaranteed. $2 each. References: The A. I. Root Co., G. M. Doolittle, C. P. Dadant, etc.
Address: V. ASPREA, GALLINA, CALABRIA, ITALY.

If You are Located in
**West Virginia or Ohio**
or anywhere else, order ROOT'S GOODS from PEIRCE and save time and freight.
EDMUND W. PEIRCE,
136 W. Main St., Zanesville, O.

BIG STOCK OF A. I. ROOT CO'S AND MARSHFIELD CO'S
**BEE-SUPPLIES AT MANUFACTURERS' PRICES**
For cash sent in April, deduct 8 per cent; for cash sent in May, deduct 7 per cent; take their 1908 price lists if you have one. If not, send for one or both. S. D. BUELL, Union City, Mich.

SAVE EXPRESS!
SAVE FREIGHT!
SAVE TIME!
by ordering your supplies in Boston
H. H. JEPSON,
182 Friend St. Phone Haymarket 1489-1

**WANTED—Salesmen**
TO INTRODUCE OUR NEW WALL-CHARTS
These charts are a splendid compilation of facts, figures, and drawings, showing all the latest statistics gathered by the county and State officials. They are of wonderful value in the home and in all classes of business. Railroads are shown up-to-date, special attention being given to them. All counties, towns, and postoffices fully indexed, and population given; many other features too numerous to mention. A splendid opportunity for energetic men.
RAND, McNALLY & COMPANY, CHICAGO, ILL.

**ROOT'S BEE-SUPPLIES**
AT SPRINGFIELD, MASS.
New Goods. Free Catalog. 'Phone.
F. R. DANIELS, 117 FLORENCE ST.

**Honey-cases for Sale.** Price 30 cts. per case. Two cans to the case. Both cans and cases in A-1 condition. For lots of 100 or more write us for price. Michigan White-Clover Honey Co., Detroit, Mich.

FOR SALE.—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

# The Hand System

TO satisfy a number of customers we are now making hives to suit the above system, just as the inventor himself uses them. These are not listed in our regular spring catalog, and are not kept in stock at any of our agencies. All orders will be filled from Medina. If ordered early enough, however, they can be forwarded to any one of our branches for redistribution. If you are going to try a few of these hives the coming season, we earnestly urge you to order early before the rush season comes on.

PRICE LIST OF HAND DIVISIONAL HIVE AND PARTS.

We have had numerous calls for divisional hives just as Mr. Hand uses them. We will not list them in our catalog for the coming season, but will make them up to supply on special order, to those who desire to try them, at prices in table below. The outside dimensions being nearly the same as the regular Dovetailed hive, the regular covers and bottoms may be used.

| Each section is 19½ in. long, 5⅛ in. deep outside; upper portion of side removable with clamps to hold it in place. Sections used are 4¼x4¼x1½ plain, split three sides. Furnished in both eight and ten frame size. | Designating or Short Name | Nailed and Painted Each | In Flat | | |
|---|---|---|---|---|---|
| | | | Each | Five | Weight of 5 |
| Hand brood or extracting section, including the frames, springs, clamps, and nails; no foundation | Hand 8-8 | $ 65 | $ 50 | $ 2 25 | 35 |
| | Hand 8-10 | 70 | 55 | 2 50 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and 1-inch foundation starters | Hand 9-8 | 75 | 60 | 2 50 | 35 |
| | Hand 9-10 | 80 | 65 | 2 75 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and full sheets comb foundation | Hand 0-8 | 1 30 | 85 | 4 00 | 38 |
| | Hand 0-10 | 1 40 | 95 | 4 50 | 43 |
| Hand comb-honey section, including section-frames, and fences; no sections or foundation starters | Hand 2-8 | 75 | 60 | 2 75 | 30 |
| | Hand 2-10 | 80 | 65 | 3 00 | 35 |
| Hand comb-honey section, including section-frames, fences, sections, and full sheets foundation | Hand 1-8 | 1 45 | 1 00 | 4 75 | 35 |
| | Hand 1-10 | 1 55 | 1 10 | 5 25 | 40 |
| Hand four-section hive including two brood and two comb-honey sections; no sections or foundation starters | HandCE8822-8 | 3 50 | 2 65 | 12 00 | 180 |
| | HandCE8822-10 | 3 75 | 2 90 | 13 25 | 190 |
| Hand four-section hive including two brood and two comb-honey sections with sections and full sheets foundation | HandCE0011-8 | 6 30 | 4 25 | 20 00 | 200 |
| | HandCE0011-10 | 6 75 | 4 70 | 22 25 | 210 |
| Hand sectional super, no inside fixtures, including clamps nails, and flat tins | Hand Super-8 | 40 | 30 | 1 25 | 22 |
| | Hand Super-10 | 43 | 32 | 1 35 | 24 |

Hand brood-frames, 4⅞x17⅝x1⅝; ends, 1⅜x$\frac{5}{16}$; top, $\frac{13}{16}$x⅜; bottom, ½x¼ .... $2 00 per 100 in flat; $18 00 per 1000
Hand section-frames, 4⅞x17⅝x1⅛; ends and top, 1½x¼; bottom, 1½x⅜..... 2.50 " " 22.00 "
Hand fences, 4⅞x17⅝ P style ..... 1.75 " " 16.00 "

**The A. I. Root Company, Medina, Ohio**

## Classified Advertisements.

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Help Wanted.

WANTED.—A young bee-keeper who wants to learn the business, and is willing to work anywhere.
W. L. COGGSHALL, Groton, N. Y.

## Wanted, Situations.

A single woman of 35 would correspond with bee-keepers with a view of engaging to work where she can learn the business. Best of references given and required. J B. NEWTON, Eastern Av., Springfield, Mass.

WANTED.—A German couple desire a situation with some bee-farmer; have had 15 years' experience. Can also do gardening and light carpenter work. In regard to place and wages, address
NICK BABEK, 3109A, Alfred Ave., St. Louis, Mo.

## Post Cards.

"Kinks on Post Cards" is a booklet telling you the things you don't know about making photographic post cards. Write for particulars.
E. O. WALTZ, Medina, Ohio.

## Plants.

GLADIOLUS BULBS.—Choice stock in mixtures and named varieties. Descriptive price list and cultural directions free. M. T. WRIGHT, Medina, O.

Beautify your homes with our plants Twelve all different geraniums, $1.00; salvia, 40c per doz.; asters, pansies, and verbenas, 25c per doz; coleus, 40c per doz Fine plants. Express and postage charged to purchaser. List free.
HAMMERSCHMIDT & CLARK, Dept. A, Medina, O.

## Food Products.

Send for circulars and price lists of Smucker's apple butter. Guaranteed to be absolutely pure. Agents wanted. J. M. SMUCKER, Orrville, Ohio.

## Rugs.

Be sure to send for our circular before you have your old carpet made into rugs. A postal will bring it. SANITARY RUG CO., Delaware, O.

## Poultry Offers.

W. Wyandotte eggs, 15, 65c. J. H. RISING Owego, N. Y.

FOR SALE—Best White Leghorns; eggs, 15, $1.00; 30, $1.75. G. DETTMANN, Appleton, Wis. R. No. 6.

FOR SALE.—$1.00 Barred Rock and Pekin duck eggs. Circular. A. W. NEWCOMER, Glen Rock, Pa.

FOR SALE.—About 40 pairs of Plymouth Rock Homer pigeons at a bargain. G. W. PETRIE, Fairmont, Minn.

FOR SALE—Eggs from my select S. C. W. Leghorns, B. P. Rocks, $1 per 15. C. R. GUERNSEY, E. Cobleskill, N. Y.

FOR SALE.—Choice Silver-spangled Hamburg eggs, $1.50 for 15. ELIAS FOX, Hillsboro, Wis.

FOR SALE.—Single-comb Brown Leghorns and Buff Orpington eggs, $1 per 15; $4 per 100. Fertility guaranteed. C. M. CONRAD, Flanagan, Ill.

FOR SALE.—Indian Runner duck eggs from choice stock, $1.00 per 12; $4.00 per 55; $6.50 per 100.
KENT JENNINGS, Mt. Gilead, O.

FOR SALE.—White Wyandottes, 15 eggs, 75 cts.; 30, $1.25. Uncle Sam potato, very productive; 1 pound by mail, 30 cts. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—Eggs for hatching. Rose Comb. White Leghorn, 15 for $1.00; 30 for $1.75.
E. M. JOHNSON, Blue Mounds, Wis.

FOR SALE.—Rose Comb W. Leghorn eggs, $1.00 per 15; 30 for $1.50. S. THOMAS,
Route 1, Box 1, Osceola Mills, Pa

FOR SALE.—Standard-bred snow-white Rock eggs. 15 $1.00; 50, $3 00; 100, $5.00. Satisfaction, or money back. GEO. W. COOK, Spring Hill, Kan.

FOR SALE.—W. P. Rocks, Fishel and Empire strain. I have twenty select females headed by two extra-fine roosters. Eggs, $2.00 per twenty.
W. M. PARRISH, Rt. 8, Lawrence, Kan.

FOR SALE.—Eggs for hatching from choice stock of the "Best Fowls on Earth" (Rose Comb Rhode Island Reds), $1.00 per 15. BURDETT HASSETT,
Box 45, Reliance, Va.

FOR SALE.—Eggs for hatching, S. C. Brown, Buff, and White Leghorns; Buff and White Rocks; Buff Wyandottes and S S. Hamburgs, $2 00 per 15; $3 50 per 30. PETER H. LEVEY, Preston, Minn.

EGGS FOR HATCHING.—White Holland turkeys, Rose Comb Brown and White Leghorns; S. C. Black Langshans and Minorcas; Barred and White Rocks; White Wyandottes; Pekin and Rouen ducks. Catalog for stamp. JEWETT ALLEN, Walnut Grove, Minn.

White Wyandottes, great winter layers; 90 pullets averaged better than 50 per cent yield for December, January, and February. Eggs from these pens, $1.00 per 15; $3.00 per 50; $5.00 per 100.
H. H. WOODS, Crown Point, Ind.

Highland Farm S. C. Brown Leghorns are veritable egg-machines, and will lay their weight in eggs in 30 days—farm range, vigorous stock; bred to lay; eggs, $1 00 per 15; $1.75 per 30. Prompt service and satisfaction guaranteed. J. E. HAND,
Birmingham, Erie Co., Ohio.

## For Sale.

FOR SALE.—White silk French poodles. Puppies, $5 and $10. MRS. CARRIE BRANCH, Garrett, Texas.

FOR SALE.—Vermont bee-keepers should have my 1908 price list. C. J. LAMB, East Calais, Vt.

FOR SALE.—200 lbs. brood or surplus foundation at a bargain. F. W. LESSER, Sta. A, Syracuse, N. Y.

FOR SALE.—25 ex. supers, new combs, L. size; 20 q. excluders, wood-zinc, new; 10-fr. comb-honey supers. Other supplies. ISAAC D. KREISS, Benjamin, Pa.

FOR SALE.—Best Wisconsin sections, per 1000, $4.00; 2000, $7.75; 3000, $11.10; No. 2, 50 cts. less. Discount on Root's and Danz. hives and other supplies. Fifteen eggs, B. P. Rocks and Wyandotte, $1.00; Pekin ducks, 11 eggs, $1.50. H. S. DUBY, St. Anne, Ill.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. W. P. SMITH, Penn, Miss.

FOR SALE.—Honey-cans used but once, emptied without steam or water, bright and clean; 100 cases or more, per case two cans, 25c; 50 cases, 30c; 25 cases, 32c; less, 35c. E. R. PAHL & Co., Milwaukee, Wis.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer. CLEVELAND HEALTH FOOD Co., Cleveland, O.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cts. each, postpaid. FRANK ALEXANDER,
Delanson, N. Y.

FOR SALE.—Two hundred 8-frame dovetailed hives (Root's make), 200 5-gal. honey-cans in cases (new) at Lovelock, Nevada. Address C. K. ERCANBRACK,
Watsonville, Cal.

FOR SALE.—Yellow and white sweet-clover seed. Yellow, hulled, at 18 cts., and white about ¾ hulled, at 12 cts. per lb., in lots of 100 lbs. or more. On smaller lots a little extra to cover extra cost.
M. W. HARRINGTON, Williamsburg, Iowa Co., Iowa.

FOR SALE.—One two-horse steam-boiler, $30; one six-horse boiler, $60; one 2½-horse engine, $35, all in perfect working order, with fittings to connect to engines. All machines upright. J. W. UTTER,
Amity, Orange Co., N. Y.

FOR SALE.—Well-established queen-rearing business, widely advertised for two years; large circle of steady customers; best testimonials; orders at hand; best location and climate; no speculation. Reason for selling, departure for Europe. Write immediately to A. E. TITOFF, Ioamosa, Cal.

FOR SALE.—My out-apiary of 25 colonies very cheap, or I will sell the bees for $4.00 per colony. They are in The A. I. Root Jumbo hive, all good straight combs, built on wire. It is in a good place in an orchard, one block from the street-car; honey-house and fixtures. J. M. ROOD,
2234 Jefferson Ave., W., Detroit, Mich.

FOR SALE.—75 eight-frame Root hives with good worker combs; used two seasons; also lid and bottom; $1.60 each. One hundred 4¼ supers, trimmed with sections and foundation; used one season; 40c each. Sixty 10-frame hives and 5 Danzenbaker hives, with combs wired, all Root's goods, $1.75 each, without super. Thirty 8-frame supers, trimmed, $3.00 each.
H. A. ROSS, Evansville, Ind.

## Real Estate for Bee-keepers.

FOR SALE.—Residence in a university city in the Ozark Mountains. Four-room house; basement and cellar; east and north front. Price $1000. Terms, $500 cash, rest on time. Call on or address
MRS. M. B. READ, 301 S. School St., Fayetteville, Ark.

FOR SALE.—Three village lots with a three-room house, small barn and henhouse, and 100 colonies of bees in two-story dovetailed comb-honey hives, extractor and all fixtures; good location; satisfactory reasons for selling. Write for particulars if interested. S. LAMONT, Jarretts, Minn.

FOR SALE.—A desirable farm of 118 A. in southern Michigan, well located, and in a fine bee country; 100 A. plow land in a good state of cultivation; 15 A. valuable timber, plenty of good buildings, good water, and a fine bee-cellar. Write for particulars.
FLOYD E. SMITH, Somerset Center, Mich.

FOR SALE.—Good bee and fruit ranch. Price $4500; 200 acres of land; 20 acres tillable; 500 apple-trees from 2 years old to 10; 200 English walnuts; 50 peach-trees; good small house, and barn. The rest of the ranch is mountain covered with live oak—say 4000 cords of wood. One of the best sage-brush locations in central California; 200 stands of good bees in patent hives on full foundation; extractor-tanks, honey-house; only 12 miles from San Luis Obispo, Cal. This place is well watered with plenty of good spring water, and a snap if taken soon. OTIS RAMAGE,
San Luis Obispo, Cal.

## Wants and Exchange.

FOR EXCHANGE.—12 volumes of Gleanings.
W. H. KERR, Crawfordsville, Ind.

WANTED.—Bees, full colonies, nuclei, for Rossland, British Columbia. E. M. HUSBAND Delaware, Ont., Can.

WANTED.—To purchase an apiary in a good location. A. CARDER, Constance, Boone Co., Ky.

WANTED.—20 to 50 colonies bees in L. frame hives, within 200 miles of Chicago. F. E. EMERSON,
2887 N. 46th Ave., Chicago, Ill.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price.
OREL L. HERSHISER,
301 Huntington Ave., Buffalo, N. Y.

## Bees and Queens.

Early queens, 70 cts.; after May 15, 60 cts.; also bee-supplies. List free. A. RATTRAY, Almont, Mich.

FOR SALE.—Five colonies of bees in Root hives.
J. P. GEIGER, Orwigsburg, Pa.

FOR SALE.—I will sell six colonies Italian bees at $4.50 per colony, Root Company 8 frame hives.
J. W. GARRY, Millstone, Md.

FOR SALE.—Untested golden Italian queens; good queens; safe arrival. One, 60 cts.; three or more, 50 cts. each. D. T. GASTER, Rt. 2, Randleman, N. C.

Italian queens, untested, 75 cts.; tested, $1.00; 2-fr. nucleus, with queen, $2; 8-fr. colony with queen, $7 and $8. E. M. COLLYER, 75 Broadway, Ossining, N. Y.

FOR SALE.—Twelve colonies Italian bees in shipping-boxes, on 7 L. or H. frames, in good condition, at $3.50 per colony. WM. AMELANG, Ottumwa Ia.

FOR SALE.—Fifty colonies of Italian bees, 8-frame Dovetailed hives, straight combs, no disease; $5.00 per hive. P. H. DAVIS, Camden Place, Minneapolis, Minn.

FOR SALE.—Ten stands of Italian bees in Langstroth-Simplicity hives. Will exchange for anything I can use. Bees are strong and in good condition. Make an offer. D. R. PHILLIPS, Brownsville, Pa.

FOR SALE.—45 colonies of bees; hives and fixtures for 100 more; shop extractor; uncapping-can; 60 twin mating-boxes in good sheltered location; good location for queen-rearing. Also incubator and brooder.
A. H. KANAGY, Milroy, Pa.

FOR SALE.—Thirty colonies of bees; mostly young queens of 1907; about half from J. P. Moore; have produced an average of 120 lbs. of honey per colony for 1905 and '6. Complete outfit of supers, extracting-combs, extractors, etc. G. H. EVANS, Napanee, Ont., Can.

FOR SALE.—400 colonies Italian bees in 8 or 10 frame Dovetailed hives with Hoffman frames, at $6.00 per colony. In lots of 10, $5.00 per colony.
F. A. GRAY, Redwood Falls, Minn.

Headquarters for shook-swarm bees. I furnish colonies until May 10. Two frames, brood and queen; enough bees to cover three frames. Buyers furnish shipping-cases at $1.50 f.o.b. A. DUNCAN, Argyle, Ga.

FOR SALE.—After May 15th, Italian, Carniolan, and Caucasian queens. Tested, $1.00; dozen, $11.00; untested, 75 cts.; dozen, $8.50; virgins, 40 cts.; dozen, $4.50. Nuclei, after June 10, 1, 2, and 3 frame, $2 00, $3.00, $4.00, including queens Orders booked now. Cash orders filled first. EDW. A. REDDOUT,
Baldwinsville, N. Y.

## Honey and Wax For Sale.

Fancy orange-blossom, 60-lb. cans, 8¾ cts.; water-white sage, 8½ cts.; light amber, 8¼ cts.; dark amber, 8 cts. E. R. PAHL & CO., Milwaukee, Wis.

FOR SALE.—302 lbs. of No. 1 white-clover comb honey in 4¼ plain sections, no-drip cases; 17 cts. a pound.
E. D. TOWNSEND, Remus, Mecosta Co., Mich.

FOR SALE.—5000 lbs. clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm,
Kendaia, N. Y.

FOR SALE.—A few 60-lb. tins of Michigan's best raspberry extracted honey.
A. G. WOODMAN CO., Grand Rapids, Mich.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans.
ROBT. A. HOLEKAMP & SON,
4263 Virginia Avenue, St. Louis, Mo.

FOR SALE.—White comb honey, No. 1, average 23 lbs. to the case of 24 sections, $3.25 per case; amber, $2.50. Fancy white extracted in 60-lb. cans, 10½c; amber, 9½c. HAROLD HORNOR, Jenkintown, Pa.

FOR SALE.—Choice extracted honey for table use—thick, well-ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample 10 cts. J. P. MOORE, queen-breeder, Morgan, Ky.

## Honey and Wax Wanted.

WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard,
North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 S. Water St., Chicago, Ill.

## Bee-keepers' Directory.

My late circular on bees and poultry will interest you. H. G. LARUE, LaRue, O.

ITALIAN queens bred for honey, untested, 75c each.
GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. Yates, 3 Chapman St., Hartford, Ct.

ITALIAN QUEENS.—Mott's long-tongued (Imp'd) and goldens. Circular free. E. E. MOTT, Glenwood, Mich.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Neb.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426 Osage Ave., Phila., Pa.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa. Queen-rearing outfits and books: new 40-p. catalog free

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND,
Birmingham, Erie Co., O.

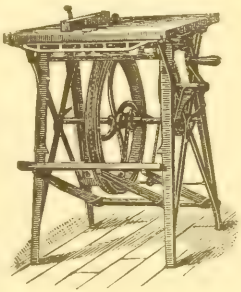
QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

ANGEL is breeding his Golden beauties and bright three-banded Italian queens, but will not offer any for sale this season, on account of not being at home at all times of the season. SAMUEL M. ANGEL,
Evansville, Ind.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular, order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

**BARNES'**
**HAND and FOOT POWER**
**MACHINERY**



This cut represents our combined circular saw, which is made for bee-keepers' use in the construction of their hives, sections, etc.

**MACHINES ON TRIAL**

Send for illustrated catalog and prices. Address
**W. F. & JNO. BARNES CO.**
**545 Ruby Street,**
**ROCKFORD, ILLINOIS.**

HONEY WANTED.

We are in the market for comb honey in Danzenbaker sections, either clover or basswood. Only fancy or A No. 1 grades are required. If you have any on hand which meets these requirements, please communicate at once, stating quantity and price.

CARTONS FOR OUNCE CAKES OF BEESWAX.

We can supply cartons for one-ounce cakes of beeswax, printed with name and address blank, at 35 cts. per 100; 250 for 80 cts.; 500 for $1 50; 1000 for $2.75; by mail, 15 cts. per 100 extra These prices will also include the large carton to contain 32 of the small ones. The complete package weighs 2 lbs., and, when filled, sells to the dealer at $1.00. They retail the cakes at 5 cts. each. Retinned molds for molding ounce cakes cost 35 cts. per dozen; by mail, 40 cts; for two-ounce cakes, 40 cts.; by mail, 50. We do not have cartons to fit the two-ounce cakes. To print your name and address on the cartons will add, 250 or less, 50 cts.; 500, 75 cts.; 1000, $1.00.

THE ALEXANDER BEE-VEIL.

We have secured, for making a bee-veil of wire cloth, a special weave of cloth having 8 meshes to the inch, and No. 32 wire painted black. Ordinary window-screen cloth is of the same size of wire, and 12 to 14 meshes to the inch. This special cloth is, therefore, more transparent, and obstructs the vision less, than any other cloth we were ever able to secure. One objection to a veil of this kind is its bulk and the difficulty of transporting it, either by mail or when packed with other goods. We have overcome this one objection by making it with an open seam from the crown to the bottom of the skirt. Eight small safety-pins are included to pin up this seam when you receive it, or you may prefer to sew it up. The veil is rolled up so as to be placed in a box 3 x 3 x 12 inches so that it can be mailed safely for 12 cents postage, or packed with other goods to go by freight Price, complete, 60 cts. By mail, 72 cts. Special wire cloth for veil furnished at 6 cts. per foot or piece for a veil at 18 cts.; by mail, 3 cts. a foot extra, or 25 cts. postpaid for a veil-piece 10 x 33 inches, having edges folded ready to sew on the cloth parts.

SIMPLEX HONEY-JARS.

The factory have assured us that we may again secure this popular honey-jar in several sizes, including the one holding one pound of honey. We have ordered a fresh supply, and expect to have them in stock this next month. They will be packed in reshipping-cases of two dozen each, and the price will be $1.10 per case; 6 cases, $6.30.

NO. 25 HONEY-JARS.

During the past year we have had an unusual amount of trouble with breakage of this jar, even in the reshipping-cases packed with corrugated paper. The breakage occurred either in the porcelain cap or the top rim of the jar where the cap rests. We find we can get this same jar with lacquered tin cap without the center being cut out. This cap is lined with waxed paper wad, which seals tight on the top edge of the jar. This style of cap not only does away with breakage almost entirely, but enables us to furnish the jar at a lower price. We are not yet supplied with the new stock, but expect to have them this month at the following price. They will be packed as usual, two dozen in reshipping partitioned cases. No. 25 jars, tin cap lined, 90 cts. per case; 6 cases, $5.10. We can still furnish from stock the usual style of No. 25 with porcelain caps at $1.10 per case; 6 cases, $6.30.

MAPLE SYRUP.

We have a good supply of very choice maple syrup which we can supply at $1.00 per gal.; 6 gal. at 95c; 20 gal. or over, 90c. Will be pleased to hear from those interested. Maple sugar is not so plentiful, and we can not offer this at less than 15c per lb. for best; 13c for fair to choice.

## Special Notices by A. I. Root.

WANTED—SEEDS OF HONEY-PLANTS.

Just now we are sold out of both spider plant and figwort (or Simpson honey-plant). If any of our readers have any seed of the above-named plants that they have saved, and will mail it to us, we shall be very glad to allow them what it is worth.

BASSWOOD-TREES FOR SPRING PLANTING.

I find on my return home from Florida that our people are sold out on basswoods "one foot and under." We are also sold out on every thing more than about 3 ft. high. But we have quite a good supply of little trees from 1 to 3 ft. high. Prices will be, for one tree, 10 cts.; 10 for 50 cts.; 100, $4.00. These are rather big to send by mail. But we can, however, pick out the smallest ones so the postage will not be so much, and send you ten of these little trees by mail for 50 cents. Better get in your orders at once if you want them, as they will soon be budding out; and they do much better when taken out of the ground before the leaves have made very much of a start.

ANOTHER POULTRY-BOOK.

On p. 527 a new book on poultry is announced; and as some of the claims made for it sound a little extravagant I sent for it while I was in Florida, and read it through twice, and certain parts of it several times. The book is so much in the line of my "nature studies" with poultry during the past two winters that I wrote to the author I should like to make him a visit; and I have to-day, April 9, just returned from that visit. I am satisfied that Mr. Philo has struck on a plan of saving a greater part (and perhaps almost all) of the chickens that die in the shell, even with the best incubators. I am satisfied, too, that he is succeeding with a fireless brooder, even during the winter months. I saw them not only at his place, but at several other places, working with apparent success. His plan of keeping poultry permits them to be kept, even in a crowded town or city, without annoying the neighbors. He seems also to have demonstrated that he gets fully as many eggs by keeping a few hens, say half a dozen, in the little houses he has devised, as where they have unlimited liberty. It is true the book is not a very large one; but the price, $1.00, includes a year's subscription to the excellent *Poultry Review*. When I first got the book, when I was down in Florida, I sat down and wrote the author as follows:

> *Friend Philo:*—I have had your book three days, and have read it through twice and much of it three or four times. The book is all original. Not only every page but almost every line has the stamp of a real practical worker, and of a delver for nature's secrets. It strikes on a hundred points where I have been pushing ahead in the dark—yes, in the dark, for the reason that the multitude of poultry books and journals have scarcely a word to say in the way of helping the explorer; and you have also done more than any other poultry writer, so far as I know, in making chickens attractive, and their care easy for the average boy or girl in towns and cities where room is expensive. The same will apply to poultry for elderly men and women. A. I. ROOT.
>
> Bradentown, Fla., March 10.

After looking it over more or less during the past month, and finally paying him a visit, I see no particular reason to change my mind in regard to the book as a system of poultry-keeping.

We expect to give a picture of one of his little poultry-houses in our next issue; and I shall then have something more to say in regard to my visit to his place.

## Convention Notices.

*Mr. Root:*—In the notice sent to GLEANINGS, and published in the March 15th and April 1st issues, the date for the meeting of the Central Tennessee Bee-keepers' Association was given as April 25, when it should have been March. The meeting took place on March 28, and I am enclosing a report of same.

The Central Tennessee Bee-keepers' Association met at the rooms of the Nashville Board of Trade on March 28, with about twenty members present.

Mr. J. M. Davis read a paper entitled "The Advantages of Associations;" Dr. J. L. Butterworth gave a description and demonstration of the Danzenbaker hive, and the following subjects were presented in an interesting manner: "Moving Bee," by Mr. G. N. McKannon; "Transferring," by Mr. Leslie Martin; "Comb Honey," by J. M. Buchanan.

The old officers were unanimously elected for another year—J. M. Davis, Spring Hill, President; W. M. Joseph, Nashville, Vice-president; J. M. Buchanan, Franklin, Secretary.

It was decided that this Association join the National Bee-keepers' Association in a body.

The date for the regular annual meeting was fixed for the second Saturday in March of each year, after which the association adjourned to meet August 8, at 10 A.M. J. M. BUCHANAN, Sec.

Franklin, Tenn.

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### WHAT SHALL BE DONE AT THE NEXT NATIONAL CONVENTION?

We have laid the foundations for the next National convention. We have selected the city (Detroit) in which it is to be held, secured the Wayne Sun Parlor for holding the meeting, and decided on the dates—Oct. 13, 14, 15. We know where and when the convention is to be held, and can begin to lay our plans accordingly.

The next step is the arrangement of a program. Of course, the burden of this work will fall upon the secretary; but he can be greatly assisted, and the convention made vastly better by the help, hints, and suggestions of the members. It is with this end in view that I am going to outline briefly what I have in my own mind; then, as is the case at a convention when a motion is made, we shall have something "to talk to."

I would suggest that the first session be held in the evening, and wholly devoted to a discussion of diseases of bees. I have made application to the authorities at Washington to send a scientist to the meeting, probably Professor White, who can take up the matter from a scientific standpoint, show how these diseases are studied by the use of cultures and illustrate the matter with a stereopticon if possible. Then have some one of the inspectors tell how a practical bee-keeper can detect foul brood. He, too, might use stereopticon pictures in giving his description. Ernest R. Root has promised to furnish the stereopticon, if one is desired. Next, let another inspector give the best methods of treating diseases. Then wind up the evening by a general discussion of the subject.

Another feature that has been suggested to me is that of having at least one *debate* during each of the day sessions. I believe this is something that has never been attempted at any of the meetings of the National. Suppose, for instance, we take up the size of hives. Let us say: "*Resolved*, That a twelve-frame Langstroth hive-body is more desirable, in the production of extracted honey, than an eight-frame hive-body." Get some experienced, competent man to take the affirmative, and some other equally good man, who believes in the eight-frame hive, to take the negative. Let these men be chosen early in the season, secure their consent thus to enter the arena then they can have months to prepare for the contest, and we common folks can sit back and enjoy the "feast of reason and the flow of soul."

As a rule, I think that most of our conventions are held down too closely to the steady grind of hard discussion, session after session, from beginning to end of the meeting. I think at least one evening session might be very profitably and pleasantly devoted to something in a lighter vein. I suppose that a banquet followed by responses to toasts would be in this line, but there are objections. First is the cost, which would not be less than $1.00 a plate. This is not really serious, although there might be some difficulty in determining in advance how many would participate, so that preparations might be made on a sufficient scale. I may be old-fashioned; but the real objection, in my mind is the late hour at which we would be compelled to begin our responses. The regular supper would have to be out of the way before the dining-room could be used for spreading the banquet, which would require some little time. If we finished our feast at half-past nine we should be fortunate indeed, and it is likely that midnight would still find most of us out of our beds. To persons accustomed to late hours this would mean nothing; but most of us bee-keepers are plain country folks, accustomed to early hours; and to be up half the night means extreme dullness—possibly a headache the next day. To attend a convention at some distance from home is more or less of a strain at best, and every precaution ought to be taken to see that the members feel just as well and as bright as they possibly can, otherwise there is but little enjoyment. My idea is that we cut out the banquet part—the feast at nine or ten o'clock at night. Just take our usual supper at the usual time, then meet at the usual time, 7:30, or whatever time we think best, and begin at once the responses to toasts or sentiments, finishing up at nine or ten o'clock, then the next day we shall feel as well as ever, ready for business and discussions, and able to enjoy ourselves. I would suggest that eight or ten of our best speakers be chosen, and appropriate topics be selected for each, early in the season, so that there may be plenty of time for preparation and thought. I would announce the topics in advance, also the list of speakers; but I think I would leave it a secret as to which speaker any given topic would be assigned, until the announcement is made by the toastmaster. I think the speeches ought not to exceed ten or fifteen minutes. The right man can say a lot of good things in fifteen minutes.

Another feature, for which I shall put forth my best efforts, is to secure the greatest possible attendance of bee-keepers' wives. It may be just a little out of the line of bee keeping, but I hope I may be pardoned for saying that, naturally, business takes men out into the world. A man has the incalculable advantage of a great variety of experiences and freshness of view. He is continually coming in contact with new people, new things, and being molded by a vast number of forces which never touch the wife in the quiet home. I believe most women feel this terrible depression of the monotony of their lives, the lack of that stimulus which comes to man from constant change. Let us begin now to plan for the making of a big break in that monotony next October. There is a saying that good works and charity ought to begin at home, so I have secured a promise from Mrs. Hutchinson that she will accompany me to the convention next October. Then I secured a similar promise from my brother's wife. Then I wrote to a few near acquaintances, such as Manager France, President Hilton, Ex-president Aspinwall, and asked them if they would bring their wives, and all replied that they would do so. My friend Muth, of Cincinnati, also writes me that he will bring Mrs. Muth.

I think I would have at least one good essay each session, then the debate, as already mentioned, and finish up with the question-box, which I hope will be contributed to from all over the country by those who are so unfortunate as to be unable to attend.

One other little point: As every thing promises to be on a larger scale than usual, I have already made arrangements for the use of a camera that will take a picture 14 x 17 inches, and I hope to make a group picture that every member will be proud to hang upon the walls of his home. I shall see to it that each person in the group has a number upon the lapel of the coat; and a printed list giving numbers, names, and addresses, will accompany each picture, then all can see who is who.

What I have written gives simply a glimpse of the program in embryo. Nothing is definitely settled. I shall do my utmost to make the convention one of the most enjoyable, the best and most really helpful, that the Association has ever held; and I earnestly request every one who has any interest whatever in the matter to write me a letter full of advice and suggestions. Tell the subjects you would like to have discussed, and the persons you would like to have discuss them. Suggest topics for responses to toasts or sentiments, and the men you would desire to hear respond. Tell me what subjects you would like to hear debated, and the men you would like to hear do the arguing. If I have suggested something that does not please you, let me know, giving reasons why. Take hold right *now*, and do your share in making the coming convention a grand success.

W. Z. HUTCHINSON, *Sec. N. B. K. A.*

# Mr. Bee-keeper,

Was 1907 a POOR YEAR for you?

It was a GOOD YEAR for users of

# DADANTS' FOUNDATION.

One dealer used 14 000 pounds.

Another dealer used 7,250 pounds. Another dealer used 4.500 pounds. Another dealer used 4.500 pounds.
Another dealer used 6.000 pounds. Another dealer used 4,500 pounds. Another dealer used 3,000 pounds.

*Thousands of pounds sold to the bee-keeper direct, or worked up for him out of his beeswax.*

The DEALER likes DADANT'S FOUNDATION because the bee-keeper likes it.

The bee-keeper likes it because his BEES like it.

The BEES like it because it is exactly like their own comb, so PURE and SWEET and CLEAN.

DADANT'S FOUNDATION is the Standard because it is the BEST.

Wax worked into foundation. Send for our Supply Catalog.

**DADANT & SONS, HAMILTON, ILL.**

# SUPPLIES FOR BEE-KEEPERS

**Every thing you want; all made by us in our own factories--at LOWEST PRICES.**

**The American Bee-keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

# W. T. FALCONER MFG. CO.

DEPARTMENT G. :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# ARE THEY WORTH SAVING?

## Mr. Haviland Saves 28 Chicks in One Hatch.

Fully one-third of all the chickens ready to hatch die in the shell. After 30 years' study and practice we have discovered a simple way to save every chick that is fully developed and ready to hatch, whether the egg is pipped or not. This, we believe, is one of the lost arts of the ancient Egyptians. It takes but a minute to save a chick, and no skill required. Note Mr. Haviland's success:

*Dear Sirs:—* Brookville, Md., Feb. 27, 1908

I received my copy of the Philo System at noon, the last hour of the 21st day for my incubator, containing 172 fertile eggs. About 100 were out of the shell and about 30 of the remainder were still alive, some pipped. According to directions with our hot-air machine these were worthless. We immediately proceeded according to "A Trick of the Trade" in your book and hatched them all, even one that showed signs of life after laying in a garbage-pail for some time. We still have 128 chicks three days old; lost but two. Many of the eggs were three or four weeks old when set.

Respectfully, E. W. HAVILAND.

# $200 IN SIX MONTHS FROM 20 HENS

To the average poultryman that would seem impossible, and when we tell you that we have actually done a $500.00 poultry business with 20 hens on a corner in the city garden, 30 feet wide by 40 feet long, we are simply stating facts. It would not be possible to get such returns by any of the systems of poultry-keeping recommended and practiced by the American people, still it is an easy matter when the new PHILO SYSTEM is adopted.

### The Philo System is Unlike all other Ways of Keeping Poultry

and in many respects is just the reverse, accomplishing things in poultry work that have always been considered impossible, and getting unheard-of results that are hard to believe without seeing; however, the facts remain the same and we can prove to you every word of the above statement.

### The New System Covers all Branches of the Work Necessary for Success

from selecting the breeders to marketing the product. It tells how to get eggs that will hatch, how to hatch nearly every egg, and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make every thing necessary to run the business, and at less than half the cost required to handle the poultry business in any other manner. There is nothing complicated about the work, and any man or woman that can handle a saw and hammer can do the work.

### Two-pound Broilers in Eight Weeks

are raised in a space of less than a square foot to the broiler without any loss, and the broilers are of the very best quality, bringing here three cents per pound above the highest market price.

### Our Six Months' Old Pullets are Laying at the Rate of 24 Eggs Each Per Month

in a space of two square feet for each. No green cut bone of any description is fed, and the food used is inexpensive as compared with food others are using.

Our new book, the Philo System of Progressive Poultry Keeping, gives full particulars regarding these wonderful discoveries with simple, easy-to-understand directions that are right to the point, and 15 pages of illustrations showing all branches of the work from start to finish.

### Our New Brooder Saves Two Cents on Each Chicken

No lamp required. No danger of chilling, overheating, or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all lice off the chickens automatically, or kill any that may be on when placed in the brooder. Our book gives full plans and the right to make and use them. One can be easily made in an hour at a cost of 25 to 50 cents.

*Dear Sir:—* River Falls, Wis., March 16, 1908.

I am well pleased with your system in poultry-keeping. We have more than doubled our egg production.

Yours truly, J. C. THAVER.

*Gentlemen:—* Ligonier, Ind., Jan. 24. 1908.

Some time ago I ordered your book, Philo System, and your paper. Want to say I am highly pleased with them. Never in my life have I received so much for so little money. It is a very comprehensive treatise indeed. Your methods are so simple that a child might follow them.

Yours truly, J. BERT MCCONNELL

*Gentlemen:—* R. F. D. 1, Melrose Park, Ill.

Your publication, the Philo System, at hand and, after careful comparison, must say that without doubt or hesitation that more boiled-down, good common sense and natural facts and instruction are condensed in the pages of your book than in all I have tried (to learn) and read the date.

Yours with best wishes, GEO. A. WOLFF.

*Dear Sir:—* Cincinnati, O., March 3. 1908.

Your book came to hand and I must say I am very much pleased with it. It is far the best book I have seen on poultry. The ideas set forth in the book, which are the results of your experimenting, certainly show that you are a little in advance of others in this work.

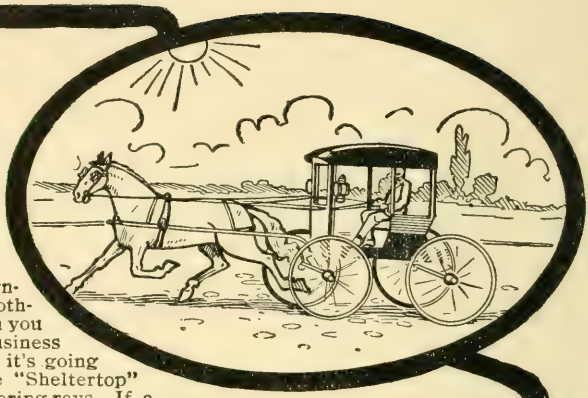
Common Era, Ill., March 19, 1908.

I have built several of the brooders as described by Mr. Philo, and at present time have young chicks, a week old, outdoors, healthy and strong, without being warmed by any artificial heat. Yours respectfully, WILSON BROOKS.

**SPECIAL INTRODUCTION OFFER. We will send the book and right to use all patents and one year's subscription to Poultry Review for $1.00.**

POULTRY REVIEW, 23 Third Street, ELMIRA, NEW YORK.

# SHELTER FROM SUN OR STORM



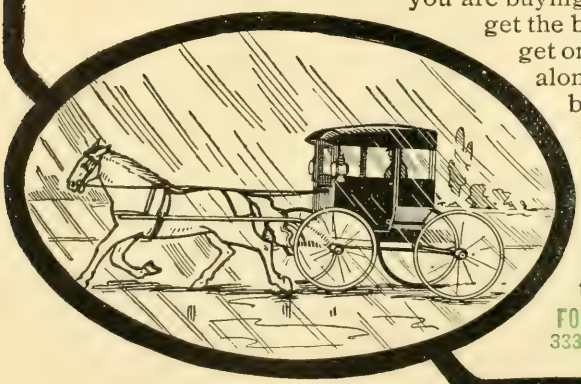
There's a certain satisfaction in owning a **"Sheltertop" Buggy** that no other buggy can supply. Why? When you start out for a drive, or on a long business trip, you know for a certainty that it's going to be pleasant. In hot weather the "Sheltertop" protects you from the sun's sweltering rays. If a storm or a sudden squall comes up, simply close the buggy and ride dry and comfortable. No **ifs** or **ands** or **maybes** about it—you cannot forget to take along the side curtains, or the storm front, because they are a part of the **"Sheltertop"**—out of sight when not in use—handy to get in position when needed.

LIFE SAVERS FOR LAND TRAVELERS
TRADE MARK
REGISTERED

# THE "SHELTERTOP" BUGGY

## THE ONE BUGGY FOR ALL WEATHERS

Three simple one-hand movements—done in three seconds—without leaving seat, stopping the horse or dropping the lines, shuts the **"Sheltertop"** up so tight a drop of water cannot get inside the buggy no matter how hard it rains or the wind blows. Changed instantly from a handsome, fair-weather buggy to a cosy shelter from wind, rain, dust and mud. The only real improvement in buggies since the days of the Deacon's Old One-Horse Shay. Constructed from the best materials money can buy, in a factory especially equipped with the latest machinery, by skilled buggy builders. Handsomely finished, and sold on **30 days' free trial** before you pay us a cent. We ship the buggy and allow you to try it—we want you to use it just as if it were yours —we want you to ride in it in all kinds of weather, and convince yourself that it is the buggy to buy. While you are buying a buggy you might as well get the best. The protection you can get only in the **"Sheltertop" Buggy** alone is worth every dollar the buggy costs. Write to-day for catalog describing the construction of all parts of the vehicle, and be sure to ask for our **free trial plan.** Don't buy a buggy until you get the catalog and this information. Address,



FOUTS & HUNTER CARRIAGE MFG. CO.
333 S. Third St., Terre Haute Indiana.

# Gleanings in Bee Culture

Apiary of splint hives (daubed with mud) on the frontiers of Russia and Asia Minor.

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI May 1, 1908 No. 9

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and in many respects is just the reverse, accomplishing things in poultry work that have always been considered impossible, and getting unheard-of results that are hard to believe without seeing; however, the facts remain the same and we can prove to you every word of the above statement.

**The New System Covers all Branches of the Work Necessary for Success**

from selecting the breeders to marketing the product. It tells how to get eggs that will hatch, how to hatch nearly every egg, and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make every thing necessary to run the business, and at less than half the cost required to handle the poultry business in any other manner. There is nothing complicated about the work, and any man or woman that can handle a saw and hammer can do the work.

**Two-pound Broilers in Eight Weeks**

are raised in a space of less than a square foot to the broiler without any loss, and the broilers are of the very best quality, bringing here three cents per pound above the highest market price.

**Our Six Months' Old Pullets are Laying at the Rate of 24 Eggs Each Per Month**

in a space of two square feet for each. No green cut bone of any description is fed, and the food used is inexpensive as compared with food others are using.

Our new book, the Philo System of Progressive Poultry Keeping, gives full particulars regarding these wonderful discoveries with simple, easy-to-understand directions that are right to the point, and 15 pages of illustrations showing all branches of the work from start to finish.

**Our New Brooder Saves Two Cents on Each Chicken**

No lamp required. No danger of chilling, overheating, or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all lice off the chickens automatically, or kill any that may be on when placed in the brooder. Our book gives full plans and the right to make and use them. One can be easily made in an hour at a cost of 25 to 50 cents.

*Dear Sir:—* River Falls, Wis., March 16, 1908.

I am well pleased with your system in poultry-keeping. We have more than doubled our egg production.

Yours truly, J. C. THAVER.

*Gentlemen:—* Ligonier, Ind., Jan. 24, 1908.

Some time ago I ordered your book, Philo System, and your paper. Want to say I am highly pleased with them. Never in my life have I received so much for so little money. It is a very comprehensive treatise indeed. Your methods are so simple that a child might follow them.

Yours truly, J. BERT MCCONNELL.

*Gentlemen:—* R. F. D. 1, Melrose Park, Ill.

Your publication, the Philo System, at hand, and, after careful comparison, must say that without doubt or hesitation that more boiled-down, good common sense and natural facts and instruction are condensed in the pages of your book than in all I have tried (to learn) and read the date.

Yours with best wishes, GEO. A. WOLFF.

*Dear Sir:—* Cincinnati, O., March 3, 1908.

Your book came to hand and I must say I am very much pleased with it. It is far the best book I have seen on poultry. The ideas set forth in the book, which are the results of your experimenting, certainly show that you are a little in advance of others in this work.

Common Era, Ill., March 19, 1908.

I have built several of the brooders as described by Mr. Philo, and at present time have young chicks, a week old, outdoors, healthy and strong, without being warmed by any artificial heat. Yours respectfully, WILSON BROOKS.

**SPECIAL INTRODUCTION OFFER. We will send the book and right to use all patents and one year's subscription to Poultry Review for $1.00.**

**POULTRY REVIEW, 23 Third Street, ELMIRA, NEW YORK.**

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**Headquarters for**

# BEE SUPPLIES

**Distributor of Root's Goods Exclusively, at Root's Factory Prices**

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## Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX.** I pay **Cash on Delivery;** or if you are in **need of honey,** write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted — in cans, barrel-lots, or car-lots — of **extracted** or **comb honey.** I guarantee its purity.

## WANTED=Sweet Clover.

If you have **Sweet Clover,** state if yellow or white, hulled or unhulled, also quantity and lowest price.

# C. H. W. WEBER

**Office and Salesroom, 2146-2148 Central Ave.**
**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, OHIO**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct, to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent) cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A NO. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

NO. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

NO. 2.—Three-fourths of the total surface must be filled and sealed.

NO. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13 1-2 ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13 1-2 ounces.

Cases of half separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade, wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 lbs. net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

CINCINNATI.—The conditions of the honey market are not satisfactory, as there is no consumptive demand for either comb or extracted honey. Lower prices are no inducement. We must await the revival of business in general, which, no doubt, will be as soon as the weather settles. Quote our fancy water-white honey for table use at from 9 to 10, according to the quantity purchased. Amber extracted honey in barrels brings 5½ to 7, the price depending on the quality and quantity. There is an abundance of beeswax, for which we are paying 30 cts. in cash and 32 in trade for choice yellow, delivered here, free from dirt.

THE FRED W. MUTH CO.,
April 14. Cincinnati, O.

KANSAS CITY.—The crop of 1907 of both comb and extracted honey is pretty well sold out. What little comb is left shows signs of granulation. The demand is fair. We quote: No. 1 white comb, 24 sections, per case, $3.00; No. 2 white and amber, ditto, $2.75; white extracted, per lb., 7½. Beeswax, 25 to 27.

C. C. CLEMONS & CO.,
April 20. Kansas City, Mo.

BOSTON.—White comb honey, fancy, 17; No. 1 white comb honey, 16; white extracted honey, 10; light amber, 9; amber, 8.

BLAKE-LEE CO.,
April 10. 134 State St., Boston, Mass.

ST. LOUIS.—The honey market has not undergone any change since ours of March 20. There is no demand for honey, and the quotations are nominal as follows: Fancy white comb honey, 15 to 16; No. 1, white and amber, 13 to 14; broken and defective, less; extracted white, in cans, nominal at 8½ to 9; amber, 7 to 8; in barrels, 6½ to 7. Granulated extracted honey sells at ½ to 1 ct. per lb. less. Beeswax is firm at 28½ for prime; impure and inferior, less.

R. HARTMANN PRODUCE CO.,
April 11. St. Louis, Mo.

BUFFALO.—There is a fair demand for white-clover comb honey. Other grades are very much neglected. It is almost impossible to sell No. 2 white or mixed at even low prices. No. 1 fancy white-clover comb honey, 15 to 16; No. 2 ditto, 11 to 12; No. 1 dark, 10 to 11; No. 2 dark, 9 to 10. Beeswax, 28 to 30. Tumbler honey, 90 cts. to $1.00 per dozen.

W. C. TOWNSEND,
April 11. Buffalo, N. Y.

ST. PAUL.—Receipts are very light; demand moderate and prices steady. The prices below represent those obtained for shipment in small lots. Fancy white-clover comb, new, per lb., 18; fancy California, 24 combs per case, $4 00; strained, in 60-lb. cans, per lb., 10.

W. H. PATTON, Sec. Board of Trade,
April 22. St. Paul, Minn.

SCHENECTADY.—There is not enough doing in honey at present to be worth quoting. There is but little stock on hand, with an occasional order. The attention of the trade is now in the direction of maple syrup and sugar, of which there is a very good crop reported.

CHAS. MACCULLOCH,
April 20. Schenectady, N. Y.

INDIANAPOLIS.—Jobbers are fairly well stocked, but very little honey is being offered by producers. Best grade of extracted honey is in good demand, but comb honey is finding slow sale. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 15 to 17; extracted white clover, 8 to 9; amber, in barrels, 6 to 6½. Beeswax, 28 cts. cash or 30 in exchange for merchandise.

W. S. POUDER,
April 17. Indianapolis, Ind.

ZANESVILLE.—The demand for honey continues quite light, and one or two of the smaller commission men are cutting prices. From No. 1 to fancy comb honey brings, when sold to the wholesale grocery trade, about 18 cts. Extracted is moving very slowly. The supply of beeswax exceeds the demand. I offer 30 cts. for best grade in exchange for bee-supplies.

EDMUND W. PEIRCE,
April 18. 136 W. Main St., Zanesville, O.

SAN FRANCISCO.—Prices on honey still rule as before, but every thing is closely held. There is a fair supply of comb, but extracted grades are almost cleaned up. It is said that the dry weather will cause a shortage, if not an entire failure of the crop, in some sections. We quote: Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, extracted, 7 to 7½; dark amber and candied, 5¼ to 5¾. *Pacific Rural Press*, April 18.

LIVERPOOL.—The honey market is steady and quiet, but stocks are not large. Fine quality meets with fair demand, but low grades are almost entirely neglected. We quote: Chilian, 4 to 6½; Peruvian, 3½ to 5½; California, 7½ to 9; Jamaican, 4 to 5½; Haiti, 6½ to 6½. Beeswax is steady—African, 27 to 30; American, 30 to 33; West Indian, 27 to 32; Chilian, 30 to 36; Jamaica, 34 to 35.

TAYLOR & CO.,
April 11. 7 Tithebarn St., Liverpool.

CINCINNATI.—The market on comb honey is very quiet, there is hardly any demand. The price for extracted amber in barrels is 6c. We have no white clover to offer. California white sage is selling at 9 and 9½c.

C. H. W. WEBER,
April 23. Cincinnati, O.

DENVER.—The market on comb honey is slow, and prices are declining. We quote to our trade, No. 1 white, per case of 24 sections, $3.00; No. 1 light amber, $2.85; No. 2, $2 70; extracted, white, 8 to 9; light amber, strained, 6¾ to 7½. We pay 25 cts. for clean yellow beeswax delivered here.

THE COLORADO HONEY-PRODUCERS' ASSO'N,
April 22. F. RAUCHFUSS, Mgr.

# We're Modest Bee-supply People, but = We've Just GOT to Tell You about this Letter

It came from Mr. John M. Davis (yes, the Queen Bee Davis, known everywhere).

It was written to Mr. J. M. Buchanan, of the Tennessee Bee-keepers' Association, and—

We didn't know a thing about it until Mr. Buchanan wrote us: "I quote from a letter received from Mr. John M. Davis to-day (March 7, 1908):"

**DAVIS DECLARES:**

"I think the supplies you bought from Mr. Muth you will find about the best you have ever seen, judging from those I got from him some time ago. I have used supplies from nearly every manufacturer in the United States, and the makers of Muth supplies do the most perfect work of any I have seen."

Mr. Buchanan wrote us on March 2, 1908:

**BUCHANAN SAYS:**

"I must say this is the best lot of supplies it has been my lot to handle: they **could not be surpassed.**"

With two **authorities** saying such things about **Muth's** Beeware, can **you** hesitate? There is never any gamble about them—they are **always** the best of their kind—everything a bee-keeper needs, and at factory prices here in Cincinnati. We charge no drayage to depot.

Better send for catalog—free.

# The Fred W. Muth Co.

**THE BUSY BEE MEN**

**51 Walnut St. Cincinnati, O.**

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

# Gleanings in Bee Culture

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Published by THE A. I. ROOT CO., Medina, Ohio

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# New Lands in The Northwest.

## Montana, North Dakota, South Dakota.

Many who live in the Eastern States imagine the West has been fairly well settled by thrifty farmers—so much so that there is very little opportunity for a new comer to get in and do well. No greater fallacy could be entertained. The Northwest is just opening up, and infant empires are being nursed which are destined to cut a great path in the history of the world. This is no exaggeration, for Montana is nearly three times as large as England, and even richer in natural resources, besides being possessed of a splendid climate which enables the white man to work to his extreme capacity. There is an idea that the winters are bad, when it is actually true that they are more equable and pleasant than the winters of Ohio, Indiana, and Illinois. It is a fact that the thermometer goes down low in Eastern Montana and Western Dakota, but that is not for long; besides, the air is very dry, light, and invigorating. There are long spells of very pleasant weather in between the cold snaps. This makes the problem of wintering bees actually easier than it is in the Eastern and Central States. In summer there is no sweltering heat as in the States near the great lakes or the Gulf of Mexico. The summer days are long and pleasant, with cool nights. If the farmer does a long days' work he always has the satisfaction of knowing the nights will be cool enough to allow of sound sleep under a cover of some kind. The crops of the temperate zone reach the highest state of perfection. Oats, barley, buckwheat, and clover are of the best quality, and, if well cultivated, yield much higher than in Illinois or Ohio. This makes poultry culture a success wherever tried with ability and persistence. It is practically the same with the bee industry. Clover, alfalfa, and many lovely wild flowers, render it a success. Of course, some localities are letter than others, and there are some places where it would be a failure; but this much is sure—bee-keeping in Montana and the western part of South Dakota and North Dokota, Idaho, and Eastern Washington and Oregon, is merely in its infancy. These States are extremely rich in mineral resources, so that mining is a prominent industry. These miners are well paid, and, as a result, there is a first-class local market for all honey produced. It is just the same with eggs, poultry, and butter, of course, or any other agricultural product of a similiar nature. This being the case, there is seldom any necessity for the Montana farmer to ship long distances to find

a market for produce, unless it is wool, which is easily transported.

There is also an impression that the West is wild and woolly, and that children and delicately nurtured women have no place there. Just the reverse is true. In most of the States of the West, educational facilities are superior to those of the East, and good schools abound. By paying good salaries they draw as with a magnet the best teachers from the States further east. This process has been going on for years, and still continues. Churches abound. Every little town has its public library, and the latest ideas of the scientific and literary world are discussed as soon as presented. Under such conditions everybody is an optimist, believing all things are possible. The light, dry, invigorating air and genial sunshine have much to do with this. Consumptively inclined people gain a new lease of life, and the man with the "blues" is unknown.

Nobody wants for work; and the more people flock, the more work there is for all, and this condition of affairs will continue for many years—very probably a century or so.

Scattered over Western Dakota and Montana are fine tracts of land, either not settled at all, or sparsely so. Though rich and fertile, some of this land is still open to homestead entry. In many other localities of the Northwest the Chicago, Milwaukee & St. Paul Railway is building a new line which taps a new country all undeveloped.

In Fergus Co., Montana, for example, the area of land available for farming is over 3,000,000 acres, and at least 2,000,000 is fit for cultivated crops. This is rich land; and yet the whole country, having an area of 6762 square miles, has only a handful of people, and those who are there are largely interested in mining rather than agriculture, for it excels in the production of gold. It is safe to say 1,000,000 acres can be carved into fine farms if homesteaders will only come along and claim them. In the western and northwestern sections of Fergus Co. the land lies in the famous Judith Basin, which contains 2,000,000 acres or more of the finest kind of agricultural land. It was only in the summer of 1907 that one could reach this region by railroad, hence it is no wonder it has not been settled. It is the kind of land on which a good farmer may produce 40 bushels of wheat and 100 bushels of fat oats. Will it answer for bees? Yes; very soon the farmers will plant all kinds of clover, and the wild pastures will become white-clover meadows. Wild flowers are everywhere, and, what is very important, there are excellent markets not far away. Butte City, the greatest mining-camp in the world, with 80,000 inhabitants, is not so far away, and pays higher prices for produce than Chicago.

The capital of Fergus Co. is Lewistown, with 3000 inhabitants. Here is located the United States Land Office. It has all the leading churches, and also a fine public hospital. It has all the 'improvements" of a modern city, and quite, possibly in a quarter of a century may contain 100,000 inhabitants, as it has a splendid country all around.

Extensive coal-fields lie near by, and mineral deposits of all kinds are not far away. It will be very strange indeed if these American men do not create a great city there; and it will be a grand city with beautiful homes. There is every thing there to make it so. Nothing is now lacking but the right kind of people.

These States draw toward them the pick of the brain and brawn of the American nation. Somehow the other kind does not find its way to the Northwest, especially Montana. The sort of people now there are home-builders of the intensest sort. There is plenty of hustle, but women and children are splendidly protected, both by law and chivalry. Fergus Co. has been instanced as an example; but there are sections just as good—some of them not opened up yet to civilization, because railways are too remote.

The reason why we instance the Chicago, Milwaukee & St. Paul R. R. is because the line is absolutely new; in fact, several hundred miles of track will be constructed or finished this coming summer, and ere long it will reach the Pacific Coast. This gives the homeseeker a grand opportunity to get in on the ground floor. There is no need to go to Canada or Mexico when fine lands on a well-known railroad are so easily secured. If you are an American citizen you may lay claim to 160 acres of excellent land, or you may journey further westward and invest in irrigated fruit lands which will, in a few years, be worth $1000 an acre if planted in apples, and the same properly cultivated. The railroad managers are anxious to get new people to settle near their property, for unless towns and cities spring up, their investment will prove a failure. They do every thing to facilitate the movement of settlers, and go to a great deal of trouble to furnish the desired information. Nothing would do more harm than for them to promulgate erroneous ideas of the country, and usually this work is delegated to men whose only interest in the work is the salary they draw. This prevents exaggeration and fanciful conceptions. While land is good and the conditions good, this is essentially a country for the hustler. It is no place for the man looking for something easy.

As a land of beauty it is unexcelled by any in the world. Not far away is the famous Yellowstone Park, where people flock from all parts of the world to view the scenery. And there is plenty of more scenery of the same kind all through the Northwest. It is the paradise of the sportsman and angler, and the elysium of the naturalist and geologist.

There are great forests for timber, and waterfalls for power. Taken all together it is a happy land.

# Gleanings in Bee Culture

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Have you written for the little book on mending the old roof, published by The Anderson Mfg. Co., Elyria, Ohio? It's a good money-saving little book to read. Write for it. Just say; "Send me that free book on fixing roofs advertised in GLEANINGS IN BEE CULTURE."

### TEMPERANCE POST CARDS.

Mr. A. T. Cook, of Hyde Park, N. Y., the well-known seedsman, is a prominent temperance worker as well. To help the good cause he has published a series of very nice post cards which cover temperance problems very well. Correspond with him if you are interested. See his ad't, page 597.

### HARDY PERENNIAL FLOWERS.

It is pleasing to know that the hardy perennial flowers are becoming popular. They are so readily raised from seeds, so easily cared for, and withal so beautiful and lasting, that they are sometimes called "The Poor Man's Fowers," a name not inappropriate, as they do not have to be coddled and fussed over every year to have them grow and bloom.

Pansies and Daisies, which begin to bloom with the Snowdrop in early spring, soon usher in a wealth of snowy Arabis and Golden Alyssum and pink Carpet Saponaria. Then comes the Columbine in great variety, Campanula, or Bell Flowers, stately rows of Foxglove, and glowing clumps of Clove Pink, Sweet William, and Carnations, Forgetmenot, Feverfew, and a host of other beautiful and fragrant perennial flowers, making a rich array of color in the garden, and perfuming the air with delicious odors.

May and June are the months in which to sow these seeds to get the most satisfactory results, and if you get them and plant them at this season, you will never regret it. The plants are hardy, lasting, and free-blooming, and will afford a glorious return for the modicum of cost and labor of raising them. They will live and bloom well for years, and are a never-failing source of real garden enjoyment. Do not fail to start a bed of hardy perennials this season. See page 591.


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# Lansing, Mich.

Yes, we've moved to the best point in Michigan to reach bee-keepers. We have four great railroad systems and three express companies reaching out in every direction. At a low-cost freight expense we can supply you with

## "ROOT QUALITY"

bee-supplies at factory prices. Hives, sections, and foundation ready for immediate shipment in any quantities.

## SPECIAL OFFER

GLEANINGS one year, new or renewal, and a good bee-veil with a silk-tulle front for $1.15. No matter where you live, take advantage of this GLEANINGS offer. SEND FOR CATALOG.

# M. H. Hunt & Son

**Lansing .. .. .. Michigan**

Opposite P. M. depot.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department,

Washington Blvd. & Morgan St.

CHICAGO, ILL.

## HONEY WANTED.

Wanted to contract for 20,000 lbs. comb honey in shallow extracting-frames 5¾ inches deep.

Requirements: Honey to be produced on full sheets of extra-thin super foundation, in shallow extracting-frames, not wired.

Grade: Same as first three grades in GLEANINGS grading-rules—Fancy, A No. 1, and No. 1 (all included as one grade).

Quality: Honey must be produced from clover, basswood, or raspberry.

Combs must be even and of uniform thickness—not over one inch.

Will furnish frames, shipping-cases, and carriers for re-shipping the honey.

Bee-keepers in Michigan or Ohio interested in this proposition, write, stating approximate number of frames you can furnish, and price wanted for the honey per pound, *net weight*, F. O. B. Medina.

Address HONEY BUYER,
c-o GLEANINGS IN BEE CULTURE,
Medina, Ohio.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

**HILDRETH & SEGELKEN,**

265-267 Greenwich St. 82-86 Murray St.

NEW YORK.

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### LEAVING THE BUNCH BEHIND.

Along with marbles and baseball, renewed interest in wheeling manifests itself as a sure indication of spring and the joys of outdoor exercise.

Nothing ever invented serves so admirably the triple purposes of utility, exercise, and pleasure as does the bicycle. The best grade of wheels are now selling for less than one-third the prices of ten years ago, and at that the rider gets a better mount than was possible then. The coaster brake and two-speed-gear features alone mark a big step forward in bicycle construction since the boom days.

Inquiry among jobbers and dealers discloses a demand for bicycles, not only from the small boy (who has always ridden) but also from his older brother and his father also. The lady cyclist is also venturing timidly forth from the mysterious retreat wherein she has hibernated for a decade, and she's not in bloomers either—thank the Lord for that.

"Leaving the Bunch Behind" is the attractive picture adorning the gold-embossed 1908 catalog cover of the "oldest exclusive bicycle house in America," a copy of which has just reached us. The catalog is a work of art, and is brimful of valuable and interesting matter for riders or those thinking of buying wheels. It is well worth getting, and may be had by writing the Mead Cycle Co., Department SX—113, Chicago, Ill. They also send a wheel for ten days' free trial, and will engage live agents.

### A NEW SPECIES OF CHICK-BROODER.

Almost anybody can use any of the standard makes of egg-incubators, and get fairly satisfactory results. It is when we come to take care of the young chicks that failure in many places takes place. The little things die from want of heat or too much of it, or they die from lack of fresh air; but, more than all else, they die from from huddling too close together. In a word, they are "huddled" to death. A Mr. Root, of Cleveland, O., saw the need of a radical departure from the present-day brooder, and after considerable study of the problem he seems to have solved it. In his brooder are small hot-water pipes arranged in rows close enough together so that the chicks just manage to get their heads and necks comfortably through between them. This places a hot-water pipe on each side of the chick. The head of the chick is out in the fresh air very much the same as when underneath an old hen and the little heads pop out between the feathers of her wings. This gives conditions more in accordance with nature. The pipes are all hot alike, hence there is no huddling, and every wee thing has an equal chance.

Though on the market only a short time, the new brooder has met with flattering success, large orders having been obtained from Buenos Aires, Argentina, and even from places beyond the sea. The brooders are constructed by The A. I. Root Co., of Medina, Ohio, which is an excellent guarantee that they will be well made, because their bee-supplies are famous all over the world. Mr. Root, the inventor of the brooder, is no relative of the members of The A. I. Root Co. He is the organizer of The Root Incubator Co., Cleveland, O., where communications may be addressed.

### SPLINTS VS. WIRES.

Perhaps you may have overlooked the article on splints in the April 1st issue of GLEANINGS by Dr. C. C. Miller who is the inventor. In that coummunication he reviews the whole question and a careful reading of it will be found useful by all bee-keepers who intend to use full sheets of brood foundation.

# Bees For Sale.

My bees have wintered perfectly—clean, dry, and free from dysentery—and I have decided to sell a few colonies. The bees are of the Superior stock, the hives nearly new, in good condition, and well painted. The combs are all-worker—mostly built on wired foundation. Everything is strictly first class.

For a colony in an eight-frame Langstroth hive the price is $6.00; in a ten-frame Langstroth, or in a new Heddon hive (two sections) the price is $7.00; and to each purchaser of one or more colonies the Review will be sent free for 1908.

I am now ready to accept and book orders accompanied by the cash; and when I have received as many orders as I care to fill, no more will be accepted. The bees will be shipped by express, about the close of fruit-bloom, when the newly gathered honey will furnish the necessary water, and safe arrival will be guaranteed in every respect.

If you wish to stock your apiary with a strain of bees that has no superior, here is a chance to get a breeding-queen, such as the most of dealers ask from $3.00 to $5 00 for, already introduced, in a full colony, whereby she can be shipped without injury, early in the season, all at a moderate price.

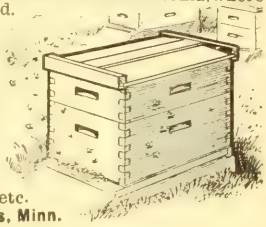
**W. Z. HUTCHINSON, Flint, Mich.**

---

# BEE-KEEPING will be a profitable industry this season.

Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

## Get Ready Now for More Honey



**Let us send you our catalog** We are manufacturers and sell only our own make of bee-supplies. Minneapolis is the largest lumber-distributing point; the Mississippi river furnishes us power, and our organization and labor conditions are the best for economical production. **Send us an estimate of your requirements and let us give you prices** We have a large stock of standard bee-supplies on hand.

Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Comb Foundation, Smokers, Extractors, Shipping-cases, etc.

**MINNESOTA BEE SUPPLY COMPANY, 23 Nicollet Island, Minneapolis, Minn.**

---

# LISTEN!

## DO YOU HEAR THOSE BEES WORKING?

Soon they will want room or will swarm.

Have you gotten your hives and supplies? If not, send your order at once. If you have The A. I. Root Co.'s catalog you can order from it. We sell their goods at their factory prices. We can fill your orders promptly now. Write for further information and our 40-page catalog.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTG. CO., MISSOURI.**

---

# This Coupon worth 25 Cents!

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

*New Subscribers Only.*

*Name*.....

*Postoffice*.....

*State*.....

**AMERICAN - BEE - JOURNAL**

A 32-page illustrated 50-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keeper. . . . Best writers.

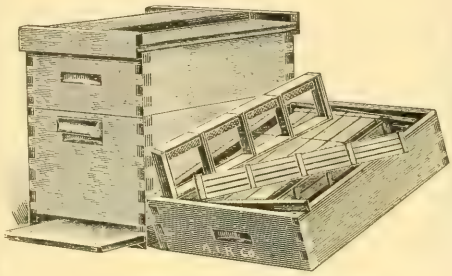
**It will increase your Honey-money!**

If you will send us your name and address with 25 cents (stamps or coin) together with this coupon, we will send you a trial trip of our journal for 12 months. Order now, and let us begin with this month's fine number. Address

**American Bee Journal, 118 W. Jackson, Chicago, Illinois**

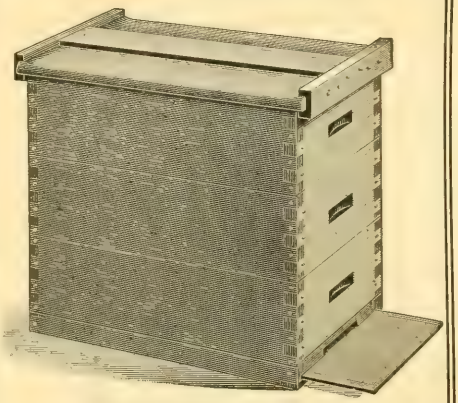
Danzenbaker Hive.

## The Best Comb-honey Hive



1½-story Dov'd Hive for Comb Honey.

## The Best All-around Hive



Divisible Brood Chamber Hive.

## The Best Hive for Experts

## THE A. I. ROOT COMPANY

SYRACUSE, NEW YORK

European Bee-keepers!

# Save Time and Expense

by sending direct all your orders and correspondence to our exclusive agent for the European continent and its colonies. . .

EMILE BONDONNEAU
142 FAUBOURG - ST. DENIS, PARIS

Prompt Service and Satisfaction Guaranteed. . . .

The A. I. Root Company

TO THE

# BEE-KEEPERS OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

## E. GRAINGER & COMPANY,

Deer Park,

## Toronto, Ontario, Canada.

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

# We are Still Here, But Not Here Still.

BEE-MEN HAVE realized all over the country that they could save money by buying bee-supplies in TOLEDO.

THIS ANSWERS the question as to why OUR sales increase from 30 to 50 per cent over each previous year.

## A LARGER SUPPLY OF ROOT'S GOODS

on hand than ever before, and more arriving every day to take care of our increasing trade.

LET US LIST YOU as one of the thousands who is saving money each year by buying goods of us.

OUR LARGE CATALOG of poultry and bee supplies is free. Just send a postal for it.

THE SECOND LARGEST railroad center in the United States. Why not save money by buying in TOLEDO?

Best prices, cash or in trade, for your honey and wax.

**Griggs Bros. & Nichols Co.**
523 Monroe St. .. Toledo, Ohio.

# WESTERN Bee-keepers

.. will ..

## SAVE TIME AND FREIGHT

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker Hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

**JOS. NYSEWANDER**
565-7.W.7th St., Des Moines, Ia.

# WE HANDLE the BEST GOODS OBTAINABLE

**Lewis** BEE-HIVES and SECTIONS. **Root's** SMOKERS and EXTRACTORS. **Dadant's** COMB FOUNDATION.

If you live west of the Missouri river, send for our FREE 48-page illustrated catalog to-day and save money. We are a co-operative association of bee-keepers, and can supply comb and extracted honey at all times.

**The Colorado Honey-Producers' Association**
1440-1444 MARKET STREET :: :: :: :: DENVER, COLORADO

# HIGHLAND FARM QUEENS

are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey. Highland Farm queens will produce them. We are now booking orders which will be filled in regular rotation, beginning May 15. You should get in line by placing your orders early, and avoid the rush of the busy season. Single queens, $1.00; 6, $5.00; 12, $9.00. Safe delivery and satisfaction guaranteed.

For further information send your address on a postal card to

**HIGHLAND BEE AND POULTRY FARM,** J. E. HAND, Proprietor, **BIRMINGHAM, ERIE CO., O.**

# What's the Matter With Hilton?

## WHY!

He has got his new goods fresh from The A. I. Root factory, and his 1908 catalog, and wants you to send for one free—40 pages illustrating and describing Root's goods at Root's prices. Send him a list of what goods you want, and let him tell you how much they will cost you.

Cash or supplies for beeswax at all times.

**GEORGE E. HILTON**

**FREMONT, :: :: MICHIGAN**

Furnishing Bees and Supplies to Bee-keepers has been our business for 15 years.

## NEW YORK CITY

where our supply business is located, means quick shipments and low freight rates to our customers. Our prices are f. o. b. cars here,

Colony of Italian bees in an 8-frame D. T. hive, complete ..... $9.00
Italian queens ..... 1.00

*Catalog free.*

**I. J. STRINGHAM,**

**Apiaries, Glen Cove, L.I. 105 Park Pl., N. Y. City.**

# Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage.

**RAWLINGS IMPLEMENT COMPANY**

**9 and 11 W. Pratt St. Baltimore, Md.**

## THE DANZENBAKER SMOKER

PAT. OCT. 3,'06, JUNE 4,'07

**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

**IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR**

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case**, and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed**, giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot**: no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt**, expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

**1884 1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M. Jenkins**

**Wetumpka, : : Alabama**

# Dittmer's

## COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

# Hammer Free!

With Every Order of Supplies of $5.00 or Over.

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**

**Dubois, .. Pennsylvania**

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**

H. G. ACKLIN, MANAGER

**1024 Mississippi Street, St. Paul, Minn.**

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On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

**Root's Bee-supplies**

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**

DEPT. B.

1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**

**Dallas, : : . Texas**

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# A Thrilling Rescue.

*By the Bee Crank.*

There was a young woman from Lynn
Who was so exceedingly thin
That, when she essayed
To drink lemonade,
She slipped through the straw and fell in.

Now, a bee that was loafing around
Spied her rose-covered hat on the ground,
And said, "Isn't it funny,
What's become of the Honey?"
Then, hearing her squeals,
Dragged her out by the heels—
If he hadn't, she'd surely have drowned.

They tell a good many bee stories and comb-honey yarns that test the credulity almost as much as this one, which, I admit on the face of it, seems improbable. I make the admission in order to draw the distinction clearly between fact and fiction. The following statements are FACTS. I have the finest, cleanest, freshest, and largest stock of Root's goods that I have ever carried. They are ready to go on the same day your order is received. I sell them at Root's prices, and save you time and freight charges. Danz. hives, fresh new foundation, section boxes, bee-smokers, veils, and a host of other needfuls. My catalog tells all about them. Send for it; it's free. I pay 28 cts. cash for beeswax or 30 cts. in trade for goods. Send large shipments by freight and small ones by express.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Company, Medina, Ohio

E. R. ROOT, EDITOR — A. L. BOYDEN, ADVERTISING MGR.
H. H. ROOT, ASST. ED. — J. T. CALVERT, BUSINESS MGR.
A. I. ROOT, EDITOR OF HOME DEPARTMENT

Vol. XXXVI. MAY 1, 1908. No. 9


## STRAY STRAWS
by Dr. C. C. MILLER

I SUPPOSED that feeding 20 pounds of sugar (made into syrup) was equivalent to adding 28 pounds of honey to the winter stores. According to Allan Latham, page 509, it is only 23 or 24. I accept the amendment.

G. M. DOOLITTLE, in that nucleus, where the queen with all drone comb laid worker eggs, p. 492, I wish you would tell us whether the workers first contracted the mouths of the cells. I have seen worker brood in drone-cells a number of times, but never yet unless there was a contraction of the cell-mouths.

"PROHIBITION in the South is having a remarkable effect upon the fruit consumption in that section, fruit growing in demand at almost the same ratio that liquor has vanished. An Alabama dealer in fruits claims that his books show double as much business in January and February, 1908, as in the same months in 1907."—*N. Y. Com. Bulletin.* Why will not the same rule hold with honey?

MY LENGTHY Scotch friend on p. 499, you have given us the best lecture I ever read on transferring; but why do you hurt my feeling by tying strings around your ankles? Bicycle trousers-guards, costing 3 cents a pair, are ever so much handier, and are they not just as effective? [You are right; but as our lengthy Scotch friend is progressive we know he will accept your correction. He probably did not have any bicycle pants-guards, and simply used a string in lieu of something better.—ED.]

I HAVE traveled about considerably, visiting hundreds of bee-keepers in their homes, and one of the things that I have noticed is worth *pages* of theory, and it is this: *The most prosperous bee-keepers are those who keep the most bees.—Review*, 93. Yes, Bro. Hutchinson; but were they prosperous because they kept the most bees, or did they keep the most bees because they were prosperous? A man prosperous with a few bees is likely to become more prosperous with more bees; but if he is not prosperous with a few bees will he be more prosperous with more bees?

S. D. CHAPMAN seems not in accord with the theory that bees from choice select too old larvæ for queen-rearing, and that the first batch of cells should be destroyed and the second used. For 25 years he has requeened by taking away queens, allowing the bees to select their own larvæ, and there has been no deterioration. He also says, *Review*, 119: "Nature has so ordered that the best queens a colony can produce are those hatched from the *first cells started;* seemingly, they are better fed, more vigorous, and give better results." Sorry Bro. Hutchinson made no comment upon this.

J. E. HAND doesn't believe in the theory that brood-rearing will go on better with abundance of stores in sight than where the bees have only enough to use from day to day. He says, *Am. Bee-keeper*, 91: "I have never been able to see that the amount of stores in a hive above the present needs of the colony had any more bearing upon the amount of brood reared than the amount of wheat in my bins has upon the number of eggs my hens lay." Can we have any definite proof either way? [Perhaps not definite proof; but, in the language of the court, there is a great deal of "circumstantial evidence" that would seem to favor the contrary view.—ED.]

SAMUEL SIMMINS says: "Queen-cells should not be removed if not near hatching—until after a queen has been safely inserted. By removing them in the first instance the bees are again thrown back to the original uncertain and restless condition; but all the time they possess queen-cells, especially if capped ones, they are in the natural condition of expecting another, and will almost invariably

accept a stranger, provided she be not old and worn." Is not this directly contrary to the general belief and practice? Which is right? [We do not know, but we suspect he may be right. It looks reasonable —ED.]

GOOD BRAINS must have been used in getting up those Colorado rules for grading, p. 400. With such rules, selling by the section is all right, wholesale and retail. No. 1 honey averages 14 oz. to the section, and the consumer can never get any thing less than 13½. One can omit separators, but he must pay for that privilege a tax of 1 lb. of honey on every 12 sections sold. [This will do more to discourage and stop the practice of trying to get along without separators in Colorado than any other one thing. The progressive bee-keepers of that State are to be commended for the action taken.—ED.]

HOW LONG does it take to test a queen as to the storing qualities of her worker progeny? You can hardly introduce her (to say nothing of rearing her) early enough in the spring so that results shall be exactly the same as if she had been in the colony all winter. Say she begins her work in April; you can't really tell what she is till the close of the harvest the following year. Introduce her in the fall, or rear her in the hive *a la* Chapman, and you can say she is really tested not till she is a year old; and isn't that about as young as you can ever have a queen properly tested? [Yes, the only way to test for honey-gathering is to wait till the queen is a year old unless one lives where the honey-flow is late. The very best breeding queens, or those tested for honey, are always a year old at least. We believe that the rule is universal among the best breeders.—ED ]

THE ADVANTAGE in change of name from "glucose" to "corn syrup" is only temporary. The name "glucose" is objectionable because the people have learned what glucose is. How long will it take them (more on the lookout than ever before) to learn what "corn syrup" really is, and then what good will the change of name do the glucose crowd? [You have not quite the correct point of view, and apparently we have been at fault in not making clear this matter of the glucose-versus-corn-syrup decision. Of course, it is unfortunate that the change of name should have been allowed. That in itself would be a tremendous advantage to the glucose crowd; but when a mixture of glucose and *cane* syrup was allowed to be called by a new name—a name *not* descriptive of the contents, and misleading as to its source—a powerful precedent was given for the misbranding of other foods. The intent of the national pure-food law is very plainly for labeling *every* thing just what it is. We bee-keepers, for example, are not allowed to mix tupelo and clover honey and call it "clover," although we may say it is pure honey. Neither are we allowed to make a mixture of sugar syrup and honey and call it honey; but, strangely enough, the glucose people may mix glucose with cane syrup and call it "corn syrup."—ED.]

IT will be noted that this issue is extra large, being the promised number that contains special instructions on early summer management for the production of honey.

### PAPER-WINTER-CASE COLONIES NOT QUITE UP TO THOSE IN DOUBLE-WALLED HIVES.

THE former do not quite seem to have held their own with the double-wall chaff hives. Indeed, it is hardly to be expected that they would. Our paper cases have several folds of newspaper under them, but this would make a packing material only from ½ to 1 inch thick over the ⅞ thickness of wood, or a total thickness of 1⅜ to 1⅞. In double-wall chaff hives there is a clear packing-space of 2 inches filled with chaff between walls ⅝ inch thick, or a total of 2⅝ inches. When this is contrasted with 1⅞ it will be readily seen that the difference, so far as figures go, is very much in favor of the double-wall hive; but it must be said, on the other hand, that paper-packed colonies wintered almost as well, and far better than they would have wintered without any covering if the experience of former years is any criterion. It would appear that the remedy, to make one method winter as well as the other, would be to put enough packing under the paper caps so that the actual thickness of protection will be equal to that of double-wall hives.

### SERIOUS CONSEQUENCES AS A RESULT OF SPRAYING FRUIT-TREES WHILE IN BLOOM.

MR. N. E. FRANCE, General Manager of the National Bee-keepers' Association, in his Information Bureau No. 8 says:

> Mr. W. sprayed his orchard often during open bloom, and killed 55 colonies of bees on an adjoining farm. Mr. B., not far away, also sprayed his fruit-bloom, killing all his bees, leaving hives full of honey, which his two little boys ate of and died before doctor could be called (Oklahoma) See that your neighbors do not poison-spray open fruit-bloom. It is dangerous. Some State laws forbid it
>
> I have late reports from most of the States, and bees wintered well; honey prospects are also good. In 1907 the Western States had a fair honey crop; but owing to warm winter and bad financial conditions there are now several car lots left unsold. Many dealers are now well supplied with the 1907 crop.
>
> I have had several complaints of bee-keepers shiping fancy comb honey in front of case with poor and uncapped sections in back. This lowers market, and I ask that you never be one of such.

We wish we had more particulars regarding the case mentioned, where all the bees were killed and two little boys who ate of the honey were poisoned to death. Perhaps Mr. France can tell us.

We are also glad to note that he is using his influence against the dishonest grading of honey. The influence of Mr. France and Mr. Rauchfuss will mean much.

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### DR. WILEY ON GLUCOSE OR CORN SYRUP AS A FOOD PRODUCT.

WE notice through the current press that Dr. H. W. Wiley, of the Department of Agriculture, is credited with saying that glucose or corn syrup is not palatable, nor is it eaten as a syrup. He says that it has to be highly flavored with other syrups before consumers will take it. This is the statement:

> I have spoken of maple syrup as an important food product. Other table syrups should also be carefully scrutinized in regard to their purity. We have in this country abundant supplies of syrup-making materials to provide for all the table syrups needed. The maple-grove, the sorghum-field, and the cane-field are ready to furnish all the table syrups that we need. There is no necessity any longer, if there ever has been, of using glucose as a basis of a table syrup. By itself it is not palatable, nor is it eaten as a syrup. When used it is very highly flavored with the lowest-grade products which are entitled to the name of either syrup or molasses. For instance, the final residue of a liquid character from the sugar-refinery is the most common substance used to flavor glucose when offered for consumption upon the table. Not only is it used for the flavoring, but its presence is usually designated by the statement that the syrup has a cane flavor. The table syrups of this country would be vastly improved if glucose were entirely eliminated from their composition, and if there were substituted for this mixed mass the pure products of the maple-grove, the sorghum-field, and the cane-field.

We do not think there are many consumers, who actually know the quality of pure glucose, or, under its new name, corn syrup, who will take issue with the statement.

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### IRRIGATED FARMS.

UNCLE SAM has quite a number of fine irrigation farms which he desires to sell on nominal terms to *bona-fide* settlers. These are located in Nevada, Montana, Wyoming, and other western States. In some cases the payment required is very small. Most of them are about 40 acres in extent. Particulars may be secured from the "Statistician," Reclamation Service, Department of Interior, Washington, D. C. Any of our readers who desire accurate details of any government reclamation project in the West can get particulars from the same source. Just now large projects are being opened, both by the United States government and the State government of Wyoming. The conditions are about the same as in Colorado, but the lands are probably a good deal cheaper, as Wyoming is a newer State. W. K. M.

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### OUTLOOK FOR HONEY FROM SOUTHERN CALIFORNIA VERY POOR.

WE have just received a line from Mr. L. E. Mercer, of Ventura, one of the most extensive honey-producers in California, dated April 5, saying that the bee-keepers of California are up against one of the worst seasons they have had for years. He adds that there has been no rain since February; cold nights have chilled the brood to such an extent that many colonies are very weak, and some of them are in the condition of spring dwindling. He has let all of his help go, as he does not expect any honey-flow, and he is of the opinion that the same conditions exist over pretty much all of Southern California. Mr. M. H. Mendleson, of Piru, has written almost as discouraging a letter, except he thinks there is a chance for some honey yet.

While the prospects were very promising in the early part of the year, it now looks as if the California bee-keepers would have another bad year.

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### WHY WE OBJECT.

SOME may wonder why we bee-keepers object so strenuously to glucose as a food. There are several reasons, and it may be well to state them. First, in nine cases out of ten it has been used to fool the public; that is to say, consumers have bought it unknowingly or unwittingly. Second, it has been used to depress the prosperity of certain legitimate industries such as syrup-making, bee-keeping, and preserve-making. The man who tried to do an honest business could not compete with the competitor who used glucose, and sooner or later he had to acknowledge defeat.

After the passage of the new national pure-food law all this was, to a great extent, changed. But under the recent decision, by which it is permissible to call glucose "corn syrup," there is a big chance to fool the public again. Articles of food naming glucose as the main ingredient would not sell; but under the new name it may now masquerade as a newly discovered food product, and it will continue to go in the stomachs of consumers until their owners discover that they are paying a big price for the old-fashioned glucose with a flavoring to cover up its brassy twang.

Glucose was largely used in preserves such as jams and jellies. Many housekeepers will on no account buy store articles of this sort, and are compelled for this reason to put up their own preserves. Hundreds of thousands of women do this rather than buy in the store a concoction of stale fruit, glucose, and benzoate of soda. Possibly it would be nearer the truth to say that *millions* of women put up their own preserves.

In Europe, on the contrary, there is a vast industry in the manufacture of jams and jellies. This is more particularly true of England, where good jam may be purchased in any store. It is a great national industry, and much is exported. Formerly the United States exported a considerable quantity; but glucose and benzoate of soda killed that trade.

There is a third and even greater reason. The human palate revolts against glucose, and it has to be flavored before it is really passably fit to eat.

There is considerable resemblance between the case of glucose and oleomargarine. The latter threatened to destroy the dairy indus-

try of America, not because it was good, but because it was very frequently sold as butter. *Oleo destroyed our export trade in butter.* This trade went to Canada, which does not allow oleo to be made there.

Artificial vanilla destroyed the trade in real vanilla, though it is distinctly an inferior product to that made from the vanilla bean, and some say the artificial product is poisonous.

Artificial indigo destroyed the industry of growing indigo, once a southern industry of importance. The artificial dye fades, and the natural is everlasting; yet the substitute won the fight.

Our fine carpets and rugs are made by eastern nations who use no artificial dyes or shoddy. Our Navajo Indians make the best blankets with purely natural dyes. The result is, they get high prices from white men who prefer the real goods; and it is economy to buy the high-priced goods—they last for ever. It looks as if we were too smart in some things. In any event, it will pay the bee-keepers of America to watch the glucose industry. W. K. M.

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### LIQUEFYING COMB HONEY, AGAIN; THE PLAN A SUCCESS.

Further experiments in liquefying comb honey in an incubator, as related on pages 278 and 414, have been made, and we may state that the machine has been kept going on another lot of honey. We selected some comb honey that was candied solid, so that it was almost hard; but the cappings were intact. It took nearly a month to dissolve all the granules of the honey. At the end of that time the combs and cappings were intact, and the honey entirely liquefied. The honey itself was more waxy, of heavier body, and to this extent was actually improved. We are satisfied now that a comparatively small room, having a sufficient number of steam or hot-water pipes, could liquefy almost a carload of honey at a time. If the cappings were intact, such honey would be fully as good as if not better than when it was taken off the hives.

In the matter of regulation we can not conceive of any thing better now than having a ventilating-pipe connected with outdoors. This should be operated by a valve or door that will lift through the action of a thermostat, allowing the excess of hot air to escape the same as in an ordinary egg-hatching incubator. In addition, for safety, an electric thermostat set between the low and high point would notify the owner, by means of an electric bell, when the temperature was going above 105° F. And right here we may say that we found the best temperature for liquefying comb honey to be between 103 and 105° F.

It is well known that many a dealer will get a quantity of alfalfa honey on his hands, partly candied. Such honey usually sells at one-third or one-half price If he can have a suitable hot room he can save this honey at a comparatively small cost. A very small hot-water boiler, with sufficient radiation if hot water be used, would keep a room 10×10 feet and 8 feet high hot for a month, at an expense, we will say, not exceeding $10.00 for fuel. If there be $1500 worth of honey in the room it can be readily seen that the fuel item is practically insignificant.

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### OUR POLICY TOWARD UNPOPULAR OR UNORTHODOX TEACHINGS.

One of our old correspondents recently made the statement in one of his letters that he supposed that what we published without a footnote reflected our own sentiments, and therefore had our editorial indorsement as if we had written it. In reply we said that, while that may have been true at one time, it was now our policy to publish any fair and reasonable statement, even though such statement might be in opposition to the well-known views of the editors of Gleanings.

Where a correspondent is obviously wrong, and is clearly at variance with the best thought and modern practice, we feel it our duty to put in a footnote of caution to prevent the beginner from being led into expensive error. But where an unorthodox correspondent sets forth a proposition that has a semblance of truth in it, we feel that we should let it go unchallenged. To footnote every statement that seems to be beyond the pale of orthodoxy or our beliefs would make our journal simply a mouthpiece of the views of the editors, and we hope we are fair enough to believe that no editor is infallible. At all events, *we* do not claim to be. We desire to have Gleanings reflect all shades of opinion and practices, believing that a general discussion will in the end bring out the truth. At the end of that time we may or may not summarize the facts proven or brought out as we did in the plural-queen discussion.

Lately, when R. L. Taylor, of Michigan, stated that clipped queens were "an unmitigated nuisance," and that he preferred to restrain his queens with queen-traps instead, he was clearly running counter to the views of most bee-keepers in general. But as those views were clearly and fairly stated, we did not challenge them with a footnote, believing there was an even chance that he might be right. This called forth a rejoinder from Mr. Halter, and then from Dr. Miller in this issue. If we had made an effort to squelch Mr. Taylor at the start by a vigorous footnote, other correspondents would never have thought of writing to state their views, and there the matter would have ended. But who knows but this discussion, which is free for all, may draw out new facts to an extent that will cause a revision of opinion?

To exemplify this matter further, any one who would have been bold enough at one time to declare against spring feeding for stimulating brood-rearing, such person would have been branded a heretic; now, apparently, there is a sentiment against it. Suppose, for example, the editor of this journal had suppresed these communications advising

against spring feeding because they were counter to his notions. Suppose, again, he were to hold back all others of the same character — clearly he would be molding his journal to his own notion of orthodoxy, and in time GLEANINGS would be a one-horse publication.

These remarks on the policy of GLEANINGS are dictated by the one who has been longer at the editorial helm than any other person on the force—namely, E. R. R. We are heralding no new policy, but an old one that has been undergoing a slight revision.

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### U. S. DEPT. OF AGRICULTURE BULLETIN NO. 110: CHEMICAL ANALYSIS AND COMPOSITION OF AMERICAN HONEY, BY C. A. BROWNE AND W. J. YOUNG.

MR. N. E. FRANCE, General Manager of the National Bee-keepers' Association, placed on exhibition before the convention that was held in St. Louis during the year of the exposition 100 samples of honey which he had obtained from members in various parts of the country. A larger and more representative collection of American honeys has probably never before been obtained. These, apparently, were subsequently placed on exhibition in the great exposition where they could be further seen and studied.

To Dr. E. F. Phillips, of the Bureau of Entomology, in charge of apiculture, belongs the credit of procuring these samples for the government. These were assigned to the Bureau of Chemistry, the head of which is Dr. Wiley, himself a sugar chemist, who in turn placed them with Dr. C. A. Browne, another accomplished and skillful sugar chemist, who subjected them to a long and searching investigation. Forty more samples were secured from elsewhere, notably from the Hawaiian Islands, where abnormal honeys are common. The pollen in the different samples was examined by Mr. W. J. Young, as a means of further identifying the source from which the nectar came.

Taken all together, we have as a result a brilliant contribution to the subject of American honey analysis, equal at least to that possessed by any other nation. Hereafter we have a guide to the subject that is safe, scientific, and authoritative, for Prof. Browne has so well done the work assigned to him that there is little left for others to do, though the author thinks he could have extended the investigation still further. It is to be hoped he will be allowed to do so.

With the data so carefully collected and tabulated, the pure-food authorities of this country are now in position to do justice to all the claims of the American bee-keepers. Some of the latter were just a little afraid the "big stick" might be applied to them, when, as a matter of fact, they were quite innocent of any wrong-doing. In this book the information is tabulated ready for use, such as a court of law requires in a pure-food case. Hitherto such information was unobtainable. In this way justice will be promoted, and the interests of bee-keepers protected.

Some of the facts elicited by the investigation are quite new; for example, 20 per cent of the samples showed no signs of granulation. This is surprising. The two most important of the non-granulating honeys are tupelo and sage, both southern honeys of high purity and quality.

Evidently honey-dew is easily detected, for the report says, "The presence of much honey-dew in a sample could usually be detected by the very marked molasses-like odor and flavor." This looks simple enough, and yet it may be quite an accurate test.

It is almost unnecessary to say that an extended inquiry of this kind elicited a number of new facts; for example, on page 42 we find the following:

"The statement is sometimes made, that a pure honey will rarely polarize more than –20° V. at 20° Cent., and that a higher reading than this, while not conclusive evidence of adulteration, may well be looked on with suspicion. This statement is hardly borne out by the analytical results given in the table, where 16 of the 100 honeys examined polarized more than –20°, the results going as high as 24 6° in a tupelo honey and 24.8° in a mangrove." Tupelo honey had an invert polarization of –28.38° at 20° C., and yet contained 7.24 per cent of non-sugars.

It is very evident from this that tupelo honey is of very high quality, and yet it must be admirably suited to the purposes of the baking trade. For a long time bakers have preferred southern honey for their uses, and it is evident they have a good reason for so doing. One result of the publication of this book will be to raise the selling price of tupelo honey. It is clear that it has been underestimated.

Errors in present-day methods of analysis were detected by the author. For example he says, "The error resulting from a neglect of the phenomenon of birotation in the calculation of sucrose in honeys by Clerget's formula has already been mentioned. Another very serious error is that due to the change in the specific rotation of the levulose of the honey after the inversion by hydrochloric acid. This error in sugar analysis has been so thoroughly studied by Lippman and others that no detailed study of it need be undertaken here Folman, who has recently made an investigation of this error, shows by analysis that many honeys which, when analyzed by the Clerget method, appear to contain cane sugar, contain in reality none at all, the error in many cases exceeding 1 per cent." Adding his own experience, Dr. Browne arrives at the following decision:

"On account of numerous errors just cited in connection with the Clerget method, and the difficulty of introducing any correction for these errors, the determination of sucrose in honey, when accuracy is required, should be made only by the gravimetric method. A neglect of this precaution might cause injustice to the producers. Honey No. 23, for example, had been found to contain 8.95 per

cent sucrose by the Clerget method, a larger amount than that allowed by the standard (8 per cent)." This is an important decision for a government chemist to arrive at.

It may be well right here to state that the United States standard for honey is as follows: "Honey is lævo-rotatory, contains not more than 25 per cent of water, not more than 25 per cent of ash, and not more than 8 per cent of sucrose." Most sugars deflect a ray of light to the right when subjected to polarization in a polariscope, but honey deflects it to the left as much as 24 degrees. hence it is termed lævo-rotatory, or left-handed This action is due to lævulose sugar in the honey. Honey also contains dextrose, but the lævulose seems to be the more powerful, and deflects the ray to the left.

The author made one very important discovery, one which is likely to be of far-reaching importance in the future determination of adulterations in honey. He says: "In other words, 50 per cent of the honeys examined gave a constant* ranging from 26 to 28°; 80 per cent from 25 to 29°, and 95 per cent from 23 to 30°." He here refers to honeys which have been "inverted" by means of strong hydrochloric acid and then tested in the polariscope."

It is clear that a honey that does not come in between these figures is suspicious to say the least. This discovery is worth a good deal to the bee-keepers of America. He says: "*It will thus be seen that we have a constant for honey which will be as valuable in analytical work as the Reichart-Meissl number is in the examination of edible fats.*"

As regards moisture in honey, the average amount was 17.90, with a range of from 12.42 to 26.88. This shows that American honey is 3 per cent dryer than German honey, and German honey is dryer than British. This is due to our dryer climate; but honey-buyers ought to note this, and act accordingly. Nevada honey is dryer than that of Missouri, for the former had only 14 61 per cent of water, whereas the "show me" State had 19.57 per cent. It is a truism to say the locality having the highest rainfall has the highest percentage of water in the honey produced.

As we might expect, very careful consideration was given to the subject of honey adulteration in all its relations. From what we glean, it is abundantly clear that our greatest danger arises from adulteration by the use of syrup made from invert cane sugar. Glucose is easy of detection. The author thinks that, if bee-keepers were more careful in naming the source on the label, it would greatly facilitate the detection of adulteration, and that is undoubtedly so. He says bee-keepers are exceedingly careless, and apply the name of almost any flower, thinking that they keep within the requirements of the law so long as their product is pure honey. This is a mistake, and more care would assist the bee-keeper as well as the pure-food officials. For example, if a sample of honey is labeled tupelo or sage, the official chemists could tell very quickly if it was by its behavior in the polariscope, as they know just what to look for at once.

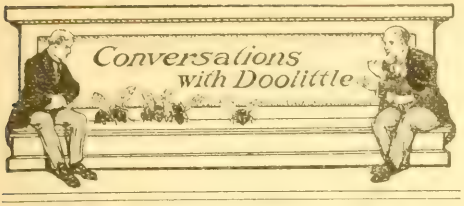
A feature of the report is the examination of the honey-dew honeys of the Hawaiian Islands. There, almost the only pure honey comes from the mesquite, which was introduced there many years ago. In localities where it is common, mesquite yields largely of the very best quality of honey; but in the sugar-growing districts the bees feed on the exudations from the sugar-cane, caused by insects. This results in honey-dew honey, or right-handed honey. It will be remembered that Uncle Sam has refused to allow this honey to be sold as normal honey. If sold at all it must be denominated "honey-dew honey."

There is quite a list of methods given for discovering different kinds of adulteration. These will be extremely useful to food chemists everywhere. and it is in this the chief value of the work lies. Food chemists who are not particularly well versed in the latest modes of examining honey will find here just what they require, and no doubt this was the object of Prof. Brown's studies. We say this because some might think this is a book for bee-keepers, which it is not.

As a further means of detecting adulteration in honey, Mr. W. J. Young was detailed to examine the samples to discover the origin of the pollen in them. Almost all the samples contained several kinds of pollen. For example, catclaw honey from Texas contained, in addition to catclaw pollen, rosaceous, hop, mesquite, labiate, coniferous, evening-primrose, cruciferous cactus, magnolia, cotton, composite (three kinds), ellipsoidal (four kinds), and subtriangular types were also found. Goldenrod honey from Maine contained five kinds of pollen of the composite type, probably including dandelion, goldenrod, and aster. There was also white and red clover, cruciferous ellipsoidal (probably willow), basswood, rosaceous (raspberry), and ericaceous types. The subject of pollen is well illustrated. Possibly, in some cases, examination for pollen may be the quickest method of detecting fraud.

At the end is given an excellent bibliography of all the chemical literature of honey from 1892 to 1907. This is a valuable feature. These are mostly from German sources, but several are by Americans and Canadians. Not one is written by an Englishman. There are 89 monographs mentioned, so that the literature of honey is not small by any means. We note, also, that some French work of recent date is not mentioned in the list, probably because we go to Germany for our chemical knowledge. All together this is an excellent contribution to our knowledge of American honeys, highly creditable to all concerned. It may be purchased from the Superintendent of Documents, Washington, D. C., at the price of 30 cents. Five cents more to foreign countries. W. K. M.

* Constant in this case refers to a certain range of reading allowable in honey on the scale of the polariscope.




ABOUT HIVES.

"What kind of hive are you using, Mr. Doolittle?"

"A hive which holds the regular Langstroth frame. It would probably be called the Langstroth hive, but it is simply made of four plain boards, nailed together with square ends, just the same as an ordinary box would be made."

"But you used to 'bank' on the Gallup hive, did you not?"

"Yes. I used to think that the Langstroth idea, as embodied into a hive by Gallup, was all that could be desired."

"Did you ever try any other?"

"No. Have you tried others, Mr. Smith?"

"Yes. I have used the Weeks, Champion, Kretchmer's, Root's Simplicity, Quinby, Gallup, Langstroth, and American; and I came over to-day to ask you if you thought the so and so would not be better than any of those I have used."

"Whew! You almost take my breath away. Such a list as that! I should say that it was enough to satisfy any reasonable person that there is very little virtue in a *hive* as a means of securing a large yield of honey, to say nothing about adding another to the list."

"What do you mean? Does not the *hive* have a whole lot to do with the crop of honey we secure?"

"It may have much to do with the marketable shape in which we secure our honey; but so far as the amount obtained by a colony of bees is concerned, the hive plays no very important part. Gallup told us, nearly or quite forty years ago, that, if of sufficient capacity, bees would store as much honey in a nail-keg as anywhere, and no man has been able to contradict the statement successfully. Hives do not *make honey*, and there is no virtue in any hive as a honey-maker."

"Well, then, what about hives, any way?"

"Simply this; and this was just the thing I hoped you had learned by using so many different ones: That hive is the *best* whose brood-chamber conforms the nearest to the natural habits and wants of the bee, and also to the wants of the bee-keeper, so as to enable him to take what surplus honey the bees may store, in the *most marketable shape*. That is all there is of it."

"And you now think that the Langstroth will meet those requirements as well as any?"

"I certainly do, or I would not be using it altogether."

"Well, I am surprised. You may be right. But there is another thing I want to know about. What color is it best to use in painting hives? I painted one black, and this was the worst to cast swarms of any I ever had. Then I have had many that were painted red, but they seemed to get too hot in warm weather, and cause swarming."

"But don't you know that black or red hives will not draw too much heat if allowed to stand in the shade from 8 in the morning to 4:30 in the afternoon, as they should in all well-regulated apiaries, after they become nearly filled with bees and brood?"

"But mine stood in the sun."

"Then if your hives stood in the sun they should have been painted white, because that is the only kind of paint that will allow the hives to stand without great discomfort to the bees during hot weather. But you do not say how you found matters in the hives that were left unpainted. If your colonies were in unpainted hives, and your locality similar to mine, I think you would have noticed that colonies in unpainted hives did the best. If there is a single *good* reason that can be advanced for painting hives at all, except for looks, I have never seen it; and as I believe there is no such reason, and not being naturally proud, or greatly concerned about looks, I have for more than 32 years left all of my single-walled hives unpainted."

"Do you paint double-walled hives?"

"Yes. With double-walled hives the case is different, for then the bees are practically in an *unpainted* hive, even if the outer shell *is* painted."

"But we are told that it is economy to paint hives, are we not?"

"Most bee-keepers talk that way; but I believe this is a mistake; for if cost of paint, time of putting it on, etc., be taken into account, said cost will more than renew the hives as often as those unpainted become unfit for use. But I think the economy is the other way. If any man would give me $1.00 a hive for the privilege of painting my single-walled hives he could not thus buy the privilege, for I should consider that I lost $2.00 in honey, because in painted hives there is not so great an efficiency toward brood-rearing early in the season, and this efficiency applies mightily along the dollar-and-cent line, where the flowers which yield honey bloom early in the season, as does white clover."

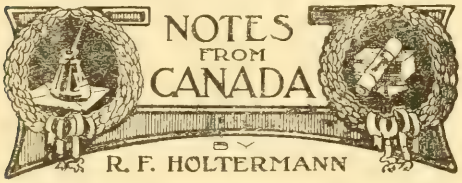
"But you would paint the top or cover?"

"No. All hives need a shade-board to protect them from the fierce rays of the sun from 8 A.M. to 4 P.M.; and as this shade-board not only protects from the sun, but from the rain as well, the covers and hives need no further protection, as it is rare that the sun warps the boards or the water enters or stands on any part of the hive."

"My hives are under trees."

"But the bees want the sun, morning and evening, to do their best, and the trees do not allow this. With me, colonies under trees do not do nearly so well as those out in the sun, but having a shade just over the hive during the middle of the day. I have often wished they did, for in extreme hot

weather, shade is much more comfortable to work in than the sun. But the bees thrive much the best out in the sun, with a shade just over the hive during the hottest part of the day. My advice to you and all others is this: Try a part of the apiary each way, and then you will *know* which is best for *you*. Depend upon the knowledge you gain through experimenting for yourself. With this knowledge there will come a certainty which can not be had in any other way."




### COMB HONEY IN CANADA.

There appears to be a regular stampede toward the production of comb honey during the coming season, probably on account of the high prices asked for and obtained last fall. Years ago comb honey sold in Canada at a figure as low as $1.00 per dozen sections, and quite commonly for $1.25 per dozen, with the result that many stopped producing it. I doubt the wisdom of an extensive move in the direction of an increased production. The prices of comb honey have not been maintained in Toronto. The dealers have plenty on hand, and Mr. Grainger and others have not been able to sell their stock, even at a reduction of 30 per cent on last fall's prices. During a visit, March 10, Mr. Grainger gave the names of several well-known bee-keepers who had been trying to dispose of comb honey. If the financial depression should continue, the prices on comb honey will suffer more than those of extracted; for at high prices comb honey comes more under the head of foods that can be dispensed with. These conditions have greatly curtailed the demand for comb honey. This is, in brief, the situation *in Canada*. Every one will, of course, use his own judgment in the matter.

### WINTERING CONDITIONS OF BEES.

On p. 52 of the *British Bee Journal* D. M. M. Banff writes: "Bees have been much confined, and had few thoroughly good flights. Never, perhaps, have I seen more dead thrown out, and very seldom, if ever, have there been so distinct and general signs of the markings of dysentery. It may be owing to the past inclement summer causing an overplus of pollen-gathering—not only in the regular store-cells of this substance, but also in the honey in the capped stores, and the spotting is uncommonly dark and malodorous."

In Ontario, those who winter their bees outside depend more or less upon the bees getting a cleansing flight some time during the winter. During the past winter, from early November till March 10 the bees had no proper flight, and a good deal of dysentery is again reported in localities where the honey-flow was not good last season, and where sugar-syrup stores were not supplied in sufficient quantities to carry the bees through the winter. I am more and more convinced that the only safe course to pursue, unless the bees are sure of frequent flight, is to feed sugar syrup for winter *if the honey season has not been good.*

### COMB-HONEY PRODUCTION.

My article, "Bee-keeping in Quebec," should have read that the weakness in comb-honey production in that province is that the comb is *not* fastened to the sides and bottom, owing to the use of starters instead of full sheets. Thanks, Dr. Miller, for drawing attention to the matter. By the way, Dr. Miller and Allen Latham are having a profitable and friendly discussion on the question of bottom starters and other matters.

Mr. Latham, page 290, GLEANINGS, states, "Yet it is desirable to get the plump section, for the simple reason that it will sell better — sell better because the buyer thinks he is getting more honey for his money." That is true; but a much more important point is that a well-filled section is *very* much less likely to break in transit. Even at the expense of showing my ignorance, I will confess that, although I have noticed many differences in varieties and strains of bees as to comb-building, my attention had not been drawn to a difference as to the attachment of comb, p. 291; yet Mr. Latham may be quite right. It is certainly an exceedingly important point raised, and it should be followed up in GLEANINGS. I do not like those pesky German black bees any way, and am quite convinced that *every good trait* they possess can be found in other varieties.

### BOTTOM STARTERS AND SPLIT SECTIONS.

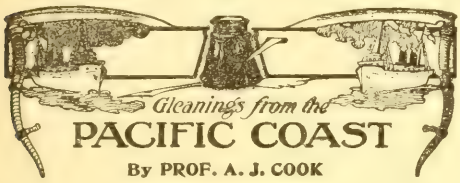
Because I have written and spoken mostly on the production of extracted honey I am often credited with knowing nothing about the production of comb honey. Let me say that Mr. Eugene Secor judged my comb honey at the World's Fair, Chicago, and it scored the highest of any there. It was not taken with a bottom starter. I can, however, see that the *method* of putting the foundation in the sections may have much to do with the need or not of a bottom starter in the section. Again, Mr. Latham believes that it would be very objectionable to have the edge of the foundation show on the top and sides of the split section. Another one thinks the consumer will look upon this with suspicion. I believe I introduced the *split-top* section from England to this continent. It looks unsightly, but I doubt if it throws suspicion on the product. The consumer cuts the section out of the wood, and probably never sees the foundation in the split; and even if he does he ei-

ther knows what it is or does not know enough to know any thing about it. It is surprising how little people know about some things.

HOW TO REMOVE WAX CAKES FROM CANS.

Sometimes through rapid cooling the cake cracks, and the outside portion adheres tightly to the side of the can.

Mr. R. L. Taylor, at the last Michigan State convention, gave a good and simple method of loosening the cake in such a case. He advised turning the vessel upside down and pouring over it boiling water out of a tea-kettle spout. I find that this works well. The tin expands at once, being metal, and down drops the cake. Simple enough, but many have not learned it. [If the can is larger at the top than at the bottom, and if the sides are well brushed with thick soap-suds, the wax will almost never stick.—ED.]




APICULTURE IN OUR AGRICULTURAL COLLEGES.

And why not? Yet it is true that in only a very few has any special attention been given to this branch of agriculture. In Michigan, bee-keeping has been taught since the '60's. In several other States, especially in Colorado, good work has been done. That Michigan has set a good example appears from the fact that such men as Benton, Porter, and Hershiser are among her graduates. Bee-keeping is most worthy, and should no longer be neglected. It conserves the vast deposits of most wholesome nectar which otherwise must go utterly to waste; it gives a profitable and very delightful occupation to scores of our most worthy citizens; and, best of all, it insures cross-pollenation of our plants, which is indispensable to the most successful agriculture, and without it, and that by our honey-bees, in many lines of fruit and vegetable growing, there would be no success at all. If all our agricultural colleges, which are doing such admirable work in other lines, would give to apiculture the attention that its importance demands, we should not only advance the industry by spreading information regarding bees and the production of honey, but we could capture men of rare ability who else will never be attracted to bees at all. There are many Clutes, Phillips, and Hershisers, could we only get them trended beeward, who would be bright and shining lights in the apicultural world.

I suppose that the first class in bee-keeping ever taught west of the Rocky Mountains was taught by me here at Pomona College, in 1894—as fine and enthusiastic a group of young ladies and gentlemen as ever delighted a teacher.

BEES SPREADING SCALE INSECTS.

Mr. R. F. Weir, Sunnyside, Washington, writes that at their "farmers' institute," at Sunnyside, much was said regarding the spreading of scale insects by the honey-bee. The special pest was the San José scale, and the fruit-men were loud in their complaints. There were very few bee-men present, and so the matter was very much one-sided.

This is another case where ignorance is loud with complaint, and where a little more knowledge would have made a very different showing. Like the case of the spread of pear-blight, there is some truth; but the conclusions are utterly misleading and wrong. It is true that all scale insects are spread while very young, and while they are crawling about on leaf and twig before settling down to their real business, which consists of sucking and growing. It is also true that most of this spreading is done by insects and birds. The bird or insect alights on the tree where the young scale insects are crawling about in search of the right place to locate, and these latter crawl upon the feet of the bird or roving insect; and as the latter fly to other trees, the young tiny scale pest is carried along. It is possibly true that, in rare cases, the bees may do some of this mischief; but surely it is very little that they do. The bees do not alight on leaf and twig, nor even on the fruit; and as the young lice are very rarely on the bloom, they are but little likely to be carried by bees. The little scale insects are so tiny that they walk about very slowly, and so would rarely crawl on the blossoms, and hence would almost never crawl on to the feet of bees. I have never seen the wee scale lice on flowers, though I am wont every year to examine flowers daily and most carefully with a good lens; and as seldom do I see bees on any part of the plant except the bloom, and so we may rest assured that bees are scarcely ever wrong-doers in this work of scattering the young scale. This accusation has even less foundation than that of the spread of pear-blight. There the bees do their part; but there are enough other insects so that the mischief would be as effectually done were there no bees at all. Here we may feel very sure that the bees do almost none of the evil.

WE have before us Vol. I. No. 1 of *The Guide to Nature*, a magazine devoted to nature study, by Edward F. Bigelow. It is a beautifully gotten-up journal of 40 pages and cover; price $1.50. It is well illustrated from original photos, and contains a range of subjects that will be of more than ordinary interest to nature students. It is seldom that the initial number of any magazine presents a nicer appearance than this, and we congratulate its editor. For particulars apply to Edward F. Bigelow, Stamford, Ct.

### SPLIT SECTIONS.

Split sections have been brought before the public lately in a way that seems likely to induce some to adopt them, or at least to give them a trial. It should be remembered that the plan is by no means new. Fifteen years or more ago I knew of a man who used them to a considerable extent, and I believe the plan had been published some years before that. The fact that it has made so little progress since that time that most regard it as something new, while it does not prove the plan valueless, is, to a certain extent, indicative that it is not likely to be generally satisfactory. I believe the points of superiority claimed are, less time required to fill the section with foundation, and a better filled and finished section of honey. As to the first point, I think the difference would be so small that it would be hardly worth considering. On the second point I would be willing to concede a little superiority in results over ordinary methods, but one that is so slight, when better methods are followed, that I do not believe it begins to compensate for the objections to the plan.

Chief among these objections are the general appearance of the section and the color which it gives to the old belief in manufactured comb honey. It is beyond question that many persons unfamiliar with comb foundation would find in these sections with their margin of unaltered foundation proof positive to their minds of the artificial nature of the honey, and thus one of the most injurious things that ever happened to the honey market would be given new life and strength.

### FOUNDATION SPLINTS.

I used a number of splints for supporting full sheets of foundation last summer, and found them very satisfactory for the purpose. I was never satisfied with the results of horizontal wiring except when used with heavy foundation and under the most favorable circumstances of temperature, etc. The old vertical wiring gave perfect combs, but it is hardly suited to the thick top-bars in such common use, and the wires on the tops of the frames are considerable of a nuisance when it comes to scraping burr-combs off from them. When I came to manufacture the first splints I used to experiment with, I very soon found that they were not easily made by ordinary methods. Such small articles were difficult to handle in circular-saw work. I soon hit upon a method, though, that made it very easy. It may be that the slicing method of which the editor has told us is best suited to factory use, but perhaps there are some who, like myself, use a special size, or who want only a few to experiment with, or, for other reasons, want to manufacture their own, so I will give my method. I made them out of the ordinary sawed wood separators. Cutting single splints at a time was too slow; and cutting a number at a time was troublesome and inexact. Either way made rough work, and the saw had a way of scattering those light splints all over the shop. So I took half a dozen old separators, more or less daubed with propolis, put them in a press in a warm place for a few minutes, and then cut the lot up as though they were a single board. Eureka! Then I took new separators and piled them up, dipping each alternate separator into melted beeswax, then put the pile into a press until the wax was cold. This pile was then sawed up as though it were a solid board. The best work was done by a thin fine-toothed saw without set, running at a high rate of speed. With this I could readily slice off splints at the rate of 250 a minute, all nice and exact. The wax did not clog up the saw in the least; and as the splints were to be soaked in hot wax anyhow, it was no detriment, but an advantage in handling that they were stuck together.

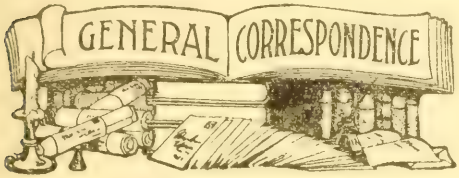
### FIXING UP OLD HIVE-CORNERS.

Perhaps bee-keepers in the East are not much troubled by hives gaping open at the corners; but in the dry climate of Colorado it is a very common fault, especially with the Dovetailed hive as it was made several years ago, with the top edge of the ends of the hives coming between the sides. The cracks thus made are very wasteful of the heat of the hive, and sometimes become large enough to admit robbers. This does not do much harm as long as they are occupied by strong colonies; but if you stack up such hives or supers containing honey where the bees can get at them, you are likely to have trouble.

To put such hives in order I have a pair of cabinetmakers' clamps, by the use of which the corners may be brought up square and true. While they are held thus they may be renailed, if nailing will hold them. If not, a strip of tin may be nailed around the corner, using small nails. This holds the parts together and closes up any crack that may be left. A coat of paint on such a hive after it has been fixed up will make it look about as well as ever, and good for years of service thereafter. Instead of the tin, a wooden cleat may be nailed across the end of the hive flush with the top. This makes the hive much stronger, but requires the use of a different cover from those in common use.

The Department of Agriculture's definition of honey, as given in circular No. 19, says that "Honey is the nectar and saccharine exudations of plants, gathered, modified, and stored in the comb by honey-bees (*Apis*

*mellifica* and *A. dorsata*).*" How much honey is there on the market stored by *Apis dorsata*? Why leave out the other races of bees?




## THE TRUTH ABOUT QUEEN-TRAPS.

### How to Know the Conditions by Looking at the Trap; Managing Swarms Without Traps or Clipped Queens.

BY R. L. TAYLOR.

On p. 282 Mr. Halter makes reference to some suggestions of mine with regard to the use of the trap instead of clipped queens for the prevention of the escape of swarms. I am at a loss to determine whether he is animated by a desire to make a "drive" at me, even at the expense of the trap, or whether he is without much experience in the use of the trap for the purpose mentioned. If the former, I have no objection to make. I shall enjoy it as much as he so long as he avoids misleading insinuations concerning useful apiarian utensils.

He asks: "How can you manage a given number of yards with only one or two visits a week, simply relying on queen-traps? After an absence of five days you come to examine the apiary, is it not necessary to overhaul every trap and let out the drones? If you find a laying queen you are gratified: but if you find a virgin, was it a case of swarming or have you detained her from her wedding-trip?" And then on another visit, after heavy rainstorms and chilly weather he imagines he would find the traps full of dead drones and perhaps some dead queens.

For his relief let me say that it is not necessary to let out the drones unless he allows his bees to rear an abnormal number of them. Let them stay and die; or, if too many for that, drown them and teach the chickens to eat them. In either case it is a good riddance. Nor is it necessary to overhaul every trap for any purpose. It is only necessary to glance at each trap in passing. If the bees are simply hanging out they may lie in front of the trap, or even cover it; but they will not pack the trap itself. (It goes without saying, that hanging out *during* a honey-flow is the result either of ignorance or negligence; if *after* the flow, then swarms need no longer be expected.) But if the trap is found packed with worker bees, that shows at once that a swarm has issued and that the queen is in the trap, and the colony can be dealt with as desired, without delay. If a trap is found with only a handful or two of worker bees there will be found there a virgin queen restrained from taking her wedding-trip. If a trap should be found containing a queen attended by no worker bees worth mentioning, it would be a virgin escaped from a rival, and is not wanted there. Thus the use of the trap is simple and effective, and swarming colonies quickly and easily managed.

Again, Mr. Halter fears the effect of heavy rainstorms and chilly weather, after which will be found, perhaps, traps with dead queens and some full of dead drones. But the drones are no deader than they would be if dead without the storm—more's the pity. Some of the bees may get wet in a case where a swarm has issued, but not so wet as in a case of simply lying out with no trap on the hive. It may be set down as certain that no bees will be injured by any rain or weather we are likely to have during the swarming season; and as for queens, they are every whit as safe from injury in the trap in such cases as they would be in the hive itself.

Not satisfied with condemning the trap, Mr. Halter attacks my plan of managing swarms with neither traps nor clipped queens, and says, "How disastrous, when several swarms with laying queens cluster together, and the victorious queen destroys the others!" Not at all. Such queens are not bent on destroying each other. Even if the swarms are only let alone they will often divide of their own accord. In more than one case where two swarms were hived together I have had one of them come out, leaving the other in the hive after they had been together more than a day. At all events, if the apiarist is "on to his job" it is very seldom that a queen is lost. Even a virgin, though she will be balled, is not often injured.

For catching swarms I use light poles so prepared that a basket may be readily hooked on to the upper end. When several unite, some of the bees are shaken into each of several baskets—as many as there are swarms or more. The baskets, as they receive bees, are hung on convenient branches when those having queens are soon distinguished from those without by the conduct of the bees themselves. Now, traps are adjusted to the hives prepared for swarms, and the bees poured out of the baskets before the traps, taking care to divide them equally. Then we watch for queens, driving the bees in with smoke. Whenever a queen is discovered she is slipped into a cage till all have been located; then those lacking queens are supplied at once from the cages. Very seldom need a queen be lost; and should one be, she need not be deplored at that season of the year.

I have never recommended the trap as equal to the personal attendance of an apiarist during swarming. It is not. But when

* [We have been informed that Mr. Benton, then in the Department, appeared before the committee and requested that the race *A. dorsata* be added, as he was expecting to make a trip to the East, secure these bees, and introduce them in this country. Under present conditions there will probably be very little of their honey produced in this country.—ED.]

such attendance can not be secured, then it is a very convenient and helpful substitute; and to prevent, as far as may be, an unjust prejudice against it in the minds of those for whom it may be a valuable servant, I have been constrained to attempt herein its vindication.

Lapeer, Mich.

## QUEEN-TRAPS VS. CLIPPED QUEENS.

### What Proportion of Clipped Queens are Superseded? the Behavior of Swarms when Queens are Clipped.

BY DR. C. C. MILLER.

[On this same subject is the following article, taking the other side of the question. Of course, neither Dr. Miller nor Mr. Taylor had seen what the other had written in this issue. These two articles on the opposite sides of the question may call for some new rejoinders; if so, our space is open to both.—ED.]

On p. 19 of GLEANINGS I find the following, credited to R. L. Taylor:

"Clipped queens are an unmitigated nuisance at swarming-time. A swarm with a clipped queen behaves quite differently from one with an unclipped one, the difference being greatly against the clipped queen. These disagreeable features will disappear if the wings are left whole and a queen-trap is used; and swarms will mix much less with the trap. Moreover the trap furnishes perfect security against all absconding, which clipping does not do, for queens are likely to be superseded at any time for any cause without the knowledge of the apiarist; and when supersedure takes place a swarm will issue with the new queen, and away go bees, queen, and all."

Here I've been in the habit of looking through my colonies each year before swarming time, clipping all queens found with whole wings, and then feeling safe till the next spring, without its occurring to me that at any time a queen might be superseded and then a swarm go off with a new queen. I wonder, really, how many swarms I've lost in that way without knowing any thing about it.

But is not that matter of supersedure just a little overdrawn? "Queens are likely to be superseded at any time for any cause." Unless I am a very poor interpreter, that will be generally understood to mean that supersedure is just as likely to occur at one time as another. Is it not generally understood that supersedure takes place in the great majority of cases after the time of swarming is over? A great deal of opportunity for observation leads me to believe that the general understanding is correct.

Some time in April or May I go through my colonies and clip all queens found with whole wings. Throughout the season afterward I frequently see more or less queens in different colonies; and if supersedure "at any time" were so common as one is led to believe from what is said on page 19, I ought somewhat often to see a queen with whole wings. On the contrary, it is a very rare occurrence. My assistant, who has had even more opportunity for observation than myself, and who is morbidly sensitive as to the matter of loss from swarming, says, "Very, very rare, indeed." I really think that matter of supersedure is very much overdrawn.

Still, there may be *some* supersedures after the usual clipping-time; and, if I rightly understand page 19, the new queen, after she gets to laying, is likely to go off with a swarm. Really, Mr. Editor, how much chance do you think there is for that? Gravenhorst, one of the best authorities on such matters, puts it down as an unvarying rule that a laying queen never swarms in the year of her birth if reared in her own hive. Indeed, some go further and say that no laying queen will swarm in her first year; but I am sure there are exceptions to that. But in the case of supersedure, the more guarded rule of Gravenhorst bars all danger. In an experience of more than 40 years with clipped queens, and with colonies never very small in number, if page 19 is reliable I ought to have had quite a number of losses in the way indicated. It seems to me they could hardly have been very many during so long a time without my having discovered some of them. I question whether I ever had a single loss in that way.

As to the naughty behavior of swarms that have clipped queens, I have had some experience in that line. I have had bees of more than one swarm unite, and I've had swarming bees return to the wrong hive. But I do not think I've had much serious loss in that way. If the bees of No. 37 should go into No. 45, No. 37 would gather less, but No. 45 would gather more. Yet I think there is some loss by it. But don't dream for a minute that swarms with clipped queens have a monopoly of that sort of business. Swarms troubled that way before ever queens were clipped, and I've heard and read of more swarms uniting with unclipped queens than I ever had unite with clipped queens. A reputable text-book before me tells of how "as many as a dozen have been known to come out in this way, and go off to the woods in a great army of bees." I think I had never more than four with clipped queens to unite at a time. And I had no trouble fishing queens out of the united cluster as I would have had with unclipped queens. Nor did they ever go off to the woods.

Concluding, the beginner is practically told, "Don't clip, but put a queen-trap on each hive, and then you'll be all right, for every queen, laying or virgin, will be caught."

Don't you think that the natural thing will be for at least some of your readers next spring to put queen-traps on all colonies and then feel the thing is settled for the year? Certainly I've known more than one to think that would work, and without having read p. 19 at that. Then when it comes time for a colony to swarm, the swarm will issue and return, perhaps repeating the performance for several days, then the queen will be killed, a virgin will be prevented from taking

her wedding flight, and so become a drone-layer, and the destruction of the colony will be just as certain, although not so speedy, as if it had been brimstoned. How is one to know that swarms with clipped queens are so much more naughty in their conduct than swarms with queen-traps? Has some one learned it by actually trying the two side by side? I never had much experience with queen-traps, but I've had quite a bit with caged queens, and the trouble with their swarms was greater than with clipped queens allowed to hop out of the hives. Possibly it was reasoned out. Well, tell us the reason why a swarm should act any worse with its queen hopping about than with its queen in a trap. When the swarm issues, do you really think the bees know whether their queen is on the ground or in a trap? Certainly they can't know any thing about it without going back to the hive; and in any case where a swarm went back to its own hive I never knew it to trouble further by going to other hives or uniting with other swarms.

How much ventilation, Mr. Editor, is shut off when a queen-trap is applied? I suspect that at least one-half is always shut off, and in some cases four-fifths. Don't you believe that loss of ventilation is a very serious objection to traps? On the whole, would you advise a beginner that it is better to trust to traps than to clipping?

P. S.—A certain inquisitive person not far from my elbow says: "Do you think Ernest keeps traps on his hives? I wish you'd ask him how many traps he keeps on them."

Marengo, Ill.

[Dr. Miller asks us how much ventilation is shut off when the queen-trap is applied. We do not know; but not much, we suspect. As we figure, the perforated metal or bars in the trap have four times the area of passage of the average ⅜ in. deep entrance, or twice the area of ⅞ deep. The wire excluder would form less of an obstruction to ventilation than the perforated metal — how much we do not believe any one can positively determine.

In answer to his last question, we would say that a good deal depends on conditions. If we were running for the production of honey—well, we will state our position after our correspondents close the discussion. Our own opinion at this time would be premature. Some, accepting the opinion of the editor as final, might not give much weight to the opinion of one or the other of the correspondents.

In answer to the postscript we may say that we have traps on many of our hives in all of our yards, not to catch swarms, but to restrain and kill impure or undesirable drones. As a matter of fact, in a queen-breeding apiary one ought to use a great many traps, leaving only drones from extra select queens to have the freedom of flight. In this way we are enabled to bring about a selection of drones, and, to a large extent, the control of the male parentage of our bees for business.—Ed.]

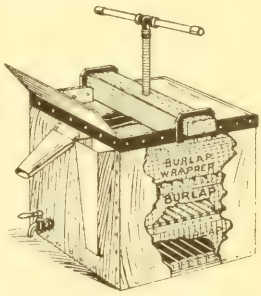
## HOT-WATER SYSTEMS OF WAX-RENDERING.

### Some Comments and Suggestions.

BY OREL L. HERSHISER.

I have noticed Mr. Holtermann's comments on wax-presses, page 210. Having examined the wax-extracting proposition in many repeated experiments, with a view of determining the efficiency of the various methods employed in the production of wax, I respectfully desire to file an exception to Mr. Holtermann's statement that, "in a hot climate, or where wax-rendering can conveniently be left until hot weather, the method of heating the wax in a vessel on the stove and then pressing in a machine not on the stove, is perhaps the cheapest machine and the most rapid and economic method." Mr. Holtermann's "perhaps" may imply a slight doubt in his mind as to whether his statement would exactly fit the facts. True enough, the method will "answer well;" there are many inferior methods. I have profound respect for the opinions of my friend, believing them to be the expression of conscientious convictions; but sometimes conclusions are reached without sufficient data upon which to base them. Many and repeated experiments enable me to make the counter-statement that, all things considered, there is a cheaper, more economic, and convenient method, not only for winter but also for summer wax-extracting.

Referring to the Hershiser wax-press, Mr. Holtermann states that "it takes considerable time to heat the machine and its contents." If it takes a given time to heat a wax-press and its contents of cheeses of comb or slumgum submerged in water, it is obvious that, for the same capacity of tank, or volume for volume, it would take the same time to heat the material in a separate boiler where the slumgum must be dipped over into the press-tank, cheeses formed, and the same submerged in water. This fact is so clear that "he who runs may read." Besides the necessity of performing the operation of dipping the slumgum from the boiler into the press, enough hot water to submerge the cheeses must be dipped into the press-tank, which necessitates the raising to the boiling-point a like amount of cold water to replenish the boiler for melting the next batch of comb. Hence, if there is any advantage in the time required to heat either of such presses and their contents, volume for volume, it lies with the press-and-boiler-combined machine.



Hershiser wax-press.

My press is designed primarily to be used over the fire; but if one really prefers to melt

the comb in one vessel and then dip it over and press in another, such preference surely would not bias him against it, as there is absolutely nothing in its construction that would in anywise hinder him from doing so. In fact, it is as well adapted for use in that way as any press could be. Further, the directions for operating it explicitly state that, "when rendering comb that contains a large percentage of wax, or in converting cappings into wax by the hot-water process, it is advisable to melt the comb or cappings in another boiler and dip out all the wax that can readily be secured," etc. This direction, while strongly suggesting the adaptability of the press for use when not over the fire, does not contemplate the pressing of the cheeses in any other way than in boiling water over the fire. This exception to the directions is made to meet the requirements where the material to be pressed is exceptionally rich in wax, and to enable the making of the cheeses of such thickness as can be most economically pressed. This manner of handling cappings or rich comb avoids unnecessary operations of the press. The hot water may be used as often as is desirable by drawing it off into another vessel to be saved while the extracted cheeses are being removed, and others, that have been made ready while the extracting of the first lot was in progress, replaced in the extractor, when the hot water may be returned. During the short time necessary to empty and refill the extractor the water will lose but little heat.

By keeping the water surrounding the cheeses at the boiling-point while pressing, we facilitate the escape of wax from between them as a result of the motion of the water. By releasing the pressure, after it has been on a short time, there is a marked agitation of the water as though it were boiling violently, which is undoubtedly due to the escape of steam from the interior of the cheeses, generated there in considerable quantity, and confined by reason of the pressure, but which bursts forth when unrestrained. This escaping steam operates to open up the cheeses, and, when thus expanded, they absorb hot water to the limit of their capacity. When pressure is resumed, violent agitation of the water again occurs, which is, perhaps, due to forcing the steam from the interior of the cheeses where it has generated and been held from free escape by them, at a more rapid rate than it would escape without pressure. The hot water, being forced from the cheeses by the pressure and steam, conveys the wax with it, and a few repetitions of pressure, under these conditions, will leave the cheeses almost free from wax. Thus the extracting is more thoroughly and rapidly accomplished than is possible where the pressing is done without the aid of boiling water.

Such injury to wax as obtains from overheating will result whether the comb is boiled in a separate boiler or in the extractor. If the quality of the wax is injured by long-continued heat and boiling, it is necessarily due to the inattention of the operator, no matter what process of cooking and pressing is employed. A hot-water wax-press, possessing easy facilities for drawing off the wax as fast as it accumulates on the surface of the water, enables the careful operator to commence drawing off immediately after the first pressing, and as often thereafter as there is an accumulation worth while.

Theoretically, bringing the temperature of the melted comb slightly above the melting-point of wax is all that is required in extracting; but in practice it is best to bring the material to the boiling-point, as an abundance of heat is preferable. We might have too little heat if we tried to have just enough. Short-time boiling has not been found to be appreciably injurious to wax. My experience has been that wax made by the boiling-water process is not discriminated against by the most extensive comb-foundation makers and other large consumers.

We are able to secure considerable of the last tailings of wax by the hot-water process, not otherwise profitably obtainable. Admit, for the sake of argument, that these last remnants are not obtainable without slightly injuring their quality. If we secure such wax we have something of good value we should not otherwise have had, which we should be as foolish to spurn as we should be if we rejected the lower grades of honey. But the quality need not be injured. At all events, let us have more wisdom than Reynard, and not regard these last remnants as "sour grapes."

Buffalo, N. Y.

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## WAX-RENDERING.

### Further Comments on the Sibbald Wax-press as Discussed by Mr. Holtermann.

BY C. A. HATCH.

I have been looking over GLEANINGS for Feb. 15, and, of course, saw the Sibbald wax-press article by R. F. Holtermann. If you will look up the matter you will find the same thing in principle described in "Langstroth on the Honey-bee," under the head of "The Cary Wax-press," if my memory serves me right.*

The first press I ever made was identical except the racks, which Mr. Sibbald has covered on both sides with screen wire cloth. This I infer from the picture, as nothing is said about it in the article. In my press the racks were used with no covering. I used it by setting it directly on the stove. Mr. Sibbald uses another vessel in which to boil the wax, which I can see would be quite an improvement. He pours water over the press when ready to squeeze—something I never did. He also covers up the press while hot. This, also, I never did. I discarded the arrangement as I used it, on account of the mess in getting the pressed slumgum out of the press ready for a new batch. If there

* We do not find any such reference in Langstroth, either in the new or old editions. We do find a description of the Cary press in the A B C of Bee Culture, old edition.—ED.

was only one batch or filling for the press to be melted, it worked quite well; but to make a 100-lb. lot with it was too slow and messy. His way of working it may have overcome these faults.

I have used the new Root-Hatch press twice, and have just two faults to find with it: It is too small; so, also, is the screw, which is too small, for it springs sidewise too easily. I think there is a chance for improvement over any of our present wax-rendering methods.

Holtermann's caution about wax needing constant watching for fear of boiling over and setting fire to the building is good. I set my house on fire once that way; and if there had not been help right there serious damage would have been done.

Another thing should be mentioned. Mr. Holtermann says, cover the form with cheese-cloth, fold over, and pin. Cheese-cloth as known in the United States will not do at all for such purpose. It is a thin loosely woven cloth of cotton. What Mr. H. means is a stout cloth made of linen, such as our cheese-makers use to cover their vats and curd with before pressing.

Richland Center, Wis.

## UNCAPPING-BOXES.

### Melting the Cappings as Fast as They are Sliced from the Combs; Another Machine for Rapidly Separating the Honey and Wax.

BY J. Y. PETERSON.

The engraving shows my honey and wax extractor for handling cappings; and, as you will see, a capping-table, etc., all complete, for which I have recently applied for a patent.

The cappings and the honey drop through the hole in the top of the table, and fall directly on the tank filled with boiling water, and the mass at once melts and drains off into the receiver, where the honey goes to the bottom and the wax to the top. When the division line reaches a certain level the honey escapes to the main honey-tank into which the honey runs; also from the honey-extractor.

I used one of these machines for extracting several weeks, and it worked perfectly, and at the end of each day I had no cappings, etc., to use up time. On the following morning I always had a perfect cake of wax ready for market after removing it from the tank. It was then necessary only to light the burners and go ahead. Any water that might get into the wax and honey from the uncapping-knife goes out in steam immediately, when it gets on the tank and the honey and wax slowly drain down the one-inch incline. It takes but a very small flame to keep this tank hot. The uncapping-knife is heated in the well for the purpose, which is a part of this tank; any steam that may generate escapes through this, and you always have a hot uncapping-knife, and can here also see when the water is getting low, and pour more in.

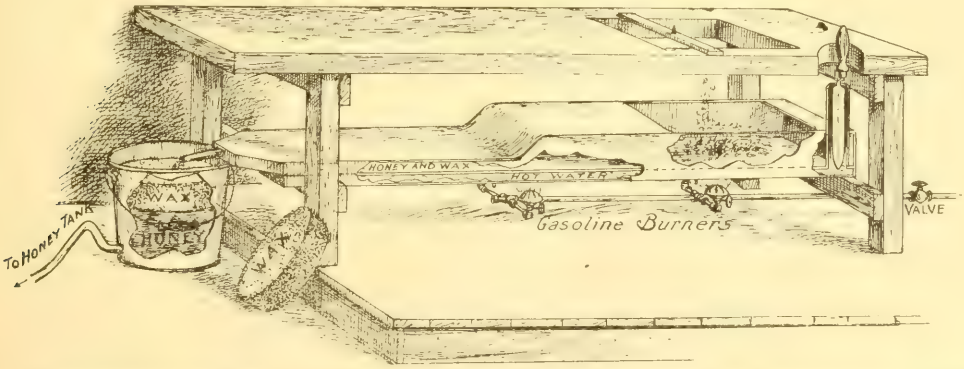
Besides the one I used I made three others for friends, and they used them with equally good results. I used No. 30 galvanized iron for the tank, which is 3 ft. long, 1 inch deep, and perfectly flat, with a rail on sides and back as shown.

The honey from this machine is not in the least colored, as is the case in the old sun extractor, and the wax does not need remelting, etc. You are through, and have a finished job each day. The honey has also a good heavy body. Because of the evaporating process it goes through draining over the tank. Not one particle of wax escapes with the honey, as the honey drains from the extreme bottom of the receiver.

While the sketch is not exact, you can get the idea. The burners should be close to the bottom of the tank. One five-gallon can of gasoline lasted me one season.

San Francisco, Cal.

[There is no question in our mind but that an uncapper embodying the principle (namely, melting the cappings as fast as they are shaved off the combs) is as correct in practice as it is in theory. Those who have tested it pronounce it a success. They further claim that the honey that goes with




The cappings, as fast as they are sliced from the combs, fall into the hot pan, where the wax is melted. The wax and honey run to the end of the pan, and thence into the separator at the end.

the cappings is not affected as to its quality, because it quickly passes over the heated surface that melts the wax and both run into a receptacle where they cool. It is well known that a *quick* heating of honey, even though the temperature be raised above the melting-point of wax, 145 degrees, to prevent granulation for bottling purposes, does not appreciably affect the flavor of the honey, and apparently it would not with a machine of this kind. If any one knows to the contrary, let us hear from him. We know that, in a solar wax-extractor, the honey and wax run together. Because of the slow melting, the flavor of the former is impaired.

The fact that, after a day's uncapping, the honey and the wax will both be in marketable shape, is a strong argument in favor of the new method. The old uncapping-cans or boxes necessarily have to have a large enough capacity to take a day's cappings or more. After a day's work they must be allowed to stand until the cappings drain dry, after which they must be separately handled in a wax-extractor.

Mr. L. E. Mercer's outfit, which we illustrated on page 218 in our issue for Feb. 15, is of very simple design, having the advantage that it allows for the storage of a lot of combs just prior to their being put through the extractor. In this one respect it is superior to the one here illustrated by Mr. Peterson; and it is also superior in that it is simpler in design, and its construction will cost less.

An American patent has just been granted, under date of Jan. 8, to F. R. Beuhne, of Victoria, Australia. On examining the claims it would appear to us that the basic feature of melting the cappings as fast as they are shaved off the combs, by any and all means, has not been covered; but apparently the receptacle for heating the uncapping-knife as shown in the illustration of the Peterson machine is covered; so also a combination of horizontal tubes that are designed to receive and melt the cappings. But such tubes, in our judgment, are not material to the broad principle of melting cappings in some other manner.

Two other men, one in California and the other in Texas, claim to have used the principle for over two years. Just what effect this will have on the Beuhne patent we are unable to say. The situation seems to be somewhat mixed up; and for the present, at least, some time will have to elapse, perhaps, before it is fully determined who owns and controls, if any one does, the broad principle of melting the cappings as fast as they are removed from the combs in some manner *other* than that shown in the Beuhne patent.

We see no reason, however, why any one could not make a machine at the present time on the lines described on page 218, Feb. 15 But any one who makes such a machine would have to hold himself in readiness to pay royalty, possibly, to some one who could establish his rights to priority in the invention.—Ed.]

## TRANSFERRING TO SECTIONAL BROOD-CHAMBER HIVES.

### How to Prevent Swarming, and at the Same Time Force the Bees to Work in the Supers from the Beginning of the Honey-flow.

BY J. E. HAND

"I should like to try a few sectional hives the coming season. How and when can I transfer my bees to these hives with the least loss to the colonies so treated? My bees are in ten-frame Langstroth hives, and I want to produce comb honey."

Mr. Editor, this is a fair sample of many letters that I have received during the past season, and with your permission I will answer them through Gleanings.

#### WHEN TO TRANSFER.

Assuming that your bees are in good condition, and that the hives are well stocked with bees and brood, and that each colony has a good prolific queen, the best time to transfer is at the beginning of the honey-flow from which you expect to get your surplus honey crop; hence it is very necessary that you thoroughly understand your location and the exact time of the blooming of the flowers of every honey-producing plant in your vicinity, and especially those from which your main flow comes, so as to have your dish right side up to catch the honey when it comes.

#### HOW TO TRANSFER.

Our new hives should be in readiness, consisting of two shallow brood-chambers with frames of foundation, and a super filled with sections and foundation. The super should be separated from the brood-apartment by a queen-excluding honey-board. We will now begin work by removing the hive that we wish to transfer from its present stand and place it back and a little to one side (entrance in the same direction), so as to be out of range of the flying bees, and at the same time be handy to operate. In doing this we place the new hive on the stand from which we took the old one. After blowing a little smoke into the entrance of the hive, and rapping on it a few times so as to cause the bees to fill their honey-sacs, we will open it and find the queen, and shake her off the comb in front of the new hive, together with the bees that are on the comb with her, letting them run in at the entrance, being sure that the queen is in the new hive.

We will proceed to shake the bees from the remaining combs in like manner, leaving enough bees on the combs and in the hive to care for the brood. We now have our bees and queen in a new hive with full sheets of foundation in both frames and sections. Those the bees will immediately begin to draw out into combs, since the honey-flow is already begun. When the bees in the new hive have commenced work nicely on the foundation, say in 48 hours after transferring, we will remove the bottom brood chamber,

shaking the bees out in front of the new hive. We now have our colony in one shallow brood-section, with a section-super above, and separated from it by a queen-excluder. This is allowed for a few days only, or until the bees get well at work in the sections, when it will be removed.

In this way we force the bees to begin work in the sections at once, and at the very beginning of the honey-flow, and not only get *all* the honey in the sections, but at the same time do away with all swarming. We gave the two brood-sections at first to keep the bees from swarming out, which they are quite apt to do if hived directly into a contracted brood-chamber.

Having our bees nicely at work in the sections we will give them the brood-section that we took away, placing it at the bottom as before, and the work in the sections will not be in the least slackened by adding this room at the bottom of the brood-chamber.

In two or three days after transferring we will place the old hive close up beside the new one, with its entrance in the same direction, where we will leave it for a week or more, when it may be removed to a new stand and allowed to build up for winter to be treated in the same way another season.

Or if the hives and combs are old it is allowed to remain beside the new hive for 21 days, or until the brood has all hatched out, when the bees may be shaken down in front of the new hive, and the now empty combs be rendered into wax. In either case the bees returning upon removing the old hive will reinforce the new colony, thus keeping it in excellent condition for work in the supers.

This is known as the Heddon system of modern transferring, and was given to the bee keeping public some 25 years ago. It is also used and recommended as a means of swarm control when working for comb honey, and for a fairly good location with a sharp honey-flow it will give excellent results.

No matter what kind of hive your bees are in, you can in this way force them to begin work in the sections at the very beginning of the honey-flow. However, it is not a complete success unless used in connection with the sectional hive, for which the system was originally intended.

Expansion and contraction are important factors in successful comb-honey production —expansion up to the time of the main honey-flow, so as to get a strong force of workers, and then contraction in a new hive, so as to force the bees to enter the sections at the very beginning of the honey-flow, and at the same time do away with swarming. In this way box hives and odd-sized hives may be worked year after year, each season driving the bees into contracted hives as above described, thus securing a fine crop of comb honey. We do not advise the destroying of good hives and combs simply because they are of an odd size, for these hives are often good wintering and breeding hives.

Birmingham, Ohio.

## BOTTOM STARTERS IN SECTIONS.

### The Advantage of Full Sheets of Foundation; Producing Both Comb and Extracted Honey in the Same Super.

BY F. W. HALL.

I never put a section on a colony unless it contains a full sheet and also a bottom starter of extra-thin super foundation. Any thing less than a full sheet proves to be false economy.

Full sheets are not as good without the bottom starter; and the quickest way to be convinced is to try sections with and without, side by side in the same super—not only one super full, but hundreds of them; and long before the first twelve supers are taken off no magnifying-glass will be needed to tell the difference.

Full sheets of extra-thin foundation will stretch or sag with the warmth and weight of the bees from $\frac{1}{16}$ to $\frac{1}{8}$ inch or more, which brings the bottom and top starter almost if not quite together, resulting practically in a straight full sheet in the section. If simply one full sheet is used, too many will not be attached to the bottom of the section all the way across in a light colony or during a light honey-flow. On the other hand, if the foundation reaches to the bottom at first, the sag causes it to buckle, and the wrinkle at the bottom is far too often finished in an unsightly manner, and sometimes not finished at all. On the concave side the cells keep running closer together, and an occasional cell will be left out, and still it will not be greatly noticed; but on the convex side, the cells get wider and wider until the limit of capillary attraction is reached for holding the honey in the cells, and the bees are then obliged to build out the bottoms, and finally cap the cells on the sides next above, giving the lower part of the comb an appearance not at all attractive.

I am sure I have struck upon something good in a bottom-starter fastener, and it costs nothing save a little ingenuity in applying it to the foundation-fastener already in use. For full description see page 552 of the May 15th issue for 1905.

For four or five years I have been using, in a limited way, the plan of producing both comb and extracted honey on the same hive, in the same super, and at the same time. Small cleats, $\frac{1}{4}$ inch thick by $\frac{1}{2}$ inch wide and 4 inches long, are nailed on the inside ends of a ten-frame super, at such point as will admit two thin wedging boards, and five section-holders with separators. The super will then be ready for 20 sections and two extracting-frames, one on each side. This does away entirely with those outside unfinished sections so often found when one is working for a fancy grade of comb honey. The sections should be removed as soon as fully completed, and the unfinished ones put together in two or three grades, placed in these comb and extracting supers, and put over a strong colony to be finished as quick-

ly as possible. I like to take off all sections at the close of the white-clover honey-flow and extract all sections not over one-half or two-thirds full, and feed it back to the colonies on which the sections nearly finished have been congregated. Some uncapping might be done to advantage before placing these sections back on the hives to be sure of having all the combs down to one level.

Hull, Iowa.

[We believe our correspondent is right in using extra-thin instead of thin foundation. The less of midrib we have in our comb honey the better.—Ed.]

## EIGHT QUEENS IN ONE BOX HIVE.

### How the Bees Keep the Queens Apart

BY M. D. TYLER.

Last spring a neighbor asked me to see to his bees, as he had two swarms that came from one hive. He had put them into boxes, and had nailed them up so that they could not get out. He wanted me to transfer them into new hives. He also wanted me to see to the old colony, which was in a two-story hive. This last was full of bees and brood to the top, and yet the hive had but three frames in it. It was hard to get the hive apart, and then fit the combs in frames, but I did. In taking out the combs I discovered two queens on one card of brood, so I set that comb to one side and watched them while I worked. I soon discovered two more queens, and I put a couple of them in a tumbler so I could take them home. It was not half a minute before one of those queens was killed by the other. This goes to show that the workers keep the queens apart. If the bees are taken off from a card of brood, leaving the queens alone, they will come together like two bulldogs, and fight to the death. It takes only a quarter of a minute. When I cleaned out the upper story I found two more queens, which, with the two that swarmed out the day before, made eight laying queens in the one hive.

It is all "bosh" to think that two queens can exist in one hive in peace unless they are protected by the bees or by some other means. It is the workers that keep the queens apart.

I have worked with bees for sixty years. A few years ago I transferred 400 colonies for farmers from old box hives into new ones in one season. I think I am the champion transferer.

Seville, O.

[Our correspondent is a veteran in the business of selling honey. He is never so delighted as when he can get a crowd of men to arguing with him and asking him questions about bees, for he says at such a time he always manages to sell a good lot of honey to each one.

It is a good plan for one who understands transferring to make a business of doing it for his neighbors who may not have had much experience.—Ed.]

## EXTRACTED-HONEY PRODUCTION.

### The Locality and Methods Whereby Large Quantities of a Superior Article may be Secured in a Leisurely Fashion at a Low Cost; How to Choose a Raspberry Location.

BY W. Z HUTCHINSON.

[A short time ago Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, while visiting us, asked if we would like to get a series of articles detailing his experience in producing extracted honey in Northern Michigan. He added that he had secured a large number of fine photos, and if we cared to have the set he would go to work immediately on the copy and submit it for our approval. He remarked that, while it might seem a little odd, perhaps, for the editor of one paper to write for another, yet, owing to a lack of space in his own journal, he had been able to give only a brief account of his work, and he thought that perhaps Gleanings would like a more complete write-up, brought clear up to date. We assured him that we should be most happy to have him furnish us the manuscript and the photos, as we were sure the former would be very interesting reading; and the latter—well, the editor of the *Bee-keepers' Review* knows how to make them. The articles have been received, and, as might be expected, they are interesting as well as valuable—"good stuff" a newspaper editor would say. We take pleasure, therefore, in presenting the first installment.

The photos in this issue represent, apparently, only a dreary waste—briers and dead trees—indicative of the fact that many a desert or bleak mountain-side contains, buried beneath it, untold wealth. In this case the wealth is in sight, but it takes a trained eye to see it. There are thousands of places in the United States to-day which are supposed to be only barren wastes, useful neither to man nor beast. But how often have we seen those same wastes yield up their treasures (honey) to some bright genius who had eyes to see what others could not. Mr. Hutchinson tells how to judge a raspberry location.—Ed.]

The time was when extracted honey was of slow sale at a low price. It may not be worth while here to discuss the reasons *why*, but we can all rejoice in the *fact* that extracted honey has become a staple product, with sure and quick sales at a fair price. With the right kind of locality, sufficient number of colonies, and the adoption of proper methods, an experienced bee-keeper can make a good living—yes, more than that—put money in the bank by producing extracted honey and nothing else.

Every successful bee-keeper eventually develops a system peculiarly fitted to himself and his environments. While I have been managing out-apiaries and producing honey on a large scale for only two years, I have developed a system that seems to me unusually good—one that might be followed with profit in many parts of the country. I have written about it in the *Review* in a desultory way, but now I propose to put it together in a consecutive way, and lay it before the larger class of readers that I can reach through these columns.

#### FINDING THE LOCATION—SOMETHING ABOUT NORTHERN MICHIGAN.

The foundation of success in bee-keeping specialty is the location. Unless a man has the proper location he had better relinquish bee-keeping as a specialty or else seek the right location. I did the latter. I went to the wild red-raspberry region of Northern Michigan. I think I can safely say that the

wild raspberry never fails to produce honey. It does not winter kill, as does the clover, and its nectar-yielding properties are less affected by the weather. I have seen bees doing quite well working upon it when the weather was so cool that clover would not yield a drop. I have seen the bees continue to work on berries when it was raining quite a little, and had been raining some time. Many of the blossoms are inverted, like little umbrellas, and the water does not get into them.

It might not be worth while to devote so much space to the raspberry regions were it not that new tracts are being continually logged off, thus offering new pastures to new comers. That many are interested in this region, and would gladly go there to take up bee-keeping as a specialty, I know from the numerous letters that come to me asking in regard to the prospects, where to go to find locations, how to find them, etc. To help a man find a good location, where the nectar is never-failing, and he can spread out and establish out-apiaries, and make some money and enjoy life, is fully as important as to show him how to manage his bees after he is rightly located, hence the following paragraphs.

FIG. 1.—HARD-MAPLE FORESTS OF NORTHERN MICHIGAN.

As fast as the timber is lumbered off, red raspberries spring up in myriads, furnishing bee pasturage that is simply incomparable.

### SOME VITAL POINTS IN SELECTING A LOCATION IN NORTHERN MICHIGAN.

Let no one imagine that *all* of Northern Michigan is covered with raspberries, the same as some other portions are covered with clover. This portion of Michigan is laid off in "streaks," so far as timber and soil are concerned. Pine barrens form a large share of this northern country; and more dreary, desolate, God-forsaken spots it has never been my lot to behold—nothing left but pine stumps and logs blackened by fire; and yet, in spite of it all, there is a sort of weird, lonely fascination about these pine plains. Occasionally there is an old pinery upon which raspberries grow, but they are short, stunted, and scattering, and of little value as honey-producers.

After driving for miles through a dreary waste of sand, pine stumps, and logs, there will come a change, sometimes within a few rods, to the most magnificent forest of beech, maple, elm, etc.; and it is in these hard-timbered belts that we must look for the honey-yielding berries. When these tracts of hard

timber have been lumbered off, there springs up a growth of the wild red raspberry that is simply incomparable as a honey-producer.

Having found such a hard-timbered tract, there are several points to be considered in the selection of a site for an apiary. First, an old-settled country is of no value unless lumbering is going on in that neighborhood, because the farmers cut the timber off slick and clean, and plow up the ground. Of course, there will be a fringe of berries around the edges of clearings, along fences, etc., and a few colonies would probably find plenty of honey; but the man who is going to bring in several hundreds of colonies must find some place back away from the cleared

FIG. 2.—THE WILD RED RASPBERRY IN ALL ITS GLORY.
The timber has been lumbered off, or cut for furnace wood, and the berries have completely covered the ground.

land; or, at least, where the hard timber has not been lumbered off, and has not yet been sold for farms.

Still another point: it is not until land has been lumbered some two or three years that the berries are sufficient in number or growth to be valuable as honey-producers.

If fire runs through and burns up the berries they seldom come in again and grow so rank as when the brush, tree-tops, logs, etc., acted as a sort of mulch. After the sawlogs have been cut on a tract, there is more or less small timber left, and this shades the ground to a great extent, and greatly improves the raspberry pasturage — promotes a more rank growth, and prolongs the time of bloom. Let the location be what it may, it is only a question of time when the undergrowth will come up and run out the berries.

It will be seen that raspberries are not a permanent source of supply, like clover A large share of Northern Michigan is still covered with hard timber, but it is being lumbered off at a great rate, and a man located there would be able, by shifting about, to have apiaries in exactly the right kind of locations. I have seen locations that have passed their prime, others that were right in their "glory," so to speak, and still others that were lumbered off only last winter. In some parts of Northern Michigan, lumbermen put out systems of narrow-gauge railroads, with numerous branches, in the hard-timbered districts, and all along these roads are choppings of different degrees of "ripeness."

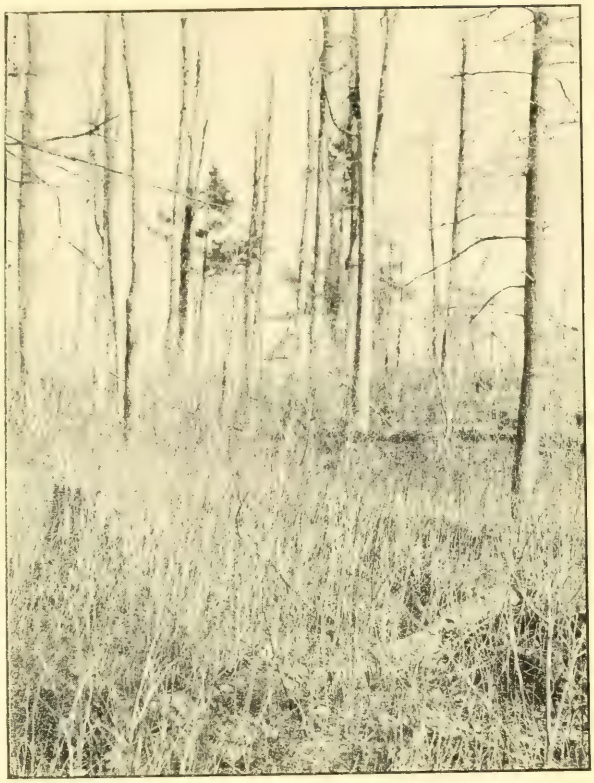


FIG. 3.—EXCELLENT RASPBERRY PASTURAGE.
This area has not been burned over; scattering trees furnishing shade, and logs and brush act as a mulch.

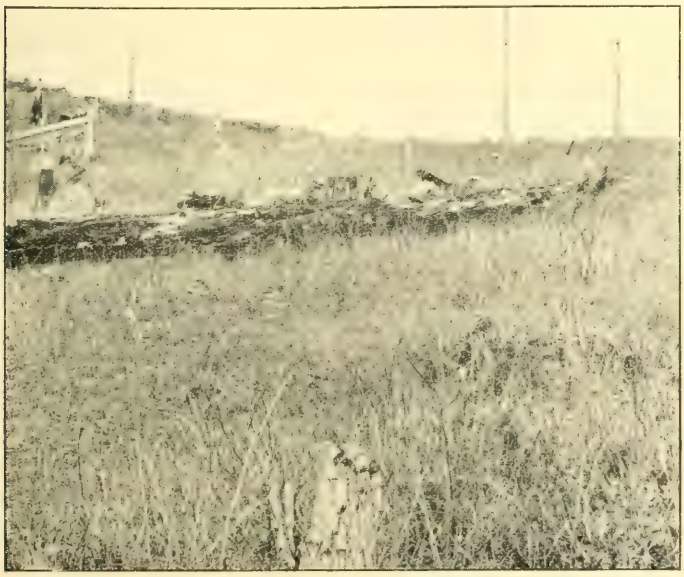


FIG. 4.—POOR RASPBERRY PASTURAGE.
The ground has been burned over—no shade.

But these choppings are back away from civilization, and the only buildings that are available are log shanties at deserted lumber-camps, most of which have been robbed of their roofs for the sake of getting the lumber. The man who goes into Northern Michigan to produce raspberry honey must expect to "rough it" to some extent, and

A GLIMPSE OF THE FIVE ACRES OF CELERY NEAR BRADENTOWN, FLORIDA, GROWN THE FIRST YEAR ON WILD LAND; THE OWNER, MR. C. L. LATTIMER, REFUSED $5000 FOR THE CROP JUST BEFORE HARVESTING.

live in a shanty, unless he buys or builds a good house; and this is something he ought not to do until he has been there a year or two, and become familiar with the country, so as to choose wisely in reference to future pasturage.

As I have already said, the foundation of all is the *location*—one with an abundance of berries, and around this must cluster all of the other conditions. The most desirable pasture may not be the most desirable place in which to live; but I doubt if any location will be so inaccessible that the bee-keeper won't be able to get his honey out to market if he secures a crop. On the other hand, this new country has its compensations: The streams are all stocked with speckled trout; the pine barrens are often purple with the ripening huckleberries; in August and September a man can eat his fill three times a day of the great, luscious, shining, spicy wild blackberries that have grown in the shade; he can tap the giant maples and make sugar in the spring; he can rejoice in a wood fire simply by cutting the wood; and, if inclined to be a sportsman, he will find plenty of opportunity for hunting or trapping. To the right man, there is a fascination about a region where still lingers some of Nature's wildness.

But, to return: How can a man find a desirable location? This is the question that is asked me the most often of any. There is only one way, and that is to go into this region and *hunt for it.* Very little can be depended upon what settlers say, unless they are bee-keepers, as they seem to have no conception of what is needed. To illustrate: One man who had lived in that part of the State several years told my brother and myself, with great enthusiasm, of a tract, on the banks of the Manistee, where, for miles and miles, there was a perfect sea of raspberries. As it happened, we had that day driven through that *very spot.* The ground had been burned over, and, while there was quite a dense growth, it was mostly *black*berries, with an occasional patch of short, scattering raspberries. We were disappointed so many times, after driving miles to see some promised land, that we ceased to put any dependence whatever upon what somebody told us. As I have said, these men are not bee-keepers, and don't understand all of the points as I have given them in these pages, and are almost certain to be misled.

The best time to look for a raspberry location is in the spring, after the snow has gone, and before the trees and bushes have put forth their leaves. The berry-canes have a ruddy, brown, or purple color, very easily distinguished, at a long distance, from other brush. After the berries and other bushes

HARVESTING THE CROP AND CRATING IT UP READY TO BE SHIPPED TO NORTHERN CITIES. SEE PAGE 511, LAST ISSUE.

have put on their robes of green, all look alike at even a few rods.

*To be continued.*

## SWARMING.

### Some Instances to Show that Bees Often Select a New Location Before Leaving the Hive.

BY L. B. SMITH.

We have had it proven to our own satisfaction many times that bees often select a location before swarming. Away back in the 80's, we were in the woods and saw bees going in and out of a knot-hole some 15 feet up in a tree. My first thought was that I had found a bee-tree. After observing more closely I discovered that it was only bees out selecting a place for their future home, for there were more or less bees around all the trees near that showed any signs of being hollow. From their actions it was easy to see they were searching for a cavity for their future home. I watched them with much interest for several hours toward the middle of the day; but they seemed to pay little attention to any of the trees except the first one mentioned. Around this they greatly increased in numbers until it almost seemed as if a small swarm were in and around this tree. During the time, I went to the house and told my wife to keep a close watch on a certain colony I knew was preparing to swarm. I was sure they were my bees that were so busily engaged at this tree. Pretty soon I heard my wife calling, "The bees are swarming!" I noticed, however, the bees about the tree had become very much less in numbers. A very few were to be seen at the tree just then.

I hastened to the house to watch the swarm to see what the result would be. They were pretty well out of the hive when I reached the house, and had started to cluster. Not over two-thirds of the swarm ever clustered at all when they broke cluster and made a direct line for the tree where I had been watching them for hours, and went directly into it.

At another time a neighbor called on me, saying he had found a bee-tree, and wanted to save the bees. They were working strong, as he thought. After a good many hard blows with his ax he felled the tree, and, to his utter astonishment, no bees were in it, and no signs of comb or any thing that showed that bees had ever occupied the tree. Before long he saw a big negro coming on a dead run through the brush, rattling a bell for all it was worth; and about the same time, he heard the roaring of a swarm of bees, and very soon they were hovering about the spot where the tree had stood. After circling around for a short time the bees

HAND-CAR FOR MOVING EXTRACTING-COMBS INTO THE HONEY-HOUSE.

clustered on a bush near where the tree stood, perhaps much astonished because their newly found home was destroyed.

These, with many other instances I could relate, convince me that bees often select a home before they swarm. I do not make the claim that they always do.

Rescue, Texas.

## A HAND-CAR IN AN APIARY.

### How to Move Hives and Supplies with the Least Possible Amount of Labor.

BY F. H. CYRENIUS.

The engraving shows a quick method of transporting hives, supers, etc., to and from the honey-house. The hives must occupy a narrow space about 15×100 ft., through the center of which runs a wooden track. The car holds six hives on the platform, and as many more piled on top as desired.

In extracting honey and taking off supers a sheet or spread that covers up the whole load is used to prevent robbing. The tracks are so arranged that the car runs directly into the house, where the load is uncovered and removed to suit convenience. I find this is a great labor-saver.

Oswego, N. Y.

[Our older readers who joined the GLEANINGS family about the time it first started will recall that A. I. Root, in his first bee-yard from which he gleaned the inspiration to start this journal, had a short railway running through it like this. We can subscribe to all the statements made by our correspondent. This arrangement ought not to be very expensive, with the exception, perhaps, of the car. But if light cast-iron wheels were made at a foundry, the rest of the car could be assembled from picked-up material, with the help, possibly, of a blacksmith if necessary.

The track would be a simple affair. Hardwood rails could be used, made from well-dried timber that would not warp, and tied together at intervals. If made in sections, the location of the track could be easily changed, or the whole thing taken up at the end of the season and stored away in some sheltered place until the following spring.—ED.]

## A SWARM LATE IN THE FALL THAT BUILT COMB IN THE OPEN AIR.

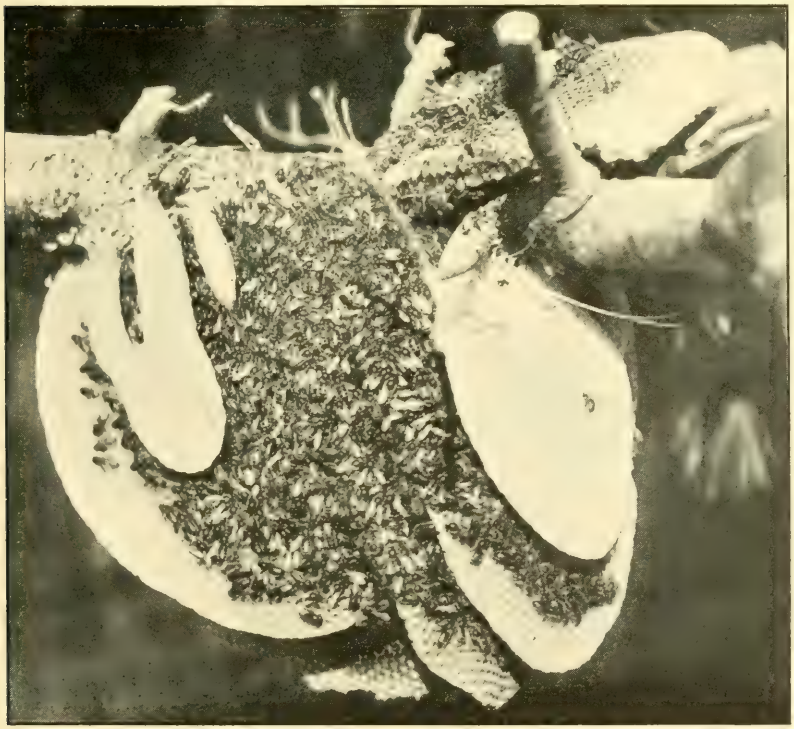
BY A. D. STONEMAN.

This swarm of bees was discovered late in the fall, alighting on the limb of a pine-tree. Some two weeks after that they were still there, as this picture shows. The combs were built 30 feet from the ground, on quite a large limb, and about 15 or 18 feet from the body of the tree. On quite a cool frosty morning I got an extension ladder, and, with the help of my boy, put it in position, tying the top securely. Then with my smoker in one hand and a saw in the other I went up. It was ticklish business standing on the two top rounds, and trying to do any thing; but I found that the bees were very quiet, so I did not use the smoker. The bees were located on the limb where half a dozen small

limbs branched out, so by holding on to the big limb with my left hand I sawed off all the small ones; then taking hold of one of the ends of the small limbs with my right hand I sawed the large limb off with my left. By this time I had shaken the bees up pretty well, and many of them were flying around quite lively; but I held the branch at arm's length until they were all clustered again, and then started down, arriving at the bottom safely. I had to carry them about a quarter of a mile right through town, and every one who saw me coming with those bees got out of the way. I told them, however, that I had the bees hypnotized so that they would sting no one, and they did not.

When I reached home I got an empty hive and put them in it; but as the limbs were not cut short enough I had to let them rest on the edge of the hive, for by that time the weather was getting quite warm, and the bees were getting uneasy. I laid an oilcloth over them until the next morning, when I sawed the limbs off so that I could hang them in the hive by nailing two small cleats on the side. They would have been short of feed, as they had but very little honey, so I fed them syrup made of candy and sugar. To-day I have them in the cellar all right, as I put them in before the weather became too cold.

Quasqueton, Iowa, Jan. 1.



COMB BUILT IN THE OPEN AIR LATE IN THE FALL.

The swarm alighted on a limb of a pine-tree and built comb, even though the weather was beginning to get cold. One piece of comb broke off before the picture was taken, so it was laid on top.

## BREEDING OF QUEENS.

**Queens from Swarm Cells Perpetuate Swarming; Cells should be Cared for by a Strong Colony; a Colony Long Queenless Stores Much Pollen in Brood-frames.**

BY WM. H. LONGSDORF.

I for one can most heartily indorse Mr. Alexander's recommendation to rear queens from a queen-mother only at a time when she is not under the swarming impulse, page 209. However, I want the queen larvæ *fed and cared for* in a colony that is as nearly in a swarming condition as possible—that is, with an abundance of bees, a good supply of sealed brood and honey, a comparatively small amount of unsealed larvæ and eggs, and a somewhat crowded condition. I use a single queen-excluding division-board in the brood-chamber, with the queen-cells on one side, and queen, preferably an old one, on the other. Queenless bees are not so good for rearing queens, as they are usually very poor feeders and will nearly always select a few cells for feeding, and somewhat neglect the others, producing many poor queens

I have reared nearly all of my queens for the last ten years from selected queen mothers on the Doolittle plan. I did it at first for the simple purpose of getting my bees Italianized by buying a select queen and rearing all my queens from her, the next year doing the same; and then not being satisfied with the qualities of all my bees I selected from the best for breeders, rearing all my queens from them. I found so many advantages in this plan that I have followed it up to the present.

But for a considerable time I did not think of what influence this method might have on their swarming propensity. I soon began to notice, however, that the colonies that swarmed with the hive only half full of bees and

brood, and refused to yield to my usual methods to prevent persistent swarming, were those that had managed in some way to rear their own queen from swarming - cells. With my methods these colonies are easily located, as I nearly always introduce laying queens to queenless colonies and those which have cast a swarm; and the laying queens are always clipped before introduction. If a virgin is introduced the records show it.

One of the first things to show after using select queens only, for breeders, is the more uniform color of the drones and gentleness in the bees as Mr. Alexander has said. Good wintering qualities I also attribute in part to the quieter disposition of bees from queens reared from non-swarming mothers, and also from the fact that I do not allow the bees to remain without a laying queen long enough to get the brood-frames filled up with pollen and honey, and *sealed up*. This is quite sure to cause trouble in wintering, and also spoils the comb honey produced on the hive after the queen commences to lay, by having the cappings removed and built into the new comb in the sections, and the honey filled behind it. This will not be the case if the honey in the brood-combs is not yet sealed over. The honey will be carried up, and new comb built, and it will be as nice as though built over new brood-combs, no matter how old or black the brood-combs may be.

Another important consideration in the control of swarming is prolific queens which will produce large strong colonies; for it is the medium-sized colonies that are the most likely to swarm—those that will just barely fill the brood-chamber at the time they get it filled with brood and honey. A strong colony will have a large force to put into the supers as soon as the honey comes in, and will clean the honey out of the brood-combs so the queen will have plenty of room. I have very frequently had colonies produce from five to six ten-frame-hive comb-supers without trying to swarm. I rear queens for my own use only, and not to sell.

Arkansaw, Wis.

REMOVING HONEY FROM THE ROOF OF A BUILDING.

## REMOVING HONEY FROM THE ROOF OF A BUILDING.

BY M. L. BREWER.

In the footnote to my article, p. 1326, Oct. 15, you speak of the use of the bee-escape to trap the bees out and into a hive, the entrance of which is close by. The entrances to the cavities are almost universally in such places as would make it next to impossible to station a hive, as the accompanying illustration will show. Four days ago, Oct. 14, I removed the shingles that I relaid at the visit described in the article referred to, and duplicated the former amount, or better. Only the upper part of the wagon shows in

the picture, the high boards on the opposite side being used as a support for the ladder.

I always use a long apron to protect my clothing from getting smeared with the honey, and in it are pockets for my tools and supplies, such as hammer, chisel, putty-knife (which is indispensable), matches, and extra smoker fuel. The smoker and dishpan are visible, with honey showing in the pan

This same pan (and a large one it is), with a good-sized butter-bowl and a large meat-platter were all rounded full of honey, with enough left to fill a medium breadpan.

The entrance was under the shingles just at the drip to the water-lead. Such work is hard, and straining on the muscles, and is done only by a crank of all cranks — a bee-crank.

Philo, Ill.

## THE BEE-MOTH.

### Their Ravages and their Eradication by Means of the Deadly Cyanide of Potassium.

BY PROF. H. A. SURFACE,
*State Zoologist of Pennsylvania.*

To many bee-keepers the bee-moth is known as the worst enemy. Perhaps we should say the bee-moths, because there are two species of these pests, the one of which is not half the size of the other, and is consequently known as the lesser wax-moth or lesser bee-moth. Practically all bee-keepers know that in the worm (or larval) stage these pests bore through the honey-comb, devouring it, living within the tubular silken cases, and often eating away the capping or waxy covering of the young bees in the comb in such a way as to uncap them and leave rows of young bees with their heads visible in the cells. This is one of the causes of what is sometimes known as "bald-headed brood." There are other causes of this, such as chilling or insufficient food; but the larva of the bee-moth is one of the chief. When this pest becomes grown it crawls into some protected spot, covers itself with a silken cocoon, and in the course of a few days (depending upon the temperature) transforms into a winged moth, commonly known as a "miller," and enters the hives or sections of honey-comb at any possible place, seeking comb on which to lay its eggs. In the course of a few days these eggs hatch, and the larva or worm repeats the life cycle.

The best possible treatment for the bee-moth in the hive is to keep in the hive a full and strong strain or race of bees that will look after the moth and clean out the worms if these should start. Moths always attack weak hives in preference to strong. It is important that the entrance of the hive be not too large, especially at night, when the winged moth is flying, to be properly guarded by the bees. It is likewise important that there be no fragments of comb around the entrance of the hive to attract the moths in unusual numbers. All fragments or pieces of comb, however large or small, should be gathered into a receptacle for the purpose, and kept so tightly closed that no insect can enter it. As often as once a week, during the summer, melt all rejected pieces of comb into beeswax. Leave no deserted hive with comb for the moth to inhabit and become a source of infestation to the entire apiary. When combs are to be stored it is a good plan to put them into an empty hive-body and place this above a strong colony of bees or close it so tightly with strips of paper pasted over the cracks that even an ant can not enter.

The best possible means of avoiding the ravages of the bee-moth is by fumigation. We have recently had occasion to fumigate combs and honey. This produced no evil effects whatever, and certainly killed every bee-moth in all its stages, whether it was an egg, a larva, a pupa, or a winged moth. This fumigation is possible in the hands of a novice; but he should be very careful to follow instructions. Place all honey and comb, supposed to be infested, in a room, box, barrel, or bin that is air-tight. Determine the cubic contents of this vessel by multiplying its length, breadth, and height, and for each 100 cubic feet of space use the following formula: Cyanide of potassium, 98 per cent pure; 1 ounce (by weight); sulphuric acid, 1 83 specific gravity, 2 ounces (by liquid measure); water, 4 ounces (by liquid measure).

Compute and weigh or measure the amount of material to be used. The cyanide of potassium is sold in hard white lumps resembling alum. Determine the amount of this to be used in the vessel or room which is to be fumigated. Put the proper amount into a paper sack and put it on a stand or on the floor near the vessel which is to hold the liquids. Put a stone jar on the floor in the middle of the room or vessel, using one that is at least twice or thrice as large as will be necessary to hold the liquids that are to be placed in it. Into this jar pour four liquid ounces of water, or one-fourth pint for each one hundred cubic feet of space to be fumigated. Into the water pour two ounces of sulphuric acid for each one hundred cubic feet, or half as much of this as of the water. Both acid and water should be measured by the liquid measure rather than by weight. It is important that the acid be the thick or strong sulphuric acid, sold commercially with a specific gravity of 1.83 per cent. Drop into the acid and water the paper sack containing the cyanide of potassium, and close the vessel or room instantly. Do not remain a fraction of a second in the room or bin after the cyanide is dropped into the acid and water. There is no danger whatever until this combination is made; but as soon as this is done, fumes are given off which are deadly and instantly poisonous to all insects and higher forms of animal life, as well as to delicate plants, but will not injure metal work, varnish, cloth fabrics, seeds, nor food products of any kind. Honey is not tainted nor poisoned by being fumigated by this material, as we proved by several ex-

periments last summer. If there be domesticated animals of any kind in or adjacent to the room in which the fumigation is to take place they should be removed before it is undertaken. Also the first step in this process should be to see that all windows and doors, excepting the one through which the operator is to escape, are made air-tight, and that all cracks are stopped tightly with wet paper. Preliminary arrangements should be made for tightly closing all crevices in the vessel or room in which the fumigation is to be made, if this be not a box or barrel. A large hogshead is excellent for this process, and it is sufficient to have two wet blankets present and spread them over the vessel, having boards ready to lay on top of the blankets to hold them in place All arrangements for closing the vessel or room should be made before the cyanide is dropped into the acid.

This cyanide is the deadly prussic acid of which many have heard, and the fumes of which are known as hydrocyanic-acid gas. If the fumigation be in a room in which any article is forgotten, let it alone. Do not enter for two hours, after which time air the room properly by opening from the outside before entering it, because to enter the room before it has been properly ventilated or aired, or to fill the lungs once with the deadly gas, would mean instant death; but at the same time this is no reason why any intelligent person should not avail himself of the benefits of it. Let the vessel or room remain tightly closed for at least two hours or longer, and then open it and give it an opportunity to become well aired before entering it for further work. If comb or honey be stored in close hives, supers, or vessels a room to be fumigated, these hives or supers should be opened before fumigation so that the deadly gas can penetrate them and kill the pests.

After having fumigated comb or honey in this way, the material can be stored in any tightly closed vessel, such as a box or empty hive-body, and can be kept for an indefinite length of time, even for years, without being attacked by the bee-worm or bee-moth, if tightly closed. It is important in storing, first, that the worms and eggs be killed by the fumigation; and, second, that they be stored in vessels that are so tightly closed as to prevent the moth from entering and laying its eggs. Remember that the lesser bee-moth is a very small individual, and can go through a small crack. Strips of paper should be pasted over cracks in boxes, hives, and supers, if piled upon one another, generally fit together so tightly that no special provision for sealing the cracks between them is necessary. Common window-screen wire is sufficient protection to comb or honey from the attacks of the bee-moths as long as may be needed. The advantage of this method of fumigation over the old-fashioned process of "sulphuring" is the ease, rapidity, and absence of danger of fire. The evil effects of inhaling the gas can be avoided with less trouble than would be necessary in avoiding fire from the burning sulphur. We repeat the statement, that honey is not injured in flavor, color, nor otherwise, by this fumigation process. We have tried it several times.

Harrisburg, Pa.

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## SPRING FEEDING.

### The Opinions of Some of the Authors of Text-books on the Subject; Feeding for Stimulating in the Spring Considered Profitable.

BY E. W. ALEXANDER.

As I happen to be a defendant in this matter of spring feeding, as given in the March 1st and April 15th GLEANINGS, I feel it a duty I owe to myself and friends to call the attention of the readers of this journal to a few established facts along this line. We will now go to our text-books and see what they say on this subject. I will endeavor to be as brief as possible.

Commencing with Prof. Cook's Manual of the Apiary, turn to page 159, where he, in speaking of stimulative feeding, says, "As already stated, it is only when the worker bees are storing that the queen deposits to the full extent of her capability, and that brood-rearing is at its height. In fact, when storing ceases, general indolence characterizes the hive; hence if we would achieve the best success we must keep the workers active, even before gathering commences, as also in the interims of honey-secretion by the flowers; and to do this we must feed sparingly before the advent of bloom in the spring, and whenever the neuters are forced to idleness during any part of the season by the absence of honey-producing flowers. For a number of years I have tried experiments in this direction by feeding a portion of my colonies early in the season, and in the intervals of honey-gathering, and always with marked results in favor of the practice. Every apiarist—whether novice or veteran, will receive ample reward by practicing stimulative feeding early in the season, then his hives at dawn of the white-clover era will be redundant with bees well filled with brood, and in just the trim to receive a bountiful harvest of this most delicious nectar."

Now we will see what A. I. Root says upon this subject. We will take the first edition of his A B C of Bee Culture, and turn to page 75. Where he speaks of a drouth cutting short the supply of nectar he says: "Many of the queens stopped laying entirely. At this stage a little feed during the night would start the queens laying wonderfully, and the fed colony would rush to the fields for pollen in a way that demonstrated at once that feeding at such a time was a very profitable investment if one wished to build up weak stocks and nuclei. A stock that had been fed a half-teacupful only would go out for pollen an hour earlier than the others, and would bring in double the quantity. A still smaller quantity will set them to building out foundation most beautifully; and I never in my life saw the work in the hive go on so

satisfactorily as it did during the hot dry dusty days under the influence of a very moderate amount of feeding during the night."

And then, again, on page 77, he says, "And after feeding perhaps a ton of the grape sugar I am prepared to say that it is a decided success for stimulating brood-rearing, for rearing queens, and building up colonies."

We will now take the late Henry Alley's Bee-keeper's Handy Book and see on p. 107 what he said in regard to stimulative feeding:

"When a colony is being fed, the queen commences to deposit eggs more vigorously, and the colony exhibits greater activity than its neighbors that are not stimulated. Feeding for this purpose should not be resorted to until the bees commence to carry in pollen as the effect of the increased activity prior to this time would be injurious. The proper time is to feed at night, and not over half a pound of food should be given at any one time unless the bees are short of stores, and it should be discontinued when honey can be gathered from natural sources. Food for stimulating should be made quite thin with water, say six pounds of sugar and five pints of water, and a small amount of honey to flavor. The water will be utilized by the bees in brood-rearing."

I should advise making the syrup more than half water. I should like also to call your attention to the latest edition of the A B C and X Y Z of Bee Culture, and see what is there said on this subject; and right here let me say that this edition to our bee literature is worth far more than its cost, and should be in the hands of every honey-producer in the land. On page 200 the authors say:

"In getting colonies up to good strength to gather the honey harvest, or induce nuclei, or full colonies for that matter, to cells for the purpose of queen-rearing, the daily feeding of half a pint of syrup should be practiced."

They also say on page 203, in speaking of H. R. Boardman, of East Townsend, Ohio, that he practices a plan which often insures a crop of honey even during poor seasons. "In brief it is this: He feeds all his colonies as soon as it becomes settled warm weather, whether they need stores or not. The syrup is given them slowly to stimulate brood-rearing This feeding is continued clear on to the honey-flow, when, of course, it is discontinued. The result is that the hives are overflowing with bees and brood."

Then still further on the author says, "While it costs considerable to feed bees in this way I believe Mr. Boardman's experience has been such that he feels warranted in continuing it; and then if the year proves to be a good one he will get a tremendous crop of honey. One year when I visited him he had secured a fair-sized yield from each colony, and a poor year at that, while his neighbors round about him did not get any surplus, and all they did get was brood-nestfuls of honey and nothing more"

Father Quinby and his son-in-law, L. C. Root, many years ago were the first to call my attention to the value of stimulative feeding in the spring. They were very enthusiastic on the subject, and advised me to practice it every spring if I expected to make an early increase or secure a nice surplus of clover honey. I think you will find in Quinby's book, "Mysteries of Bee-keeping Explained," something on this subject. I have lost the copy I once had, and therefore can not quote his words. And now while I am in company with these shining lights of apiculture that I have just quoted above, I wish to be put on record as saying that I have practiced spring feeding for over 30 years, and during that period I have fed at least 5000 colonies for the purpose of promoting brood-rearing during the spring, and I am sure that, all things considered, it has been one of the most useful and profitable things I have ever done in the apiary.

As the defendant in this case, I now submit it to the 50,000 readers of GLEANINGS as a jury to decide whether I have or have not produced sufficient evidence to sustain the position I have always taken. I might continue, and produce volumes of testimony to prove that I am in the right on this subject

Delanson, N. Y.

[We are not sure that our correspondent has quite undestood the point of view of his critics; and in a like manner we may assume that they may not have understood him. As we understand it, they are not arguing that bees should never be fed in the spring to stimulate brood-rearing; but they are contending that, if feeding is necessary *some time within the year* the bees should be fed in the fall, and enough so they will have plenty of stores clear up to and during settled warm weather. Or, to put it another way, it is not a question with them whether bees need to be fed in localities where natural supplies are deficient, but the time *when* feed should be given.

The text book authorities referred to, so far as we can see, were not arguing that bees should be fed in the spring rather than in the fall, or that they should be fed in the fall sufficient to bring them to early spring feeding, but to show *how* to stimulate brood-rearing in early spring when the colonies are weak or short of stores. It is true some of them advise spring feeding; but a text-book can never quite keep up with modern teachings in a journal; the old editions of works of ten or twenty years ago much less so.

Mr. H. R. Boardman's method of feeding before the honey-flow, as we understand it, had in view the jamming of the brood-nest with brood and honey, in warm weather and just before the honey-flow began, so there would be no place for the storage of the nectar except in the supers. His plan would not necessarily be out of harmony with the notions of the opponents of spring feeding, for it was for a different object – leaving no room for honey except in the supers.

It is perhaps well to bear in mind that they were speaking from the standpoint of

the honey-producer where the main honey-flow comes on the last of June or first of July. Mr. Alexander's locality does not have its main flow until some weeks later. During the long period of warm weather before the buckwheat comes into bloom, there would necessarily be a large amount of brood-rearing, and it is probable that no amount of heavy feeding in the fall would give the bees all the stores they require until the buckwheat opened up. Here is, obviously, a condition very different from that spoken of in the articles by the anti-spring-feeder people.

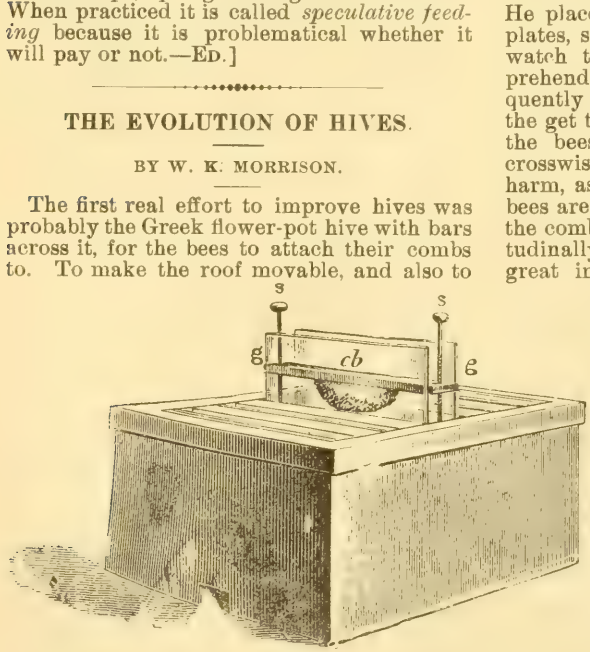
This whole matter really resolves itself down to this: Spring feeding is really a question of locality. Alexander is right in advising and practicing spring feeding for a locality with a late flow like his. No one who has seen the big populous colonies he has, and the big crops of honey he secures, can really call in question his methods for *his conditions;* for the proof of the pudding is in the eating.

In Europe, spring feeding is not advised. When practiced it is called *speculative feeding* because it is problematical whether it will pay or not.—ED.]

## THE EVOLUTION OF HIVES.

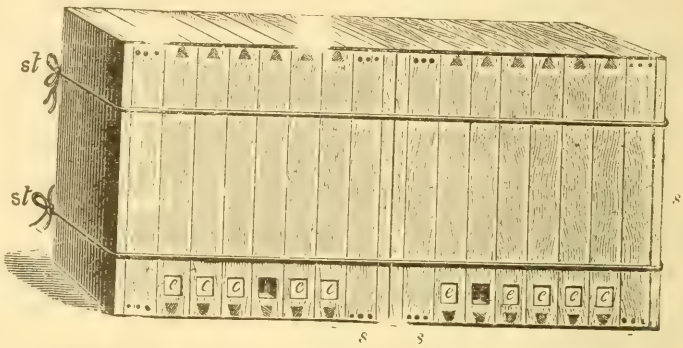
BY W. K. MORRISON.

The first real effort to improve hives was probably the Greek flower-pot hive with bars across it, for the bees to attach their combs to. To make the roof movable, and also to provide parallel bars for the combs, was quite a step in advance over the crude cylindrical hive of the Egyptians, though it is quite possible the latter were the inventors of the bar hive, and the Greeks only copyists. It is evident, from all we know, that the Greeks were well informed in bee culture before the Christian era; but it may be they borrowed their knowledge from the Egyptians, as many others did. It would not do us much good now if we did know who invented the bar hive. In any event, it was in actual use all through the Dark Ages down to the time when the celebrated Della Rocca resurrected it in the islands of the Egean Sea, and called attention to its merits.



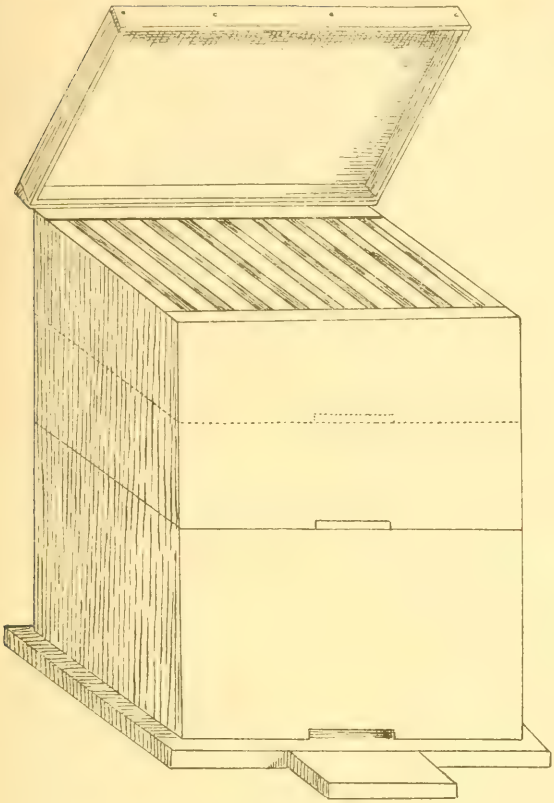

HUBER'S EXPERIMENT HIVE.

Maraldi, the Italian scientist, was the originator of the one-comb-at-a-time idea, for he was the inventor of the observatory hive. He placed a comb between two large glass plates, so that he might be the better able to watch their movements. He did not comprehend the value of a bee-space, and consequently he got the glass plates too far apart the get the best results. In the Maraldi hive the bees very frequently built the combs crosswise. This did not do any material harm, as it is actually easier to see what the bees are doing, particularly in the cells, when the combs are placed across instead of longitudinally. Maraldi, by his invention, gave a great impetus to the study of the honey-bee, and laid the foundation for greater things yet to come. Réaumur made great use of Maraldi's invention, but we do not know just how he made his discoveries. He made a great advance in our knowledge of bees, more particularly as regards what their habits are while in the hive.




HUBER'S LEAF HIVE, ARRANGED FOR MAKING INCREASE.

Huber followed in Réaumur's footsteps and made great use of the observation hive. He complained of the bees building the combs crosswise of the hive, and he soon saw the necessity of narrowing the space. In 1789 he invented a hive in which each comb was constructed in separate frames. His object in doing this was to enable him to take a colony of bees and their combs all to pieces whenever he desired, and also to put it together again when the examination was finished. In doing this he showed a consummate



HOWATSON'S SCOTCH HIVE, 1820.

knowledge of bee architecture, for his top-bars were $\frac{7}{8}$ inch in width, and the frames were spaced $1\frac{1}{4}$ inches from center to center.

The Bingham hive belongs to the Huber type; but the Michigan man makes use of the bee-space at top and bottom. The Quinby hive with standing closed-end frames belongs to the Huber type, and so does the Aspinwall, of a later date than any. It has been said by some that hives of this sort are not practical; but as a matter of fact some of the most famous and successful bee-keepers in the world have used just such hives.

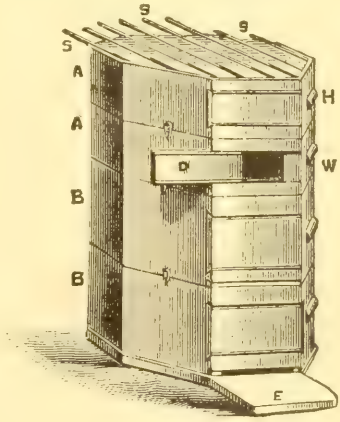
Huber's masterly work gained for him the name of being one of the first naturalists of his age, and his letters on bees were translated and published into all western languages of any prominence. Practical bee-keepers were slow to perceive the immense value of Huber's discoveries. He lived, as many able men have done, ahead of his age.

In Great Britain, hive invention took the form of improving the hive of Mewe (1652 A. D.). The idea was to have a movable roof and bars on which to attach the combs. Howatson's hive here shown was invented in Scotland, probably about the year 1820, for his book, which is a remarkably good treatise on bees, was published in 1825, and he speaks as if his hive was no new invention—at least he had given it a fai

Hives of this kind are known as "Stewarton" hives, and it was by means of these the Scotch bee-keepers swept the English bee-men off their feet at the great bee-keepers' show in the Crystal Palace in 1878. Between the bars are strips of glass to compel the bees to attach the combs to the bars, and also to keep them in their place. A good many of these hives were (and are) octagonal in shape, as more agreeable to the bees. When the Langstroth frame appeared, the Scotch were sharp enough to adapt it to the Stewarton.

The next great bee-hive inventor was the Russian. Prokopovitsh, who certainly has great claims for grateful consideration from modern bee-keepers A glance at the cut on next page will show that the man who invented such a hive knew the requirements of bee-keeping. He had 3000 hives himself, all with bees in them, and he sold quite a number. Besides, he conducted a bee-keepers' school where he turned out a number of successful bee-keepers, skilled in the use of his hives. He was a bee genius of the first rank. Russia being an oriental country, with little intercourse with western nations, Prokopovitsh's hive did not become known in Western Europe as it ought to have done according to its merits.

France and Switzerland, owing to the discoveries of Réaumur and Huber, became hotbeds of bee-keeping, and books and inventions followed thick and fast after the demise of Huber. In France, Debeavoy invented a hive in 1845 that came very near depriving Lang-

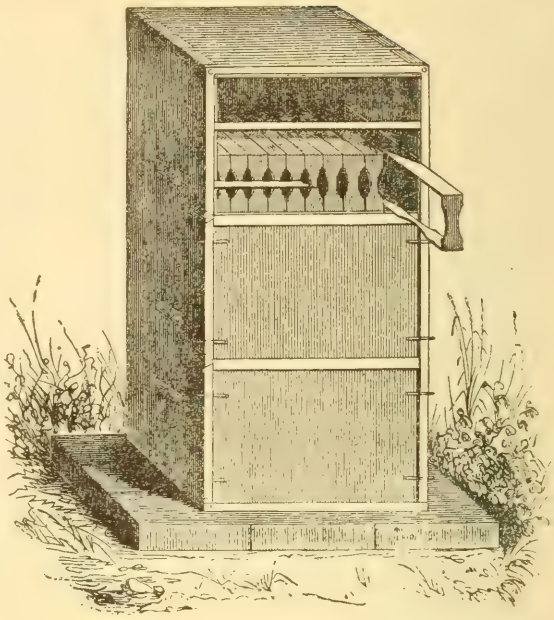



STEWARTON HIVE OF SCOTLAND, 18TH CENTURY.

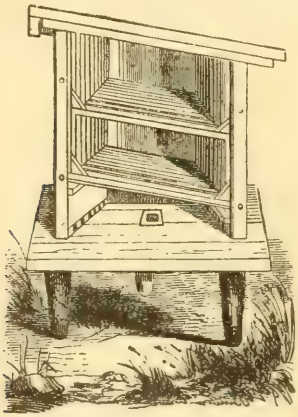
stroth of his honors. Here we have the hanging-frame idea, but not the bee-space. Munn, in England, a little later, brought out mething similar but lacking practicability.

In 1851 Lorenzo Lorraine Langstroth invented the movable hanging frame with a bee-space on all sides in combination with a movable roof, also having a bee-space on the under side. The United States Patent Office allowed him a broad sweeping patent covering all his rights in the clearest manner; yet all sorts of infringers arose to claim his great invention as theirs. Had Langstroth lived now, and been able to hire good lawyers, he would have been in a position to levy heavy fines for infringements. As it was, he was robbed of the fruits of his invention by persons of unscrupulous tendencies. Others have tried to claim for themselves or their friends the honors of this great invention which rendered the construction of a scientific hive an easy matter. Even Langstroth was himself persuaded that Dr. Dzierzon had discovered the same invention.

Dzierzon himself made no claim to such a thing; in fact, he prided himself on his side-opening bar hives. He cut his combs with a long knife, and then pulled them out with tongs. Americans would have no patience with such a plan. To the day of his death he objected to hives with movable roofs as unsanitary or unhygienic. Berlepsch adopted part of the Langstroth idea by using frames instead of bars; but the tongs are very necessary, even then, in the Berlepsch system. Any one interested in this subject, by studying Dzierzon's and Berlepsch's books, will soon perceive that neither has the slightest claim to the hive having hanging movable frames with a bee-space and movable roof. In addition, one ought to read Langstroth's book, which shows his invention was no accident. On the contrary, he left his German rivals far in the rear in every respect. England, France, Russia, Italy, Spain, Belgium, Nederland, Switzerland, Norway, Sweden, Australia, South Africa, all concede Langstroth as the man who solved the hive problem for them. This is due in no small degree to the late Charles Dadant, who at long range fought Langstroth's battles in Europe.



PROKOPOVITSCH'S HIVE, EARLY PART OF THE 19TH CENTURY.



DEBEAVOY'S HIVE.

Having right on his side he succeeded in convincing his opponents that Langstroth was the man who solved the hive problem for all mankind.

## MAKING UP WINTER LOSSES.

### A Review of Some of the Successful Plans for Making Increase.

BY E. D. TOWNSEND.

[Our correspondent assumes that the reader has a general understanding of both the Somerford and the Alexander plans for making increase, and for this reason he does not go into details in describing them. Any one who desires fuller particulars, however, may find both the Somerford and the Alexander plans in the 1908 edition of the A B C and X Y Z of Bee Culture.—Ed.]

Comb-honey producers may be striving to keep down increase, but extracted-honey men are more interested in plans for making up winter losses; for if their bees are handled as they should be there will not be enough natural swarms to make up for the loss through the year. Each season, therefore, there will be some artificially made swarms, and the purpose of this article is to show how to do this to the best advantage.

There is a rule to be observed in the making of artificial increase that is very important. The brood should be left undisturbed for the first eight days after being made

queenless to allow the bees time to cap all the unsealed brood. This rule or principle is observed in the Somerford, Alexander, and Chapman plans, all of which will be considered here; and if bee-keepers would keep this thought in mind, and work out a system of artificial swarming in which no unsealed brood is carried away from the parent colony, much better success could be expected. It is well known that, when bees are carried to a new location in the process of making artificial increase, if the apiarist is not well versed in the art of making bees stay where they are put in the different manipulations, large quantities of unsealed brood will be lost by the bees deserting the hive in the new quarters and returning to the parent hive. Let us now consider the

SOMERFORD PLAN FOR MAKING INCREASE.

This is a good one; but in order to work this system to the best advantage, one ought to have a very good stock of bees. The idea, in brief, is as follows: During either a natural or artificial flow of honey, the queen is removed from a colony that is very strong and in good condition to build queen-cells. In ten days, when the queen-cells are ripe and all the brood sealed, the colony is ready to be divided.

The average bee-keeper will have no trouble with the plan up to the time the division is to be made; but the difficult part comes when the attempt is made to compel the bees to stay in their respective places on the new stands. We will suppose that it is early in the season, and that two frames of brood have been selected with at least one good queen-cell, and that the bees from a third frame have been shaken on to the first two frames. The difficulty now consists in trying to make a good percentage of these bees stay with the brood on the new stand.

In preparing the hive for these little colonies, a lath is nailed over the entrance through which a ⅝-inch hole had previously been bored, which hole, however, is now corked up. The third night after the little swarm is made, and after the bees have stopped flying for the day, this cork should be removed from the ⅝-inch hole at the entrance, when the bees will be found ready to come out; for during the confinement they will have been gnawing at every opening where a particle of light could be seen. On this account, if the entrance were thus opened during the middle of the day, every bee that could fly would rush out and many of them would go back to the old stand, for it would be natural that they should prefer the old home to the prison from which they have just escaped. The consequence would be that but a very small number would be left at this new stand, with about as many bees at the old stand as there were before the division was made. Such a small swarm or nucleus would have a hard slow pull in order to get in shape for winter, and many times it would have to be helped. The small entrance, consisting only of a ⅝-inch hole, and also the time at which this entrance is opened, makes the plan successful where it otherwise would be uncertain and perhaps an actual failure. For instance, if this ⅝-inch entrance were opened late in the day after the bees had stopped flying, there might be, perhaps, a cupful of bees that would crawl out of the little entrance, for they are quick to realize that they are no longer prisoners, and the glad tidings go through the hive like magic. However, since it is so late that the bees will not fly, there will be practically none that will go back to the old stand. By this time the young queen has hatched, and the bees soon begin to carry out dead bees, etc., and to clean house generally. In other words, things have changed suddenly, for the bees that were prisoners, and were thinking of nothing but trying to get out, now begin to think about keeping house, and during the first night of liberty much is done along this line, so that, when morning comes, and the bees take their first flight, they no longer try to go back to the old location, but mark the new one, so that but very few go back. The consequences are that the nucleus will be in good condition, and very thrifty, when it might otherwise have been almost a failure.

In making nuclei with this Somerford plan we start a few artificial queen-cells at the time of making the divisions, which cells are from our best stock, so that if, for any reason, extra cells are wanted they will be on hand. It sometimes happens that it is convenient to use a colony for increase that we would not care to breed from, and it is less work to make artificial cells than to cut them from one comb and transfer them to another one, as would have to be done if following the Somerford plan, for many times all the desirable cells will be on only one or two combs of brood. Furthermore, only a few of the cells in such colonies will be good enough to use, the inferior ones being torn out when the division is made.

HOW THE QUEEN-CELLS ARE PRODUCED.

With the number of colonies that the honey-producer has to select from, there is no trouble in picking out colonies for cell-builders that are especially adapted to the work. I have found that nervous bees are better cell-builders than the more quiet strains, so in selecting the cell-building colonies pick out hybrids or bees that tend toward a darker-colored strain. After making this selection, see that all the cell-building colonies are strong in numbers. Then remove the brood and the queen from each, being sure, however, that there is plenty of honey left. However, it sometimes happens that there is brood in nearly all of the combs so that, when these are taken away from them, there will be almost no honey left, and thus it will be necessary to give two or three frames of stores, filling up the empty space with empty combs with the exception of one or two in the center of the hive. In this space in the center, place bars containing empty cell-cups, in order that these may be cleaned and made ready by the queenless bees for the

larvæ to be transferred later. The first day after the bees have been made broodless and queenless they will be anxious to get brood to start cells with.

We are now ready to transfer the larvæ from some of the best queens to the cells which have been cleaned out by the queenless bees. A transferring-needle, jelly-spoon, plenty of queen-cells containing royal jelly, etc., will be needed. There is enough royal jelly in an ordinary queen-cell to prepare ten cells for larvæ. It is important to get the larvæ transferred to the jelly in the prepared cells so nicely that the bees are hardly able to tell it from their own work. The cell-bars containing the transferred larvæ are now placed in the queenless colony to be started; and after they have been accepted, in a day or two they are taken from the queenless colony and placed in the second story of a powerful colony above a queen-excluder, where they may be finished. Two frames of brood should be lifted up from the lower story, and placed one on each side of the cell-bars in order to make sure that the bees do not leave the cells and go below, which might happen on a cool night. With the two frames of unsealed brood it is quite certain that the cells will be well taken care of. I am sure that the work will succeed better if the cells are *started* in a queenless colony in the way described, rather than in an upper story over an excluder. Of course, after the cells are started they can be transferred to such an upper story over an excluder to be finished.

For the honey-producer who raises only the queens that he needs to make up winter loss and increase, and when the regular brood-frame is used, no tools except those that I have mentioned will be necessary. These are so few, and their advantages so great, that no one can afford to be without them. In this way a queen can be supplied any time during the season.

### THE ALEXANDER METHOD OF MAKING INCREASE.

This is a very good system, for, as in the Somerford method, the brood is left with the full force of bees until it is all capped. This, of course, means a saving of all the unsealed brood, and this can not be said of some of the other methods which are being used where the unsealed brood is moved to a new location from which many of the bees that were taken with it go back to the old location, leaving the brood to take care of itself.

With the Alexander plan the queen-cells are all produced artificially, as explained above. By the way, the brood-nest above the excluder is one of the finest places to get cells finished after they have been started in the queenless colony. A ten-day-old cell should be ready to give the brood four days before it is set on the permanent stand. In this way the young queen is ready to fly the first day after the division is made, and she becomes a laying queen in another week.

We made up some winter losses by the Alexander plan of increase just at the commencement of the clover flow. In this case the brood-nests were all ready, some having honey where the bees had died before it was consumed. The queen and one frame of brood were put in the center of one of these sets of brood-combs, and a queen-excluder was put on top; then the brood and bees were set over this so that all were on the old stand. In one week a ripe cell was given the bees in the upper body, and on the eleventh day this upper body was set on a stand of its own with a virgin queen ready to fly the first favorable day. This worked well, for all were in good shape for winter, there being no weak inferior colonies likely to be robbed out at any time. There was one objection, however — the plan was expensive. It can be seen that a set of brood-combs to be filled with brood and honey is equivalent to a set of frames containing the best clover or raspberry honey, and this amount of honey would be worth about $4.50. It is evident that we could go into the market and buy bees for less money than this.

Our next plan was to wait until near the close of the clover season, when the honey-flow would last but a few days longer, it having already begun to slacken. At this time the plan just described was carried out, and it worked better, for it gave the advantage of the honey-flow in which to have the cells prepared and introduced, and it allowed also the colonies to get in a little honey so that they would be in very good shape, but of course short of stores, although they usually would have enough to last them until the time to feed up with sugar syrup for winter.

While some of our winter loss is still made up on this last plan we have another plan that we like better. At the commencement of the honey-flow the division is made and the cell is given in *four* days, and the brood set off on its own stand on the *eighth* day after the division. At this time the brood is all capped so that there is no loss there. While this method takes three days more of hatching bees away from the colony that is left on the old stand, which is our honey-gatherer, we make *two* colonies from the brood by dividing it in the middle, giving each half an equal part of the bees, brood, and combs of honey. Each half is also given a ripe queen-cell; and although one of them will have the virgin and will, therefore, destroy the cell, it saves work in the end and is the better way. By making these nuclei of the divided brood early, they breed up rapidly and make just as good colonies for winter as if the brood had not been divided. There is this difference, however; that is, brood not divided in halves in the way I described might have enough stores for winter, while the two halves of the divided brood would have to be fed some syrup to carry them over to the next season.

While this latter plan costs only half as much honey in the first place as does the plan first described under the heading, "The Alexander Plan of Making Increas," yet more sugar has to be fed for wintor stores, but not enough more to offset what is gain-

ed, and it is, therefore, a very good plan. It will be noticed that, in the plan of making two nuclei from the brood of one colony, only half as many colonies need to be disturbed to make up the winter loss, and in those which *are* disturbed to make up such loss, the colonies left on the old stand containing the working force are in about the same condition after the brood is removed, as to the amount of honey that would be stored, as a new swarm would be if hived on the old stand.

### THE ALEXANDER PLAN AS WORKED FOR INCREASE.

In making up winter losses I have advised the use of drawn combs. In making increase, frames of wired foundation are used instead. Sometimes it happens that we have both increase and winter loss to make in the same yard, and in such a case a frame of brood containing the queen is placed in a hive containing frames of foundation. A queen-excluder is placed on top of this, and then the brood over the excluder, so that all is on the old stand just as usual. On the eighth day the brood is set off on a new location, and is used to make up the winter loss as I have explained.

The difference lies in the fact that no story of extracting-combs is given the colony until the foundation has all been drawn out and filled with honey and brood; for, were we to give all the comb room the bees would use above, the foundation would be neglected, and probably there would be no colony at all, so to speak, for the bees might not have more than two frames of the foundation drawn out, nearly the whole force of workers being above. In order to avoid having seven-tenths of the hive below untouched, therefore, see that this foundation is all drawn out before stories of extracting frames are given.

In the above discussion I have purposely said nothing about a flow of buckwheat honey, having taken into consideration only the white-honey flow of June and the fore part of July. Here at Remus we get some dark honey from the buckwheat and aster. Some of our winter losses in years past have been made up during this flow. While it is somewhat cheaper than to do it during the white flow, I am very sure that such colonies are not worth as much as those made earlier, judging from what the bees are able to accomplish in storing surplus the season following; and it seems that these little swarms are a little on the order of late natural swarms, for they do not winter as well, and they are, consequently, not as desirable. We have, therefore, come to the conclusion that, while it costs more to make our increase early, it is cheaper in the end, and therefore we try to do that at the present time.

A practical honey-producer can buy bees of less successful bee-keepers for much less money than he can produce them himself, *if* he can find any for sale that are in a desirable condition. Sometimes we find desirable bees, and in such cases we buy them instead of trying to make our own increase.

### THE CHAPMAN PLAN OF MAKING INCREASE.

Mr. S. D. Chapman has a plan somewhat different from these others mentioned. At a period about eight days before the close of the raspberry flow (it would be the same if the flow were from clover or basswood), he hunts out and kills all his queens with the idea of having only young queens with which to go into winter quarters. In ten days, when the queen-cells that have been started come to maturity, half of the bees and brood, including a good queen-cell, is taken out of as many colonies as desired, and put into empty hives, and then both hives are supplied with empty combs from the colonies that died during the winter. As this is about the middle of July, these half-colonies that will soon contain young queens will build up into good colonies for winter, although they will probably need to be fed quite a quantity for winter stores. The bees have eight days of the last of the honey-flow in which to build their cells, which insures the best quality of cells. Furthermore, at this time it is less expensive in the amount of honey it takes to produce the increase; for when one runs for extracted honey, as Mr. Chapman does, this killing of the queens is not likely to cause any loss of honey; and the smaller amount of brood the bees have to care for may be a gain rather than a loss. Finally, by having young queens take their flight after the season is over, there is less than one per cent of swarms during that time. We have tried this plan and found it to be a good one.

Mr. E. E. Coveyou, of Petoskey, usually has his own way of doing things, and his method of making up winter loss and working for increase is no exception. When he finds cells being built in any of his colonies preparatory to swarming, the colony is shaken into a hive filled with combs or foundation.* After the bees and queen have been shaken from the combs, the brood is removed to some weak or moderately strong colony, to be taken care of for six or seven days. At the end of this time the brood is placed on a bottom-board beside the beforementioned medium colony, over which it has been for the previous few days, and both hives are so placed as to get about the same number of flying bees. A new colony will thus be made from the brood.

If he desires to make two colonies from the brood he divides it and sets the two halves on the old stand so as to catch all of the flying force, the original medium colony of this stand then being moved to some other stand. If there are cells to be saved in the brood, a queen-excluder must be used between the upper story of brood and the medium colony before the division.

If this brood from the shaken swarm had been set on a stand of its own at the time of shaking, much of the unsealed larvæ would

* If one has the foundation, this is the place to use it, for the combs may be used later.

have been lost by the bees leaving it and going back to the old stand.

If Mr. Coveyou finds that more increase is needed than he can get from the colonies having cells, the required number of cells are provided by the plan already described.

Remus, Mich.

## BEE-KEEPING IN NEW MEXICO.

### Some Problems not Ordinarily Met.

BY THE NEW MEXICO CHAP.

Couldn't Mr. Alexander and others, in giving dates, refer to an expected honey-flow, to the time when bees first begin to get nectar, to a killing frost, or to some such terms, instead of May 1, etc.? I am down here in New Mexico where the bees fly every day in the year. To-day, Dec. 28, I saw a great number of them follow a load of honey two and a half miles, and swarm around the wagon for a long time after it was unloaded. I have just been reading GLEANINGS for Dec. 15, p. 1594, where Mr Alexander is quoted as having said he began extracting from the brood-nest May 1. Reference to a certain day of the month, or even to a certain month in your locality, means little in the way of actual information to me. Not having the conditions of climate, season, and flora tabulated in my head for the whole United States the phrase "May 1" for Ohio leaves me to guess *when* I should do the same thing in case I wish to try the plan. I believe Mr. Alexander did in the original article specify so many days before the first flow; but if such explanations were more generally used they would help me. Could you not, in some place in your columns, explain this point to the kind writers of GLEANINGS, and thus help your readers of the Southwest?

Many of the articles I read leave the impression that the writer had never conceived of such conditions in the bee business as confront me. For instance, I wonder if "Crudh" would be thinking and writing the same as he did for Dec. 15, pages 1592 and '93, if he were here, where English-speaking help is hard to get, working to put 1500 run-down colonies, scattered over ten square miles (one yard even 45 miles away), in shape to breed up to 2500 next spring, and to produce a given number of pounds each, in order to meet interest and principal where you must have gilt-edged security to get money at 10 per cent. I wonder if he would figure long whether or not a queen was too black to keep, or whether she was one or three years old. Perhaps his mind would be on where he was going to establish those new yards; how he was to get the wells put down, whether he would have to have a horse here, etc.

If the gentleman who opposes Dr. Miller's idea of controlling bee-ranges had to "buck" this sort of proposition from twelve to eighteen hours per day, I wonder if he would call it pastime, or if he would get some stronger words for it.

Now about taking off honey in the afternoon so the bees will not sting you and the neighbors. What about taking it off from daylight until dark, and working at the extractor away into the night with the bees lying idle for weeks at a time for want of empty combs where help can not be had?

I should like to hear more about "going Mr. Alexander one better" by taking out combs and letting bees carry the honey back to empty ones in the hive. We have several thousand pounds of honey candied in the combs, so white and dry that all the power extractors in the United States would not throw it. Suggestions thankfully received.

Mesilla Park, N. M.

## INJURY TO LEAVES OF BASSWOOD-TREES.

BY PROF. H. A. SURFACE.

Can you tell me what to do with my basswood-trees? Every year something eats the leaves full of holes. I fear it hurts the bloom and prevents secretion of honey. I have 25 trees, one foot in diameter. They bloom full some years, and the bees work on them ten days or two weeks, some years two days. What causes the injury is so small that it is impossible to see it. Sometimes I see a very small worm. They make a perfect sieve of the leaves. J. V. N. HOUSE.

Spring Hill, Kan.

[This was referred to Prof. H. A. Surface, Economic Zoologist at Harrisburg, Pa., who replies:]

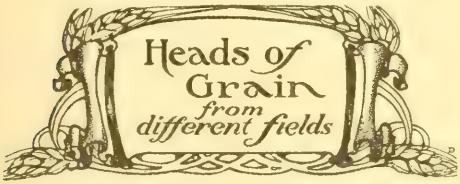
It is evident that the injury to the leaves of the basswood-tree described in the above inquiry is due to beetles, which are, no doubt, either rose-bugs or June beetles. The latter are sometimes called May beetles and drone beetles. The work of making the leaves full of holes is indicative of these creatures. Worms or larvæ may eat holes in the leaves when they are very young, but they soon go to the edge and eat away the tissue from the margin of the leaf. Also if the work were done by worms or larvæ these pests would be present in great numbers and quite conspicuous. The beetles feed after night, and the June bugs or May beetles may disappear entirely in the daytime, finding concealment in the grass and soil. If the damage be done by beetles, remedies will be difficult to apply, for the reason that these pests are so slow to poison that it is generally considered impossible to kill them by poisons. The best material to apply as a spray would be arsenate of lead, two pounds dissolved in fifty gallons of water. This would stick better than any other poison that could be used. It will not be washed off readily by rains, and will be present when needed. It should be applied upon the first appearance of such injury. If the damage be done by worms or larvæ this would undoubtedly be the best remedy to use, and spraying with Paris green would be next in order.

Sometimes it is possible to catch the leaf-eating beetles on cloths soaked with kerosene

by tacking such cloths to a frame stretcher and shaking or jarring the branches over them after night or in the early morning when the insects are yet present. If the beetles merely fall into the kerosene-soaked cloth they will eventually be killed through contact with the oil, even though they may be able to escape temporarily.

To overcome the effects of such injury it would be well to saturate the ground by the application of a little nitrate of soda, a mulching of stable cleanings, or some other nitrogen-bearing material applied around the tree as far as the branches extend. Cultivation of the soil to preserve moisture is advisable, but this can not always be done. Abundant watering will help the trees greatly in overcoming the effects of such injury.

It is difficult to name insects with certainty without very accurate descriptions of both the pest and the injury that is inflicted or without the insects themselves. It would be advisable for inquirers to mail us specimens, and thus be accurately informed instead of being obliged to rely upon assumptions from descriptions that may not be complete.




### SOME ALFALFA HONEY THAT COULD NOT BE LIQUEFIED BY HOT AIR.

In regard to liquefying honey, p. 145, Feb. 1, I will say that last November I had to warm up about 150 ten-frame supers to extract them. For this purpose I built an 8×12 room and used a small coal-heating stove, and maintained a temperature from 110 to 130° for 24 hours, and had alfalfa honey in the room for three days in 60-lb. cans, and it did not liquefy in that length of time. I also had some honey in supers that was candied, and it is still in the frames. In addition I had a 6000-lb. storage-tank that I tried to get the sun to warm up last summer when it was ranging 100° in the shade, and it was a failure. I have had to shovel out 18,000 lbs. of honey in the last year, and scorched only seven cans, and they were one-gallon in size. I think that, to use hot air, would be expensive — that is, to accomplish the purpose. Of course, some kinds of hot air are very cheap. M. TOWNSEND.

Ontario, Ore.

[Our experiments in liquefying candied honey in an incubator lead us to believe it would take nearly a week with a temperature of from 110 to 130, to liquefy honey granulated so hard that it is solid.

The combs containing the honey in such a temperature, in a few days more would have sagged or crushed as soon as the honey had begun to melt.

In the case of a large 6000-lb. tank of honey which was candied, the sun would never affect it. The same thing has been tried in California, with a much warmer climate, without results. The only thing to do in a case of this kind is to do as you did—shovel it out and melt it over hot water.—ED.]

### SHIPPING HIVES IN BOXES.

The whole bee-keeping fraternity should insist on manufacturers shipping hives that are sent out in the flat in closed boxes instead of using the hive-bodies for the crate. I presume this is done to reduce the freight charges to the lowest possible point; but I believe the majority of bee-keepers would be willing to pay a little more freight and have their supplies arrive in as good a condition as when they left the factory. I am of the opinion that, if the shippers of hives packed thus could be at the destination point and see them unloaded they would very often feel like disowning them.

In unpacking the shipment the contrast is so great that one can scarcely realize the shipment is from the same factory. The inside hives are as bright and clean as a new pin, while the hives set up as the shipping-crate are black and greasy, contain several nail-holes, and the soft pine wood is marred, and the body dented and often cracked by rough freight-handlers *en route*. The hives are always shipped with the hand-holes on the outside of the package, probably to afford a place for freight-handlers to handle them, and of course they must be put together this way. In a shipment of even five hives, two sets of hive-bodies put together are necessary to hold the rest of the hive-fixtures. We see by this what a large amount of extra work is necessary to put such hives in proper shape. Not every bee-keeper has the tools or the time to plane, dress, trim, and putty the nail-holes of these marred hive-bodies, nor should they be expected to do so when they pay for doing this very thing at the factory. GRANT STANLEY.

Nisbet, Pa.

### QUEEN WITH DENT IN HER BACK.

In June, 1907, I purchased a breeding-queen and introduced her into a hive with two frames of brood taken from another colony. During the month I added two more frames of brood, and the rest of the hive full foundation — Danzenbaker hive — until now the colony is very strong in bees, thousands hatching every day. When the queen arrived, there appeared a small dent on the back between the wing-sockets, perhaps as large as a pinhead, and $\frac{1}{30}$ of an inch deep. The cause of this dent does not seem to be very clear, nor does it affect her laying qualities or her offspring in the least.

To-day I opened the hive to show the queen to a visitor, and the first frame lifted out contained a beautiful large queen, and upon close examination the dent was not vis-

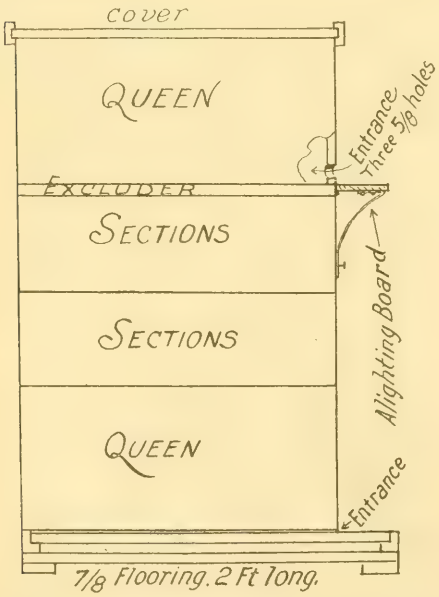
ible. While we were looking at and admiring her my attention was attracted to another part of the frame, when, lo! there was the old original queen on the same frame and same side of the comb, but the newly discovered queen was the larger by all odds. I then looked through the hive for queen-cells, and found *one* hatched out. Do you think the bees are trying to supersede the other queen, or what?

Granby, Conn. E. H. SHATTUCK.

[In these cases it is evident the bees had in view the supersedure of the old queen. The dent in her body probably incapacitated her to an appreciable extent, and hence the presence of a new and vigorous queen.—ED.]

### A SUCCESSFUL PLAN FOR WINTERING TWO QUEENS IN A HIVE.

In reference to the two-queen system of managing bees, I will say that I divide the hives with a thin division-board, bee-tight, from top to bottom. Two nuclei will then winter just as well as a full colony in either an eight or ten frame hive. In this way we have the two queens in the spring; and if a queen is needed for another colony, one queen can be removed and the division-board taken out. I am enthusiastic in recommending a divided hive for wintering bees. I take two colonies and put them in two divided bodies, one on top of the other, so that each colony occupies half of both bodies. In this way the heat of both colonies is in one hive.




It always has been next to impossible for me to get my colonies built up in time for the white-clover honey-flow. Now when the flow begins I put the two colonies, each with its queen, in two undivided bodies, both of which are on the same bottom-board. Two section-supers and an excluder are between the two colonies. Besides the regular entrance there is an entrance above the supers, as shown in the diagram. The bees keep right on rearing brood; and when they get too numerous for two hives and three or four supers I remove the top colony to another stand.

I recommend this system only for wintering and for building up in time for the honey-flow. Last winter was the first time I tried it. B. D. HALL.

Royal, Ill.

### NAILS KEPT IN CIGAR-BOXES.

I think I have quite an improvement over Dr. Miller's nail-box as illustrated and described in the Dec. 15th issue. I use ordinary cigar-boxes, nailing the lids securely at one end and half way up the sides, using regular cigar-box nails. Then with a sharp thin-bladed saw I make a cross-cut through the middle of the lid. I then have practically the same box as Dr. Miller's, with added advantages of a lid, keeping out dust, etc.; less trouble to make, and no cost whatever, as the boxes can be secured for nothing at almost any cigar-store, grocery, or drug-store. If it is desirable to hang it up, as Dr. Miller suggests, it is only necessary to tack a small strip along the bottom, leaving a projection with a nail-hole at the top. However, I find them more convenient to lay the box flat on a shelf with a nail, like contents, fastened on the end of the box for a label.

Piqua, Ohio. M. E. MCMANES, M. D.

### TOP AND BOTTOM STARTERS FOUND SATISFACTORY IN CALIFORNIA.

I have just read the article by W. A. Pryal, p. 1582, in which it is stated that top and bottom starters in sections did not work satisfactorily in his locality. Now, I live in Alameda Co., not over twenty miles from Oakland as the crow flies. I use top and bottom starters according to Dr. Miller's directions, and the results are all right. I do not think locality has any thing to do with his trouble. I think the trouble is with his bees; but I am only an amateur in the business, and write this to let you know that all Alameda Co. bees do not fill their sections in a freakish manner. S C. GIBSON.

Niles, Cal.

### SCREENED ENTRANCES TO HIVES IN A CELLAR NOT SATISFACTORY; WHY ONE COLONY HAD DYSENTERY.

I screened the entrances of the hives the first four weeks after I placed them in the cellar; and if I had left them closed I should not have had a live bee to-day. With me a closed entrance is a failure.

I placed my bees in the cellar Nov. 15, all in very good condition, with plenty of natural stores. The first two weeks in the cellar they were very quiet; after that they began to be uneasy, and finally to roar, and the thermometer began to rise, and went up to 60, with a strong smell of dysentery, which I traced to one colony. (The date of my examination was the first week in December.)

That one colony had dysentery in a very bad form. I removed it. I placed ice in the cellar, opened up my ventilators, opened up the entrance, and cooled down the cellar to 40; shut up the cellar, and up to date my thermometer stood at 48 at every examination, with all ventilators open. Now, why was one colony affected and not the rest? It was a colony that swarmed on the 23d of August, and the swarm was put with a weak colony that was queenless.

Estey, Mich. MILO WRIGHT.

[We are unable to answer the question without more particulars.—ED.]

### CATCHING STRAY SWARMS.

To trap stray swarms, I secure a number of boxes at the local stores, of different sizes. The covers are cleated, and fastened on with four large screw-eyes to avoid the bother of a screwdriver. In one side of the box is a hole which is covered with a wire-cloth door. Finally, a screw-eye is put into the top back edge of the box with which to hang it up.

With a ladder I go up a tree, drive a nail, hang the box, see that the door is open, shove in some comb honey, and go away. Last spring I caught five swarms in four boxes; and had the season not been so late (after June 10th) I should have captured many more. As it was, I got 14 swarms, from which I put away nine with honey enough in the hives to keep them over winter.

The bee-trees have been pretty well cut out of the little grove adjacent to my home; and as the bees come to the grove, seeing the trees from afar, it is only natural that they should go into a nice, clean, inviting hive.

DR. A. F. BONNEY.

### EVAPORATING HONEY IN A VACUUM-PAN AT A TEMPERATURE OF 120 TO 140°.

I have read several articles in GLEANINGS on the evaporation of honey; and as I am a practical sugar-boiler I thought perhaps my experience and ideas might reveal something new in the way of evaporating or candying honey.

Honey can be boiled or evaporated in a vacuum-pan at from 120 to 140° F., and I think without injury to the same, excepting that it may granulate. Cane syrup boiled under a vacuum will granulate in a few days; though whether it would have the same effect on honey I can not say; but even so, if we could evaporate honey and retain its color and flavor, converting it into sugar or candied honey in a few days, I think it would be a paying proposition.

There is a small vacuum-pan at the Louisiana experimental station, New Orleans, where an experiment could be made at very little cost. W. H. RAGAN.

Siloam Springs, Ark.

### PETROLEUM TO PREVENT ROBBING.

I am in the petroleum regions of Kansas, and when there is any robbing going on in my apiary I simply soak some old gunny sacks in the crude oil and wring them out so no oil will drip, and place them over the hive that is being robbed except the front. Then I close the opening to a small space. The robber bees generally want to try every spot about the hive before they make an attempt to go in at the regular entrance.

Chanute, Kan. JAMES FRAZIER.

### TOP AND BOTTOM STARTERS VERY SATISFACTORY.

Last year, 1907, I put starters in 10,000 sections with the top starter from 1½ to 2 in. deep, and bottom starter from ½ to ⅝ inches. During the two previous years I used probably 20,000 sections with top starter from 1½ inches to half full. I never had a single case of malformation, every section being straight and evenly filled, with no discrepancy in the cells that I noticed. Two sections that I remember as being left over from previous year had a line of wax at bottom, but with a little projection in the center of about ¼ inch. I put a starter at the top and left the bottom as it was. The finished sections showed a tongue-like formation in the middle, showing that the bees had built up from the little projection of foundation at the bottom. These were the only two bad sections, and even they were straight, as I use separators. I think the same plan of using starters is used all over Colorado. R. S. BECKTELL.

Grand Valley, Colorado.

### THE REASON FOR THE LOW PRICES.

I notice the honey in our stores is just as the bees left it. When inquiring as to the price paid for such honey I find that it is usually about five or six cents below the market price; yet the producer can't afford the subscription price of a bee-journal and learn to clean, grade, and market their section honey. I have a fight here every fall to get a honey market, as these fellows will bring in a super or two (if they have that much), and seem to be afraid of overstocking the market, and are glad to sell their stuff at any price. Of course, our merchants get it cheap, and that establishes the price. The happy-go-lucky farmer has sold his honey, and goes home to return and do the same thing the next fall. J. W. URSH.

Belleville, Mich.

[Better buy him out or get him to put their honey up in good shape and maintain prices with you. It is to *his* interest to do so.—ED.]

### THE RICH-ALEXANDER PLAN OF PREVENTING SWARMING.

I wish to say a word in regard to the Rich-Alexander plan of non-swarming as given on page 644, May 1, 1907. A year ago I had four colonies equally strong, and I manipulated two of them in accordance with this plan, with the result that I have taken honey from them but no swarms. The other two swarmed—no honey yet, and increased to five colonies. The Rich-Alexander plan for me, after this. E. L. SCHUMANN.

New York, N. Y.

### A CHICKEN THAT LEARNED TO CATCH DRONES BUT NOT WORKERS.

After reading Mr. Franklin G. Fox's article in regard to feeding drones to young chickens, on page 1505 of the Dec. 1st issue, 1907, I felt that I should like to give my experience. Last summer my bees were located near my poultry-house, and the chickens used to run in my bee-yard a great deal. I had one chicken that had learned to kill bees and eat them. It seemed strange to me that it never seemed to get stung. It would walk up to a hive, catch a bee, walk off and beat him on the ground, and then swallow it. After this, it would repeat the performance. It seemed to have certain hives it worked on, and these were pure golden Italians.

I killed the chicken and began to dissect it. I examined his crop very closely, and found it contained 27 drones and not a single worker. This astonished me, because I had expected to find a lot of workers instead of drones.

If I had only known that the chicken was destroying drones only, I would not have sold it at any price. The chicken, I suppose, knew the drones by their size and shape.

E. S. Hudson.

### QUEBEC BEE-KEEPERS' ASSOCIATION.

On February 5, in the City Hall of St. Hyacinthe, there was a meeting of a considerable number of bee-keepers of the province of Quebec, for the purpose of forming a bee-keepers' association. The chair was occupied by Mr. C. Péloquin, M. C. A., of St. Hyacinthe, as president of the meeting, and A. O. Comiré, M. D., as secretary.

In a few words Mr. Péloquin explained the purpose of the meeting, and upon his proposition the following resolutions were adopted:

That an association known as the Quebec Bee-keepers' Association shall be formed in the province of Quebec, and shall be composed of those interested in bee-keeping, who become enrolled as members by paying the annual membership fee of one dollar to the secretary of the association.

That the direction of the association shall be composed of nine members.

That the following persons shall be the directors:

Chas. Péloquin, of St. Hyacinthe; Hector Béland, of Louisville; Théodule Cloutier, of L'Islet; Napoléon Gaudet, of St. Simon; F. W. Jones, of Bedford; J. A. Camirand, of Sherbrooke; Dr. J. L. Comiré, of Yamaska; Michel Dufault, of St. Joseph of Sorel; Onésiphore Fontaine, of St. Guillaume.

That the president shall be Mr. C. Péloquin, of St. Hyacinthe, and the secretary A. O. Comiré. M. D., of St. Francois du Lac.

That the Hon. Jules Allard, Minister of Agriculture, shall be asked to bring before the government, at the next session, a law providing for the legal formation of bee-keepers' associations in the province of Quebec, and another law providing for the suppression of foul brood among bees.

Secretary.

### IS IT ADVISABLE TO MAKE A COLONY QUEENLESS 24 OR 48 HOURS PRIOR TO THE INTRODUCTION OF A NEW QUEEN?

How long would you advise me to take the old queen away before introducing the new one? C. W. Barr.

Florence, Kansas.

[It is our rule to take out the old queen, and cage the new one to be introduced, at the same operation. There is nothing gained in waiting 24 or 48 hours, according to our experience. If a longer time elapses, the problem of introducing is considerably complicated, for the reason that the bees get into the notion of raising their own queen, start building cells, and when these are once started they are inclined to act unkindly toward the new mother to be introduced.

It very often happens that a customer will remove a queen from his hive and then send on to a queen-breeder asking to have a queen sent by return mail, which he intends to introduce to the hive just made queenless. Perhaps the queen-breeder is unable to fill the order promptly. A delay ensues, during which cells are started, and by the time the new queen-mother arrives she is quite likely to be maltreated, if not killed outright.

Never remove a queen from a hive until you are sure that you will have another at least within 24 hours. There is no objection to keeping the hive queenless for that length of time prior to the introduction of a new one; but such queenlessness should not continue for a longer period.—Ed.]

### BEE ACCOUNT FOR 1907.

| | | |
|---|---|---|
| **April.** | | |
| 16 stands bees, April 17 | $ 80 00 | |
| Supplies carried over | 12 10 | |
| New supplies | 26 10 | |
| Queen | 2 00 | |
| **June.** | | |
| 283⅔ lbs. honey at 15 | | $ 42 55 |
| 3½ lbs. beeswax | | 1 00 |
| **July.** | | |
| 174 lbs. honey at 15 | | 26 10 |
| **September.** | | |
| 240⅓ lbs. honey at 15 | | 36 05 |
| 175 lbs. for home use | | 26 25 |
| **December.** | | |
| 24 stands bees | | 120 00 |
| | $120 20 | $251 95 |
| | | 120 20 |
| Balance in my favor | $131.75 | $131 75 |

In this account I have not counted what I gave away and what we used up to Dec. 1, and we have used no little amount, for there are eight of us.

Underwood, Ind. Raleigh Thompson.

### A CORRECTION.

The directions for making the spacing-blocks, in my article on page 432, April 1, should read, "A fraction less in thickness than *half the width* of the section."

Meridian, Ida., April 14. G. J. Yoder.

Trust in the Lord, and do good; so shalt thou dwell in the land, and verily thou shalt be fed.—PSALM 37:3.

Quite a few periodicals are sent me on socialism; and, to tell the truth, I am flooded with periodicals devoted to almost every *ism* under the sun, it would seem, and therefore it is impossible for me to do more than to glance over them. Perhaps I should say that, as I grow older, I find it beyond my strength to read books and papers as I used to do. For some years I have felt it a sort of duty to look over at least *one* daily paper.

I do not want to miss the good things that are coming so constantly in regard to the victories of the Lord Jesus Christ over the sin of intemperance; but I have just been thinking that I shall have to give up reading even the daily—at least as much as I have been doing. Not only my health, but my very life depends on being out in the open air many hours of the day. I make this suggestion to you, dear friends, because I want you to know that I can not read books and periodicals as I used to do. Now, with all this prelude I want to say that, in glancing over the periodical called *The Study of Socialism*, my eye caught the following sentence:

"Whenever one man gets a dollar that he has not earned, it is a sure thing that some other man has earned a dollar that he did not get."

I want to say *amen* to that statement, and make an application of it in regard to this matter of selling secrets, or, if you choose, selling a much advertised book for five or ten times what it is actually worth. Perhaps I might say a hundred times. And this whole business of taking a dollar, more or less, for some information that can be printed on a small piece of paper, is robbing somebody, probably, of a hard-earned dollar. Our text tells us to trust in the Lord, and do good; but a man is *not* trusting the Lord nor *doing good* when he takes money for "secrets," especially the sort of secrets where one signs a contract not to let his neighbor have the secret nor let him see the book.

There is another way of getting money that reallly *does* do your neighbor good; and that other way is what I am going to talk about to day. Yes, I am going to have another chicken story. While in Elmira, N. Y., last week I called on a bee-keeper of years gone by. He was very glad to see me, and before I left he introduced me to his wife, who is a bright and interesting woman. Her eyes twinkled when she heard my name, and it was a pleasure to see me. Then she added that she wanted to find a little fault with my last Home paper. I began to be troubled right away; but when she explained that her only objection was that it had *nothing in it about chickens*, I felt better. However, her good husband (Mr. P. F. Conklin, who is a railroad engineer), so strongly indorsed my temperance talk that I felt as if I had not gone very far amiss, take it all together, after all. And, by the way, there are so many of the women-folks who have been asking for more "chicken stories" that I do not know but I am warranted in taking a little space for that subject—a subject dear to my heart, even if this *is* a bee journal.

I want to say something more about my visit to friend Philo's in Elmira. His only son is named Ernest—E. R. Philo; and although the father has been a "chicken crank" all the days of his life, as well as a bee-keeper, his son did not seem to take much of a shine to either bees or chickens. His great craze from boyhood up was printing. In fact, while quite a boy he got a little printing-press, like the one I started with, perhaps, before we published GLEANINGS. Well, this boy could think of nothing, day or night, but nice clean printing; so after his father got to doing so much with chickens that he needed some sort of communication with the great outside world, his boy started a poultry-paper. But for some years, owing, probably, to the great number of other poultry journals (somebody has told me there are close on to one hundred of them in the United States), they did not succeed in working up a very large subscription list. I think that, about a year ago, 1500 subscribers was pretty nearly the sum total The boy is now just about 21, bright and wideawake, with a pretty good physical frame for hard work. Well, that list of 1500 names has, during the last year, run up to over *12,000*. I do not know how it came about—probably largely on account of the father's development of new things for poultrymen during the past year.

While talking with friend Philo about his "fireless" brooder I asked him several questions about the traffic in baby chickens one day old. Later I noticed an advertisement in the poultry journals of several establishments near my own home that do nothing but ship chickens as soon as they are hatched. I sent for their circulars, and yesterday, April 14, paid a visit to three of them. The first one I called on was owned by Jos. A Bloom & Co., Chatfield, O , and I was delighted to find the whole establishment under the care of a young man not much older in appearance than Ernest Philo—may be 25 years old. A new building has been put up since January, and this building contains 48 incubators of 200-egg capacity each, all in full blast, and he and his younger brother were very busy in making *more* incubators. Instead of paying a big price to the incubator factories they just make their own, and they claim that these home-made ones will do as good or better work than any they can buy. Just think of it! A couple of *boys* practically making incubators that actually give splendid results! As a matter of course, they have sent for samples of almost every

thing advertised to help along the poultry business. But a great part of them are practically of no account. For instance, I noticed a $2.00 egg-tester that I had been thinking of sending for. Mr. Bloom said he did not find it a bit better for *his use* than the common 25-cent ones. Of course, there is a great deal in getting used to a new machine or apparatus.

The next call I made was at the Old Honesty hatchery, of New Washington, O. They have a room similar to the one just mentioned, containing *82* incubators of 200 eggs each. These incubator rooms or cellars are partly under ground in order to secure a uniform temperature. The upper story is used as a workshop. I wish to congratulate these men in both places on having their rooms, incubators, and every thing else kept so neat, clean, and businesslike. The arrangement I had made to meet a special train was of such a nature that I did not have as much time as I really wished in order to look over the different establishments.

My third and last call was at M. Uhl & Co.'s, New Washington, O. These folks have been in the business for about eight years. Last season they sold 82,000 chickens, but did not succeed even then in filling orders. Their shipping-day is Tuesday, and I suppose their incubators are started so as to have chickens come out, say on Monday. On Tuesday the chicks would be dried off enough to put into little pasteboard boxes holding not less than 25, which can be sent by express even in cold weather As sma l anumber as ten can be sent safely after May 1. Twenty-five chickens in a box weigh only 4 lbs. You see they are lighter than eggs. I presume some arrangement is made with the express companies so there shall be no delay. The day I was there, Tuesday, they had sent out about 6000 chickens. I had a box of 25 of different kinds that I brought home to experiment with in my home-made "fireless" brooder. The prices run from 7 to 15 cents. The Leghorns are usually the cheapest. They also make a special low rate on all the "odds and ends" that are left. I supposed at first that they had poultry-yards of sufficient capacity to produce their own eggs for hatching; but I learned that this was next to impossible. They get their eggs from farmers and others in their vicinity who produce them for this particular purpose, the proprietors of the hatchery probably furnishing the stock. I judge this to be so, because they have some very choice high-priced stock. All the parties engaged in the business told me that they had very few losses. The package of chickens is opened in the presence of the express agent, and he certifies to the number of dead, if any. The shipper then replaces these with another shipment or makes some satisfactory arrangement, if the number lost is small. A shipment made from New Washington, O., to Tampa, Florida, occupying four days, was received in very good order, and the chicks did not seem to be much the worse for having lived four days without food or water. In fact, I believe the general decision is now that chicks are better off without any thing to eat for at least 48 hours after they break the shell. Of course, it is important that the purchaser be on hand at the express office to take charge of the chicks just as soon as they are received.

I said in the outset that there is another way of getting money that does your neighbor good. These two boys, with their honest enthusiasm, one for printing and the other for raising chickens, have no idea in their heads of any thing else than earning their money in a way that *will* benefit their neighbors and bless mankind. They may not be exactly trusting in the Lord. I did not see them long enough to find out about that; but I rather think they are; and their hard honest work, especially the particular work of striving to please their customers, is a sort of Christianity that even some church-members do not possess. The chicken boy and the printer boy both have to satisfy their customers in order to prosper. These boys and these people I have described are doing good. We see *that* by the letters they give in their catalogs. And they are going to be *fed*, and *clothed* too; and every boy and man who is doing an honest day's work every day of his life is a credit not only to his country but to the great Father as well. You may be quite sure that these boys have no bad habits. They are so busy they do not have any desire, even if they had the time.

Now, friends, this new rural industry is not only interesting to me because I have made a study of chickens, especially of late, but because it illustrates how things are changing, and what wonderful strides are being made in almost every thing used on the farm as well as in the great cities. T. B. Terry was one of the first to exhort farmers to choose some special line of farming. He decided to be a potato-grower, and bend all his energies to the task of growing more potatoes, and better ones, than had previously been seen. Thousands and thousands have had success far beyond what the farmer did who tried to grow every thing usually secured by a farmer. Bee-keepers will remember when almost every farmer had a few hives; but nowadays the bee-men mostly have large apiaries and make it their sole business. But even the bee-keepers, like poultrymen, are dividing up into specialists. The man who makes the production of honey his special line does not often have queens to offer for sale. The queen-breeder makes it *his* special business. One man produces extracted honey, and another one produces comb honey; and, if I remember correctly, the number of those who work for both comb and extracted honey is growing less every year. There has been talk about having bee-keepers, in localities where it would be expensive to ship honey, make a business of producing *beeswax* and nothing else. I do not know that this has, as yet, been realized. In the poultry business we have egg-farmers where they raise eggs for the table, and nothing else. Then we have broiler-farms; but I am told that these two do not go very well together.

They need a different strain of fowls for broilers (or capons) from those for eggs only. In these large establishments they grow special breeds for special purposes, where they have single male fowls worth a thousand dollars or more—that is, they *claim* they are worth that, but it looks to me, however, as if these very high-priced fowls come pretty near the line of what the socialist paper said about the man who got a dollar that he had not earned.

Last, but not least, it looks as if somebody who is an expert, and has his heart and soul in the business, is in the future *going to hatch the chickens.* For instance, a busy man or woman can not very well afford to fuss with a single incubator. If they do it for fun or pastime, all well and good; but when one is in the business he can almost as well run a dozen incubators placed in a proper cellar as to have just one. I thought at one time that sitting hens might be safer and simpler than incubators; but during the last two or three attempts at setting my hens, they broke so many eggs, especially where I undertook to give them twenty or more, that I began to think I preferred the incubator. Another thing, one of my hens made a very good hatch out in the woods down in Florida, in a grassy thicket, where you could hardly crawl through. I could catch the sitting hen; but the chicks hid in the grass and bothered me so much that I almost concluded I did not want to set another hen.

They claim they can furnish hatched chickens at just about double the price you would have to pay for eggs of the same kind; and I judge there is but very little difficulty in raising the chickens by our best modern methods after they are once hatched. If this were not so, the customers of former years would not be patronizing these same establishments year after year.

Now, what lessons are we to learn in regard to this new development and the new condition of things that is coming up all around us? Some of us older people often get into a way of speaking about the "good old times when we were young." Yes, we may get the idea into our heads that the world is going to be "civilized out of existence," as I have mentioned, unless something is done about it. But I think that, when we come to look the situation fairly in the face, we shall recognize the hand of a loving Father in it all. Please say to yourself when you are tempted to complain at modern innovations, "Lord, help us to learn the lesson thou art striving to teach us;" and then go on smilingly, trying to see the good side and overlook the objectionable features of the new ways of doing things that are coming up all around us. And let us finally decide, in the language of our text, to "trust in the Lord, and do good;" and have faith to believe that we *shall* be "fed" and clothed.

### DAY-OLD CHICKS, AND "FIRELESS" BROODERS.

At friend Uhl's I saw a very bright young woman handling the chicks and otherwise helping in the incubator-room; and it occurred to me that this is emphatically a woman's work. Who can handle chicks, especially "baby" chicks, to better advantage than women or girls?* And, by the way, that I may know how fast this new industry is spreading I wish all those who make it a business, who are taking GLEANINGS, would give me their names on a card I believe it is an industry that should be encouraged. I will give the names of all free of charge. Just one thing more: Will all those who have tested the fireless or lampless brooder please give me a postal-card report as to how far they have succeeded? I have had 25 chicks two days in the home-made "fireless;" but last night, when there was a rather heavy freeze and a strong north wind, I put them in the house over night Perhaps I did not need to; but I had not quite courage enough to leave them *entirely* without any aid from artificial heat.

### CELERY CULTURE IN MANATEE CO., FLORIDA.

On pages 556 and 557 I give you some halftones showing Mr. Lattimer's five-acre celery-farm described in our last issue. On p. 160 of GLEANINGS for Feb. 1 I also gave a brief account of Mr. A. F. Wyman's irrigation with the overhead sprinkler system. Mr. Wyman also includes celery in his plant of 35 acres. It was my good fortune to meet both of these progressive men at Bradentown a few days ago. While congratulating them on the success of their respective celery-farms I suggested that Mr. Lattimer's two big artesian wells accomplished the irrigation at probably less expense than Mr. Wyman's expensive sprinkling outfit. The latter gentleman, however, took me up at once and said, "No, no, Mr. Root, you have got it entirely wrong. It does not cost me nearly as *much* to irrigate my celery with the appliance I now have as it does friend Lattimer, and I think Mr. L. will agree with me."

When I visited the Lattimer plant I told you the water looked as if it was almost knee-deep in some furrows between the plants; and with furrow irrigation I am told it is often necessary to give the celery too much

* My good friend Uhl is a very pleasant sort of man, and some of the expressions in his catalog are quite refreshing. For instance, in his directions how to handle chicks after you get them at the express office he says:

As soon as you receive the chicks put them in a warm place, in a good brooder or with hens. Do not let them stand around and holler. It is very important to feed only a little at first, as they are likely to eat or drink too much.

After I got my chicks home, and they got a little too cold, I could well appreciate his warning, "Do not let them stand around and *holler.*"

water in some places in order to get the water to the spots that have not enough. Perhaps a careful grading and a right slope of land would remedy this somewhat. With the overhead sprinkling, however, the water can be put just where it is needed, and nowhere else; and, if I am correct, the amount of water required is much less than where it comes in the furrows. Where the soil is very porous, as it is almost all over Florida, quite a large portion of the water in the furrows will go down below the wants of the plants; whereas with the overhead sprinkling, none of it, practically, soaks away where it is not wanted. The principal advantage of the Skinner sprinkling system is, if I am correct, that the man who runs the engine can direct the water to any point and in any amount; whereas with the furrow system it requires several men to direct the water and get it where it is needed most and not use too much. The ground should be thoroughly underdrained with tiles with either system, in order to get rid of the overplus of water either from excessive rains or irrigation.

Considerable is done in some regions in Florida in the way of sub-irrigation by running the water into tiles. Now, some of the soils in Florida, especially in the drained swamps that are so suitable for celery, sometimes break up in clods as the ground does here in Ohio, and there is no way to break up these clods and get the ground friable except to wait for what we call a "summer shower." With the sprinkler system these clods can be moistened just enough to let the harrow pulverize them thoroughly; and in setting out plants you can have not only the soil but the *air* also moistened up by the sprinklers until the plants have taken root and can stand the hot sun.

I visited the Wyman plant several times. There is, all together, about 35 acres under this overhead irrigation; and I tell you it is a wonderful sight to see a veritable summer shower, cooling the air and refreshing the plants at the close of a hot summer day. The sprinkling is mostly done toward sundown, and from that time on until midnight or later. Where the water is limited, there is not nearly so much loss by evaporation as when the sprinkling is done in the day time. When you look off toward the work of the sprinklers, and see it at just the right angle, just as the sun is going down, it is one of the most beautiful sights I ever beheld. The pressure is such from the engine that each tiny stream of water goes up in the air perhaps 12 or 15 feet; and when the pipes are turned to throw the water the greatest distance, the course of the stream is something like that of a rainbow; and the sight of ten thousand streams of water (I think there must be pretty nearly that number) curling up in the air at regular distances, each tiny raindrop flashing in the sunshine, was enough to make me want to sail my hat up in the air and and shout in regular boy fashion.

Just one thing more that recommends the sprinkling system. They claim that, when a frosty night comes, by turning on the water they can largely obviate the danger and damage from frost. This was tried once during the winter; but at the time we had the frost (at least in some localities) there was an exceedingly cold north wind; and a cold wind seems to hurt some tender stuff almost as much as a frost. I believe, however, that the water made the damage to the growing stuff much less than it would have been without it. I feel quite certain that it may protect many plants from injury from frost, because I have seen the sprinklers at work when they seemed to throw a spray that produced a filmy mist that floated over the garden like a cloud. Both farms were shipping celery at the time I left, and, so far as I could learn, the quality was first-class, without any particular difference resulting from the respective methods of irrigation.

## Temperance.

### TAKING COURAGE WHEN YOUR ENEMY TELLS LIES ABOUT YOU.

I have always admired the *Sunday School Times*, but more than ever since they are backing so strenuously the temperance wave now sweeping over the land. I have for some time noted the outrageous falsehoods which the brewers and liquor-dealers are using, and I was wondering if the people generally would not soon begin to detect the glaring untruth and refuse to be influenced by their stories. Now see how the *Times* presents the whole matter:

#### WHY THE ENEMY GETS DESPERATE.

When the Devil can use truth effectively he does so. He is shrewd enough to resort to lies only as a desperate measure; therefore when he begins lying, those on the other side ought to feel much encouraged. There is great cause for encouragement just now in the ranks of the temperance workers. For example, the Associated Prohibition Press notes that on March 2 a special despatch to the leading papers throughout the United States stated that the United States Pure-food Expert (Dr. H. W. Wiley) had declared in an address the evening before that the man who "never takes a drink of whisky is a mollycoddle," and had advised young men to drink. In a statement given out March 5, Dr. Wiley vigorously denies the words attributed to him, and remarks, "I believe the general effect of alcohol on mankind is wholly bad. I further said that I was in theory a prohibitionist; but there were difficulties in the way of prohibition, and that the better plan would be to abolish the saloons. I did not suggest or advise our young men to drink liquor of any kind, but said it was very bad." Again, it is noted that on March 3 the *Milwaukee Sentinel* quoted the Rev. Henry Coleman, a leading prohibition worker of Milwaukee, as saying, "Prohibition does not prohibit, and you will always find that there is more liquor drunk in prohibition districts than there was before prohibition was enforced." Upon the basis of this alleged quotation the *Sentinel* preached a sermon in favor of free whisky. The next day the *Sentinel* published an absolute denial of the alleged statement from the Rev. Mr. Coleman himself. These things would not occur if the liquor interests were having an easy time of it.

Dr. Wiley has been the friend of bee-keepers, and we are all deeply interested in seeing him quoted correctly before the people.

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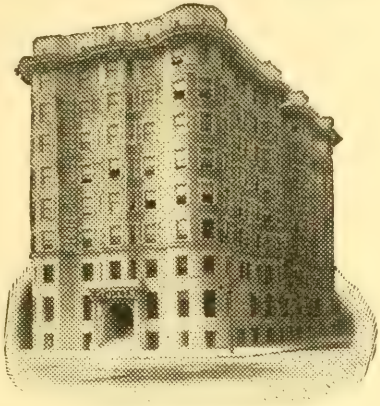

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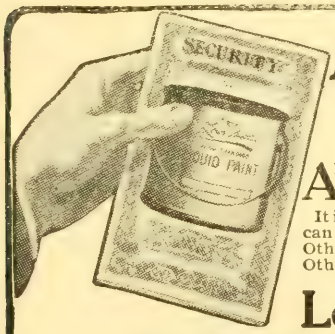


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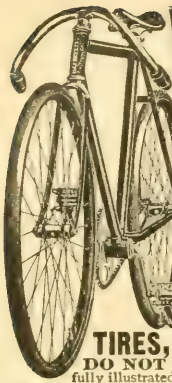

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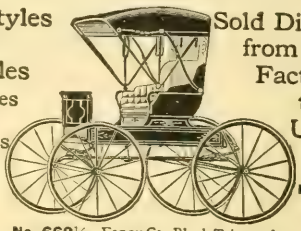

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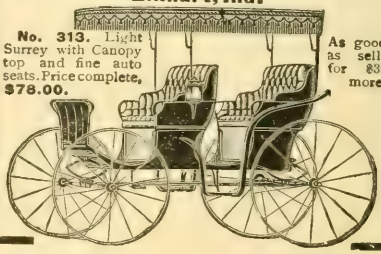

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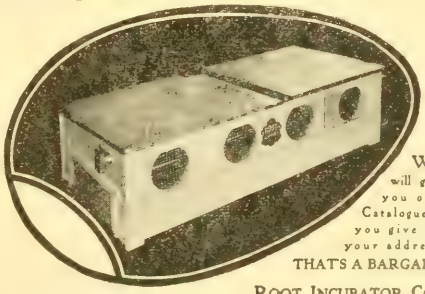

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Bateman Mfg. Co. Box 120G Greenloch, N. J.

# The Young Man or Woman

**who is a High-School Graduate**

contemplating the study of medicine will receive a catalog if inquiry be made of

**W. B. HINSDALE, M. D.,**
Dean of Homeopathic Dept. of University of Michigan
**ANN ARBOR, MICH.**

**The National Fruit Grower** is a monthly publication of great importance to growers of fruit. The Spraying Department each month is worth the yearly subscription price of 50 cts.

SEND 10 CTS. FOR THREE MONTHS' TRIAL SUBSCRIPTION.

**The National Fruit Grower, St. Joseph, Mich.**

**DON'T WORRY OVER MONEY MATTERS** but send for sample copy of Inland Poultry Journal and let us tell you how to make money out of poultry. Two full pages in colors, reproductions from oil paintings that cost us $1000.00. They are FREE.
**Inland Poultry Journal Company**
**15 Cord Building, - Indianapolis, Ind**

# PATENTS.

**Twenty-five Years' Practice.**

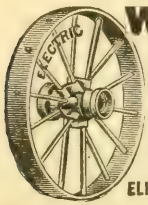
**CHARLES J. WILLIAMSON,**
**Second Nat'l Bank Bldg., Washington, D. C.**

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

# Duroc Jersey, Tamworth, and Hampshire Swine a Specialty.

Finely bred and eligible to registry. White Leghorn and Barred Rock eggs; fancy strains. Eggs, 30 for $1.50; $4.00 per 100. Narragansett turkey eggs, 12 for $3.00. Scotch Collie puppies. Also the best herd-books for recorded stock. Satisfaction guaranteed. Send for circular now. Address

**Jno. M. Wheeler, Winchester, Ky., Rt. 4.**




**WAGON SENSE**

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

**Electric Handy Wagon.**

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

**ELECTRIC WHEEL CO., Box 95, Quincy, Ill.**

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLDG. CLEVELAND, OHIO.**

# NEW GOODS! BIG STOCK!

**New Warehouse** **Root's Goods**
**Prompt Shipment** **Low Freight**

**EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.**

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
**241 BULL ST. SAVANNAH, GA.**

**If You are Located in**

# West Virginia or Ohio

or anywhere else, order ROOT'S GOODS from PEIRCE and save time and freight.

**EDMUND W. PEIRCE,**
**136 W. Main St., Zanesville, O.**

BIG STOCK OF A. I. ROOT CO'S AND MARSHFIELD CO'S
**BEE-SUPPLIES AT MANUFACTURERS' PRICES**
For cash sent in April, deduct 8 per cent; for cash sent in May, deduct 7 per cent; take their 1908 price lists if you have one. If not, send for one or both. S. D. BUELL, Union City, Mich.

**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **Boston**

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**

# ROOT'S BEE-SUPPLIES

**AT SPRINGFIELD, MASS.**

New Goods. Free Catalog. 'Phone.
**F. R. DANIELS, 117 FLORENCE ST.**

FOR SALE.—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

# THE BEE-KEEPERS'

# Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND

**AN IMMENSE STOCK OF HONEY-CANS**

(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

| | |
|---|---|
| 12-in. 4-row shipping-cases with 3-in. glass | $17.00 per 100 |
| 9¼-in. 4-row shipping-cases with 3-in. glass | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass | 9.35 per 100 |
| 6¼-in. 3-row shipping-cases with 3-in. glass | 9.80 per 100 |
| 7⅛-in. 3 row shipping-cases with 3-in. glass | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 27 cts. cash; in trade, 30 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

Great Prize Contest closed May 1; results published in GLEANINGS May 15.

**UDO & MAX TOEPPERWEIN**

1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

# ITALIAN Queens

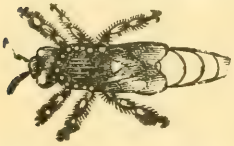
and bees, and nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Our stock is northern-bred and hardy. We just visited our outyards (all wintered on summer stands), and not a colony is dead to date (March 18). Some hives have lost scarcely a bee, so it appears. BROTHER BEE-KEEPER, how do you like such stock for hardiness? A party up in Maine got 50 nuclei of us several years ago. We just received a letter from him. He is after more of our bees, because last season he got 2200 pounds of honey which sold for 22 cts. per pound. Our stock is well known throughout the United States. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Free circular and testimonials. Price of stock as below.

| Prices of Queens before July. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $1 00 | $5 00 | $ 9 00 |
| Tested queens | 1 50 | 8 00 | 15 00 |
| Select tested queens | 2 00 | 10 00 | 18 00 |
| Breeders | 4 00 | | |
| Golden five-band breeders | 6 00 | | |
| Two-comb nuclei, no queen | 2 50 | 14 00 | 25 00 |
| Three-comb nuclei, no queen | 3 50 | 20 00 | 35 00 |
| Full colonies on eight frames | 6 00 | 30 00 | |

ADD the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

## QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio

## ITALIAN QUEENS



Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen, $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

J. L. FAJEN, . ALMA, MO.

## Queens from Southwest Florida

From very best stock, furnished by The A. I. Root Co.; reared on the island where A. I. Root was formerly located. Prompt shipments and correspondence solicited. I. T. SHUMARD, Osprey, Manatee Co., Fla.

## Queens FOR 1908.

Finest Goldens bred in America. Send for my latest circular and prices — "and be convinced."

DANIEL WURTH, . PITKIN, ARK.

## GOLDEN ITALIAN QUEENS, $1

**Six for $5.**

Safe arrival and satisfaction guaranteed.
18 years' experience. Circular.

J. B. CASE, Port Orange, Fla.

## GOLDEN-ALL-OVER and RED-CLOVER ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers. Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $5.00 | $9 00 |
| Select untested | 1.25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.
I am booking orders now, delivery after May 25.

Wm. A. Shuff, 4426 Osage Ave., Philadelphia, Pa.

## Taylor's Strain of Italians is the Best

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3 00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

J. W. TAYLOR & SON, Beeville, Bee Co., Texas.

## Italian Bees and Queens

from Root's red-clover stock of golden Italian queens. Untested, 75 cts. each; six, $3.75. Select untested, $1.00 each; six $5.00. Tested, $1.50 each; six, $8.00. Select tested, $2.00. Two frame nuclei, with untested queen, $2.25. Orders filled in rotation. Send all orders to E. A. SIMMONS, GREENVILLE ALA

## NOT CHEAP QUEENS, BUT QUEENS CHEAP

500 Best Strain Italian Queens Ready to Mail March 1st.
Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

W. J. LITTLEFIELD, LITTLE ROCK ARK.

## The Time To Place Your Order for QUEENS

for spring delivery is here. Order now (with partial payment if not convenient to send all) and state when you want delivery. When ready for the queens, send the remainder. By so doing I shall be able to handle your order without the usual delays incident to the rush orders when the season is on.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested, in May and June, | $1.00 | $5.50 | $10.00 |
| Untested, after July 1 . . | .75 | 4.00 | 7.50 |

Selects, 25 cents extra. Tested, May and June, $1.50; after July 1, $1.25. Nuclei and full colonies ready May 1. Catalog for 1908 free. Send for one.

**GEO. W. BARNES, Box 340, NORWALK, O.**

## Westwood Red-clover Queens

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, $1; tested, $1.25. Address

New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.

## W. H. Laws

is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled. Testimonials enough to fill this book. If you are going to improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10 00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

## ITALIAN QUEENS BY RETURN MAIL OR MONEY REFUNDED.

Warranted, $1.00 each, six for $5.00; tested, $1.50 each. Circular free.

**D. J. BLOCHER, PEARL CITY, ILL.**

## FOR SALE=Queens

of my famous Red-clover stock. Untested, 50 cts. each; select untested, 75 cts. each; tested, $1 each. Nuclei, $1 per frame. Golden queens, same price.

**H A ROSS, 1709 Upper Second St., Evansville, Ind.**

## How are Your Bees?

### Any Queenless Colonies?

If so, send for a queen at once. We can furnish by return mail fine tested queens, reared last fall, wintered in four-frame nuclei, three-band Italians, none better, $1.00 each. Satisfaction guaranteed. Send for price list.

**J. W. K. SHAW & CO., Iberia Parish. Loreauville, La.**

## Queens Queens

of the

## FINEST POSSIBLE BREEDING

BRED BY

## F. J. WARDELL,

**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen . . . . . | $1.25 |
| Select untested queen . . . . | 1.50 |
| Tested queen . . . . . | 2.50 |
| Select tested queen . . . . . | 3.50 |
| Breeding queens . . . . . | 6.00 |
| Select breeding queens . . . . | 9.00 |
| Extra select " 1 year old, | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

## 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20 00 |

Breeders, $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

## New Goods New Quarters

ONLY ONE THING WANTED

## New Customers

THAT'S YOU

**Geo. S. Graffam & Bro.** Office 47 Main St., Bangor, Me.

## Honey-cases for Sale.

Price 30 cts. per case. Two cans to the case. Both cans and cases in A-1 condition. For lots of 100 or more write us for price. **Michigan White-Clover Honey Co., Detroit, Mich.**

# BARGAINS IN BEE-FIXTURES.

We offer at reduced prices quite a list of goods located at various points, and chiefly of styles not at present listed in our catalog. You may find here something which you can use to advantage. Orders may be sent direct to Medina, or in some cases direct to the dealer or branch house where the goods are on hand. **In ordering, be sure to mention that you saw it in "Bargain Notice" in GLEANINGS.**

**THE A. I. ROOT CO., Medina, O.**

## EXTRACTORS.

At Apopka, Orange Co., Fla., one six-frame Cowan extractor for L. frame, which has been used in all about 30 days; was sold five years ago, and is the old-style chain reversing type; sold new for $30 00. We offer this for $17.00, free on board at shipping-point.

At Medina, O., three eight-frame Root Automatic extractors which have been to Cuba and returned; have been somewhat rusted and corroded by salt air; well cleaned up, and in good condition. With ordinary hand-power gear we will sell at $32.00 each; regular price $40.00. With power gear and belt complete, without engine, $36.00; regular price, $45.00.

No. 4 Novice extractors at Mechanic Falls, Me.; also at Chicago, Ill.; also Des Moines, Iowa; new stock, but an over supply, offered at $7.75 each; regular price, $8.50.

No. 15 Cowan extractor at Mechanic Falls, Me.; new machines in good condition as put out three years ago; offered at $11.00 each.

**DADANT UNCAPPING-CAN** at St Louis, Mo., and in New York city: offered at $7.75 each; new stock in good condition, somewhat shop-worn.

**GERMAN WAX-PRESS** at St. Louis, Mo., and in New York city; also at Medina, O. These are not of the latest pattern, but good machines in good condition; offered at $9.00 each; regular price, $12.00.

**BOARDMAN SOLAR WAX-EXTRACTOR** at Des Moines, Iowa, and at New York city, in good condition at $6.00; Regular price, $7.50. Also at New York a Doolittle solar wax-extractor at $3.25.

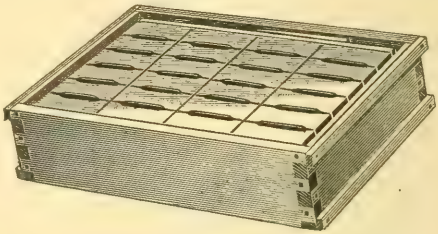
## PARTS OF HIVES.

**DANZ. NAILLESS COVERS,** made of three pieces, tongued and put together with paint in joints and crate-staples over joint at each end, then a galvanized channel steel cleat at each end; the same style as our metal-bound super-cover, only made of ⅞-in. lumber. Special price to close out, 20 cts. for 8-frame; 22 cts. 10-frame, which is ⅔ regular price.

The A. I. Root Co., Syracuse, N.Y., 30 D-8 and 68 D-10
The A. I. Root Co., Philadelphia, Pa. 70 D-8 and 500 D-10
The A. I. Root Co., Medina, O. . . . 200 D-8 and 300 D-10

**COMBINED BOTTOM AND HIVE-STAND.** This is a very convenient and serviceable hive-bottom which sold at the same price as the hive-cover, or was included instead of the regular bottom at 5 cts. per hive extra; can be had from the following places in 8 or 10 frame size as listed, at the price of the regular bottom, in lots of 5 or more, 20 cts. each, 8-frame; 22 cts. each, 10 frame.

M. H. Hunt & Son, Redford, Mich., 30 C-8 and 20 10
The A. I. Root Co., Syracuse, N. Y., 30 C-8 and 100 C-10
The A. I. Root Co., Philadelphia, Pa., 100 C-8 and 10 C-10
The A. I. Root Co., Chicago, Ill. . . . 80 C-8 and 80 C-10
The A. I. Root Co., Medina, O. . . . 100 C-8 and 100 C-10
John Nebel & Son, High Hill, Mo., 50 C-8



**DOVETAILED T SUPER** for producing honey in 4¼ sections supported on T tins. These are mostly provided with T fences for the 4¼x1½ plain section.

Buck & Wilson, Augusta, Kans., 25 4TP-8; price 50 cts. each for the lot, or 60 cts. each in lots of 5.
The A. I. Root Co., Chicago, Ill., 50 2TP-8.
The A. I. Root Co., Philadelphia, Pa., 25 2TP-8 and 10 Hilton Dov. T supers, which are the same with thumb-screws in one side.
The A. I. Root Co., St. Paul, Minn., 10 2TP-8 and 10 2TS-8 Hilton Dov. T supers.
Price 35 cts. each in lots of 5 or over.

**THICK-TOP STAPLE-SPACED FRAMES,** L size, with ¼x⅞-inch end-bars, at $2.25 per 100, or $10 00 per box of 500.

The A. I. Root Co., Philadelphia, Pa., 4000 frames.
The A. I. Root Company, Chicago, Ill., 2500 frames.
At both points are also some of the same style, jumbo depth, at 25 cts. per 100 extra.

**ALL-WOOD FRAMES,** regular style, with The A. I. Root Co., Philadelphia, Pa., 4000; price $1.80 per 100, or $7.50 per case of 500.

**HOFFMAN FRAMES** with square-edge end-bars, otherwise regular; price $2.50 per 100.

Blanke & Hawk Supply Co, St. Louis, Mo., 300 frames.
The A. I. Root Co., Philadelphia, Pa. . . . 1700 frames.

**CHAFF DIVISION-BOARDS,** regular pattern; price in flat, 10 cts. each; nailed, 20 cts. each, in lots of 10 or more.

Blanke & Hauk, St. Louis, Mo., 50 nailed at 20 cts. ea.
The A. I. Root Co., Philadelphia, Pa., 200 " at 20 cts. ea.
W. S Pouder, Indianapolis, Ind, 60 nailed at 20 cts. ea.
M. H. Hunt & Son, Redford, Mich., 75 in flat, 10 cts. ea.

**TEN-FRAME DOVETAILED HIVE-BODIES** with molded-top Hoffman frames; no division-board; listed as 5-10

With The A. I. Root Co., New York city, 300, offered in regular crates of 5 at 60 cts. each, or $3 00 per crate; lots of 50 or more at 50 cts.

The A. I. Root Co., St. Paul, Minn., have a lot of Danz. hives and supers; also ten-frame Dovetailed hives, nailed and painted, second hand, in good condition, which they will sell at a special price. Correspond direct with them.

**STANDARD ROOT SMOKERS.** We have here at Medina something less than 100 of these smokers, which have been to Cuba and returned. They are somewhat rusted but may be made serviceable by one not too particular for appearances. Will sell them at 50 cts. each, or $5.00 per dozen; by mail, 25 cts. each extra.

## Classified Advertisements.

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Help Wanted.

WANTED.—A young bee-keeper who wants to learn the business, and is willing to work anywhere.
W. L. COGGSHALL, Groton, N. Y.

## Post Cards.

Temperance Post-cards. 20 gems containing inspiring temperance quotations, illustrated, for 15c.; 40 for 25c; 100 for 60c. Premium coupon and seed catalog free with every order. A.T.COOK, Hyde Park, N.Y.

## Plants.

Beautify your homes with our plants Twelve all different geraniums, $1.00; salvia, 40c per doz.; asters, pansies, and verbenas, 25c per doz; coleus, 40c per doz. Fine plants. Express and postage charged to purchaser. List free.
HAMMERSCHMIDT & CLARK, Dept. A, Medina, O.

## Rugs.

Be sure to send for our circular before you have your old carpet made into rugs. A postal will bring it. SANITARY RUG CO., Delaware, O.

## Poultry Offers.

Pekin duck eggs 13, $1. J.M. ACKLEY, Hematite, Mo.

FOR SALE.—White Wyandottes best breeding, 15 eggs, 75 cts.; 30, $1.25. J.F.MICHAEL, Winchester, Ind.

Fine R C.R.I.Reds, W.Wyandottes, and Barred R.; 15, $1.50; Muscovy duck eggs, 12, 90c. C. FAJEN, Alma, Mo.

FOR SALE.—Thoroughbred Toulouse goose eggs, 15, $3; Guinea, 15, $1.25. M. L. CALDWELL, Otsego, Mich.

FOR SALE—Eggs from my select S.C.W.Leghorns, B. P.Rocks, $1 per 15. C.R.GUERNSEY, E.Cobleskill, N.Y.

FOR SALE.—Choice Silver-spangled Hamburg eggs, $1.50 for 15. ELIAS FOX, Hillsboro, Wis.

FOR SALE.—Standard-bred snow-white Rock eggs. 15 $1.00; 50, $3.00; 100, $5.00. Satisfaction, or money back. GEO. W. COOK, Spring Hill, Kan.

FOR SALE.—W. P. Rocks, Fishel and Empire strain. I have twenty select females headed by two extra-fine roosters. Eggs, $2.00 per twenty.
W. M. PARRISH, Rt. 8, Lawrence, Kan.

FOR SALE.—Eggs for hatching from choice stock of the "Best Fowls on Earth" (Rose Comb Rhode Island Reds), $1.00 per 15. BURDETT HASSETT, Box 45, Reliance, Va.

FOR SALE.—Eggs for hatching, S. C. Brown, Buff, and White Leghorns; Buff and White Rocks; Buff Wyandottes and S. S. Hamburgs, $2 00 per 15; $3 50 per 30. PETER H. LEVEY, Preston, Minn.

EGGS FOR HATCHING.—White Holland turkeys, Rose Comb Brown and White Leghorns; S. C. Black Langshans and Minorcas; Barred and White Rocks; White Wyandottes; Pekin and Rouen ducks. Catalog for stamp. JEWETT ALLEN, Walnut Grove, Minn.

Fifteen S. C. B. Leghorn eggs given free with every order for six or more queens if mentioned with the order. See ad., page 481. Regular price for eggs, $1.00 per 15; $1.25 per 30; positively by return express.
J. E. HAND, Birmingham, O.

## For Sale.

FOR SALE.—Vermont bee-keepers should have my 1908 price list. C. J. LAMB, East Calais, Vt.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. W. P. SMITH, Penn, Miss.

Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.
KENSINGTON CATTERY, Marion, Ohio.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS, (Root's Goods.) Paden City, W. Va.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer. CLEVELAND HEALTH FOOD CO., Cleveland O.

FOR SALE.—Best Wisconsin sections, per 1000, $4.00; 2000, $7.75; 3000, $11.10; No. 2, 50 cts. less. Discount on Root's and Danz. hives and other supplies. Fifteen eggs, B. P. Rocks and Wyandotte, $1.00; Pekin ducks, 11 eggs, $1.50. H. S. DUBY, St. Anne, Ill.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cts. each, postpaid. FRANK ALEXANDER, Delanson, N. Y.

FOR SALE.—Two hundred 8-frame dovetailed hives (Root's make), 200 5-gal. honey-cans in cases (new) at Lovelock, Nevada. Address C. K. ERCANBRACK, Watsonville, Cal.

FOR SALE.—Well-established queen-rearing business, widely advertised for two years; large circle of steady customers; best testimonials; orders at hand; best location and climate; no speculation. Reason for selling, departure for Europe. Write immediately to A. E. TITOFF, Ioamosa, Cal.

## Real Estate for Bee-keepers.

FOR SALE.—Three village lots with a three-room house, small barn and henhouse, and 100 colonies of bees in two-story dovetailed comb-honey hives, extractor and all fixtures; good location; satisfactory reasons for selling. Write for particulars if interested. S. LAMONT, Jarretts, Minn.

FOR SALE.—Small farm and apiary in Crawford Co., Mo. Write for description. W.T.KING,Leasburg,Mo.

FOR SALE.—Good bee and fruit ranch. Price $4500; 200 acres of land; 20 acres tillable; 500 apple-trees from 2 years old to 10; 200 English walnuts; 50 peach-trees; good small house, and barn. The rest of the ranch is mountain covered with live oak—say 4000 cords of wood. One of the best sage-brush locations in central California; 200 stands of good bees in patent hives on full foundation; extractor-tanks, honey-house; only 12 miles from San Luis Obispo, Cal. This place is well watered with plenty of good spring water, and a snap if taken soon. OTIS RAMAGE, San Luis Obispo, Cal.

## Wants and Exchange.

WANTED.—Several pairs of gray squirrels. State price. JOHN RICK, 434 Oley St., Reading, Pa.

WANTED.—Refuse from wax-extractors and old comb for cash. ARCHIE COGGSHALL, Groton, N.Y.

WANTED.—60 colonies of bees or a large apiary to work on shares. ARTHUR LAING, Acton, Ont., Can.

WANTED.—Bees. Give description and price at first writing. F. B. CAVANAGH, Flint, Mich.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

## Bees and Queens.

FOR SALE.—Italian and Carniolan queens, untested, 75 cts.; tested, $1.00. GEO. E. KRAMER, Valencia, Pa.

Early queens, 70 cts.; after May 15, 60 cts.; also bee-supplies. List free. A. RATTRAY, Almont, Mich.

FOR SALE.—52 colonies of bees in good improved hives. ALBERT ELDER, Box 102, Dansville, N. Y.

FOR SALE.—Untested golden Italian queens; good queens; safe arrival. One, 60 cts.; three or more, 50 cts. each. D. T. GASTER, Rt. 2, Randleman, N. C.

FOR SALE.—Fifty colonies of Italian bees, 8-frame Dovetailed hives, straight combs, no disease; $5.00 per hive. P. H. DAVIS, Camden Place, Minneapolis, Minn.

FOR SALE.—Fifteen mismated and hybrid queens, Italians, cheap at 35 cts. each, by May 1 by return mail. L. WERNER, Rt. 2, box 94, Edwardsville, Ill.

FOR SALE.—35 colonies of Italian bees in fine condition and in modern hives. Address A. J. WARNER, Elmira, N. Y.

FOR SALE.—150 colonies of bees in uniform hives, free from disease. Also 150 empty hives. S. E. TENNANT, Schoharie, N. Y.

Save money by getting full colonies and nuclei; also one pound of bees and queens of same strains, bred in Medina apiary, from Mechanic Falls branch. J. B. MASON, Mechanic Falls, Me.

FOR SALE.—400 colonies Italian bees in 8 or 10 frame Dovetailed hives with Hoffman frames, at $6.00 per colony. In lots of 10, $5.00 per colony. F. A. GRAY, Redwood Falls, Minn.

FOR SALE.—Selected young Italian queens, bred for superiority in honey production instead of color. Single queen, 75 cts.; 6 for $4 00; one dozen for $7.50. Also Golden all over,Cyprians,Carniolans,and Banats. JULIUS HOPPEL, 414 Up. 4th St., Evansville, Ind.

FOR SALE.—45 colonies of bees in 8-frame Hilton chaff-hives; straight combs, built on wire. ALBERT FIEN, Falmouth, Mich.

FOR SALE.—Thirty colonies of bees; mostly young queens of 1907; about half from J. P. Moore; have produced an average of 190 lbs. of honey per colony for 1905 and '6. Complete outfit of supers, extracting-combs,extractors,etc. G.H.EVANS,Napanee,Ont.,Can.

FOR SALE.—40 colonies Italian bees in new 10-frame Dov'd hives; combs built on full sheets of wired fdn.; Hoffman frames; Danz. super with each. All are painted two coats white. $100 for the lot, purchaser to prepare them for shipment. J.B.RATCLIFFE,Amboy,Minn.

FOR SALE.—After May 15, Italian, Carniolan, Caucasian queens, untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Nuclei, after June 10, 1, 2, 3 frames, including queens, $2, $3, $4. Orders booked now. EDW'D REDDOUT, Baldwinsville, N. Y.

MOORE'S strain, and golden Italian queens, untested, $1.00; 6, $5.00; 12, $9.00. Carniolan, Banat, and Caucasian queens, select, $1.25; 6, $6.00; 12, $10.00. Tested, any kind, $1.50; 6, $8.00. Choice breeders, $3.50. Circular free. W. H. RAILS, Orange, Cal.

## Honey and Wax For Sale.

FOR SALE.—302 lbs. of No. 1 white-clover comb honey in 4¼ plain sections, no-drip cases; 17 cts. a pound. E. D. TOWNSEND, Remus, Mecosta Co., Mich.

FOR SALE.—5000 lbs. clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Fancy orange-blossom in 60-lb. cans, 8¼ cts; water-white sage in 60-lb. cans, 8 cts; light-amber in 60-lb. cans, 7¾ cts; dark-amber in 60-lb. cans, 7½ cts. E. R. PAUL & CO., Milwaukee, Wis.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans. ROBT. A. HOLEKAMP & SON, 4263 Virginia Avenue, St. Louis, Mo.

FOR SALE.—White comb honey, No. 1, average 23 lbs. to the case of 24 sections, $3.25 per case; amber, $2.50. Fancy white extracted in 60-lb. cans, 10½c; amber, 9½c. HAROLD HORNOR, Jenkintown, Pa.

FOR SALE.—Choice extracted honey for table use—thick, well-ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample 10 cts. J. P. MOORE, queen-breeder, Morgan, Ky.

## Honey and Wax Wanted.

WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 S. Water St., Chicago, Ill.

## Bee-keepers' Directory.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. Yates, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Neb.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426 Osage Ave., Phila., Pa.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

BEE-SUPPLIES.—Send list of wants for low prices and best goods to E. T. ABBOTT, St. Joseph, Mo.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa. Queen-rearing outfits and books: new 40-p. catalog free

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND, Birmingham, Erie Co., O.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

ANGEL is breeding his Golden beauties and bright three-banded Italian queens, but will not offer any for sale this season, on account of not being at home at all times of the season. SAMUEL M. ANGEL, Evansville, Ind.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circular and testimonials. For prices see large advertisement in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular, order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.


# The Hand System

TO satisfy a number of customers we are now making hives to suit the above system, just as the inventor himself uses them. These are not listed in our regular spring catalog, and are not kept in stock at any of our agencies. All orders will be filled from Medina. If ordered early enough, however, they can be forwarded to any one of our branches for redistribution. If you are going to try a few of these hives the coming season, we earnestly urge you to order early before the rush season comes on.

PRICE LIST OF HAND DIVISIONAL HIVE AND PARTS.

We have had numerous calls for divisional hives just as Mr. Hand uses them. We will not list them in our catalog for the coming season, but will make them up to supply on special order, to those who desire to try them, at prices in table below. The outside dimensions being nearly the same as the regular Dovetailed hive, the regular covers and bottoms may be used.

| Each section is 19½ in. long, 5⅛ in. deep outside; upper portion of side removable with clamps to hold it in place. Sections used are 4¼x4¼x1½ plain, split three sides. Furnished in both eight and ten frame size. | Designating or Short Name | Nailed and Painted Each | In Flat | | |
|---|---|---|---|---|---|
| | | | Each | Five | Weight of 5 |
| Hand brood or extracting section, including the frames, springs, clamps, and nails; no foundation | Hand 8-8 | $ 65 | $ 50 | $ 2 25 | 35 |
| | Hand 8-10 | 70 | 55 | 2 50 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and 1-inch foundation starters | Hand 9-8 | 75 | 60 | 2 50 | 35 |
| | Hand 9-10 | 80 | 65 | 2 75 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and full sheets comb foundation | Hand 0-8 | 1 30 | 85 | 4 00 | 38 |
| | Hand 0-10 | 1 40 | 95 | 4 50 | 43 |
| Hand comb-honey section, including section-frames, and fences; no sections or foundation starters | Hand 2-8 | 75 | 60 | 2 75 | 30 |
| | Hand 2-10 | 80 | 65 | 3 00 | 35 |
| Hand comb-honey section, including section-frames, fences, sections, and full sheets foundation | Hand 1-8 | 1 45 | 1 00 | 4 75 | 35 |
| | Hand 1-10 | 1 55 | 1 10 | 5 25 | 40 |
| Hand four-section hive including two brood and two comb-honey sections; no sections or foundation starters | HandCE8822-8 | 3 50 | 2 65 | 12 00 | 180 |
| | HandCE8822-10 | 3 75 | 2 90 | 13 25 | 190 |
| Hand four-section hive including two brood and two comb-honey sections with sections and full sheets foundation | HandCE0011-8 | 6 30 | 4 25 | 20 00 | 200 |
| | HandCE0011-10 | 6 75 | 4 70 | 22 25 | 210 |
| Hand sectional super, no inside fixtures, including clamps, nails, and flat tins | Hand Super-8 | 40 | 30 | 1 25 | 22 |
| | Hand Super-10 | 43 | 32 | 1 35 | 24 |

Hand brood-frames, 4⅞x17⅝x1⅜; ends, 1⅜x$\frac{5}{16}$; top, $\frac{13}{16}$x⅜; bottom, ½x¼ ....$2.00 per 100 in flat; $18.00 per 1000
Hand section-frames, 4⅞x17⅝x1½; ends and top, 1½x¼; bottom, 1½x⅜..... 2.50 " " 22.00 "
Hand fences, 4⅞x17⅝, P style ..... 1.75 " " 16.00 "

**The A. I. Root Company, Medina, Ohio**

The reports of wintering of the bees over the country are generally good. New York State has sent in some unfavorable reports. Along about the middle of March there was not an unfavorable report; but the expected warm weather was somewhat delayed. It has now, April 24, come, and the bees will probably make good for lost time.

MAPLE SYRUP.

We have a good supply of very choice maple syrup which we can supply at $1.00 per gal.; 6 gal. at 95c; 20 gal. or over, 90c. Will be pleased to hear from those interested. Maple sugar is not so plentiful, and we can not offer this at less than 15c per lb. for best; 13c for fair to choice.

CARTONS FOR OUNCE CAKES OF BEESWAX.

We can supply cartons for one-ounce cakes of beeswax, printed with name and address blank, at 35 cts. per 100; 250 for 80 cts.; 500 for $1.50; 1000 for $2.75; by mail, 15 cts. per 100 extra These prices will also include the large carton to contain 32 of the small ones. The complete package weighs 2 lbs., and, when filled, sells to the dealer at $1.00. They retail the cakes at 5 cts. each. Retinned molds for molding ounce cakes cost 35 cts. per dozen; by mail, 40 cts; for two-ounce cakes, 40 cts.; by mail, 50. We do not have cartons to fit the two-ounce cakes. To print your name and address on the cartons will add, 250 or less, 50 cts.; 500, 75 cts.; 1000, $1.00.

DR. MILLER SPLINTS.

We have often had calls for wood splints for use with foundation in brood-frames to prevent sagging, as used and recommended by Dr. C. C. Miller. We have usually made them by sawing them out, and wasted more than three-fourths of the wood in sawdust. We have hit upon a plan of slicing them, thereby saving all the wood, and cheapening the process as well. We can furnish them 8½ inches long for L. frames at 50 cts. per 1000 by mail; 40 cts. shipped with other goods. Small lots at 10 cts. per 100 postpaid. Other lengths can be furnished as well. If shorter, same price in 1000 lots. If longer, add fifty per cent up to 12 inches long.

SECOND-HAND FOUNDATION-MILLS.

We have to offer the following second-hand foundation-mills in good condition. We shall be pleased to hear from any one interested. To such we can send a small sample of comb foundation representing the kind of work produced by the particular machine you enquire about.

No. 079.—6x2½-inch hex. cell thin-super mill, in very good condition. Price $12.00.

No. 078.—6x2½-inch hex. cell thin-super mill, in good condition. Price $12.00.

No. 086.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $12.00.

No. 075.—2 x 9 hex., very old style, on frame with wood base; in fair condition. Price $10.00.

No. 085.—2½ x 6 hex. thin-super mill, in good condition. Price $12.00.

No. 086.—2½ x 6 hex. extra-thin-super mill in extra-good condition. Price $15.00.

No. 096.—2½x10 hex. light-brood mill; almost new; in fine condition. Price $20.00.

No. 097.—2½ x 10 hex. light-brood mill; in fine condition. Price $18.00.

No. 077.—10x2 inch-medium brood round cell, old-style frame, in good condition. Price $14.00.

No. 092.—6x2½-inch hex. cell extra-thin-super mill, in fine condition. Price $15.00.

No. 2275.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $13.00.

SIMPLEX HONEY-JARS.

The factory have assured us that we may again secure this popular honey-jar in several sizes, including the one holding one pound of honey. We have ordered a fresh supply, and expect to have them in stock this next month. They will be packed in reshipping-cases of two dozen each, and the price will be $1.10 per case; 6 cases, $6.30.

NO. 25 HONEY-JARS.

During the past year we have had an unusual amount of trouble with breakage of this jar, even in the reshipping-cases packed with corrugated paper. The breakage occurred either in the porcelain cap or the top rim of the jar where the cap rests. We find we can get this same jar with lacquered tin cap without the center being cut out. This cap is lined with waxed paper wad, which seals tight on the top edge of the jar. This style of cap not only does away with breakage almost entirely, but enables us to furnish the jar at a lower price. We are not yet supplied with the new stock, but expect to have them this month at the following price. They will be packed as usual, two dozen in reshipping partitioned cases. No. 25 jars, tin cap lined, 90 cts. per case; 6 cases, $5.10. We can still furnish from stock the usual style of No. 25 with porcelain caps at $1.10 per case; 6 cases, $6.30.

A BARGAIN IN DANZ. SUPERS AND SHIPPING-CASES.

We offer at a special bargain 120 Danzenbaker ten-frame supers, nailed and painted, filled with section-holders, Hyde-Scholl "M" fences, sections with full sheets of foundation They have been used, but are nearly new and in good condition. Such supers new are listed in our catalog at $1.75 each, yet we offer this lot crated and on board cars at Floresville, Texas, at 50 cts. each for the lot, and will throw in 1000 4 x 5 sections to make good any in the lot which may be broken or missing. In lots of not less than ten the price would be 60 cts. each; 50 at 55 cts. each as they are crated and loaded on cars. There are also 400 shipping-cases to hold 20 4 x 5 sections in the crates as shipped from the factory, which we would sell at $5.00 per crate of 50, or $9.00 per 100 for the lot—that is, $140 cash for goods worth new at carload prices over $340. This surely is a bargain for any one desiring to produce fancy comb honey with equipment that can not be excelled for the purpose. They are not in the right locality for comb-honey production, but should work excellently in some other locality. Send your orders here to Medina.

## Special Notices by A. I. Root.

PHILO'S POULTRY-HOUSE FOR THOSE WHO LIVE IN TOWNS AND CITIES.

We expected to give a picture of this structure in the present issue, but the cut came a little too late. Now you may all look forward to something that is exceedingly interesting and unique in our next issue, in the line of poultry-keeping in town and cities.

THE FIRELESS BROODER UP TO DATE.

It is no more than fair that I should state that I have lost six chicks out of my twenty-five in the fireless brooder, up to date, April 24. But I must also confess that I did not follow Philo's directions given in his book. When we had quite a freeze outdoors I felt sorry for them, and put them near the steam-pipes in the greenhouse. Of course, they got up close to the hot pipes, and I thought they would be all right. The rest of them are now, however, running all over outdoors, under the cherry-trees that are now in full bloom, and they seem to be doing finely. I am inclined to think I "killed them with kindness," for I had no loss at all in Florida (or *almost* none) except some that were killed by accident.

SPROUTED GRAINS FOR POULTRY AND OTHER DOMESTIC ANIMALS, BY PROF. FORBES, OF THE DEPARTMENT OF NUTRITION, OHIO EXPERIMENT STATION, WOOSTER.

I take pleasure in submitting the following, from our Ohio Experiment Station, in regard to the food value of sprouted grains—see page 512. Of course, we shall have to wait for some accurate experiments before coming to a conclusion in regard to the matter. But it would seem from the above that sprouted grains are a benefit in giving the animals variety, even if they do not result in a great saving in the expense of grain feed. We are in hopes there may be at least some truth in the claim that there is a great saving in the amount of grain fed in this way to the poultry.

WOOSTER, O., April 17, 1908.

*Mr. Root:*—Your inquiry regarding sprouted grain has been referred to me for reply. There has recently been organized here at Wooster a department of nutrition for the study of just such problems as the one you suggest. I have been interested for several years in just the point you raise, but have not had opportunity to work it out. I intend to take it up at an early date, however. Several years ago there was a firm at the stock-yards in Chicago which sold a germinator for use with grain intended for feeding, and they maintained a continuous demonstration of the appliance, using several kinds of animals, mostly old "skates" of one sort and another, such as do not usually get any valuable feed. They had no difficulty in getting these old animals rolling fat. They put out an extravagant and ignorant booklet advertising the germinator, but went out of business some time ago. I wrote a number of letters a couple of years ago trying to get hold of one of their germinators, but could get no trace of them.

There is surely an increased digestibility with sprouting, and there is also a change of phosphorus from various forms to lecithin, a compound characteristic of structures in which intense vital activity has been provided for, and which physiologists consider to be of great nutritive value. I have no definite information on the subject of food value, but would judge that the improvement might pay for the handling where grain is expensive. I shall go into the matter at an early date. E. B. FORBES.

SAVING CHICKENS THAT WOULD OTHERWISE HAVE DIED IN THE SHELL.

Quite a good deal of interest seems called forth in regard to this new discovery. It is not exactly *new*, however, because many people practice more or less helping chickens out of the shell toward the close of the hatch. I believe the manufacturers of incubators claim it does not pay. There can be no objection, however, to experimenting with eggs that are not hatched before the 22d day. Philo thinks that many chicks fail to break the shell for lack of air—probably because the shell is too heavy, and may be because the pores are more or less closed. He recommends making an opening with the point of a knife into the air cell. Ehis gives the chick air, and as a matter of course, more strength. Then if the egg is wrapped in a wet cloth to soften the shell, the chicken will ordinarily succeed in getting out. If it does not, you can carefully break away more of the shell. Two years ago I saved several chickens that did not seem to have the strength to get out after they had pierced the shell. After the incubator is opened, the glutinous matter dries down so as to fetter the chicks, seemingly. I have soaked chicken and all in quite warm water, washed them up clean, put them back in the incubator, wrapped them in a wet cloth, and succeeded, I believe, almost every time. One of the boys who was running the baby-chicken establishments I have mentioned said he had also saved chicks in this way; but it took so much time to fuss with them that it was something of a question whether it paid or not. Where you have nothing else to do I think I would try to save all the eggs in this way where either hen or incubator seems to fail.

## Convention Notices.

RESOLUTIONS OF RESPECT.

*Whereas*, There has passed from this life our able and gifted member, Henry Alley, whose long experience, and genius and skill, caused him to be widely known and recognized as an authority in his art, therefore it is

RESOLVED, That in his death the Massachusetts Society of Bee-keepers, and apiculture in general, bear a loss that will be keenly felt; and it is further

RESOLVED, That we tender to his family our deep and heartfelt sympathy, and that a copy of these resolutions be sent to them and also placed on our records as a tribute to his memory. X. A. REED, Sec

Belmont, Mass.

A reporter for the coming National convention is one of the things to be looked after with care. Possibly not more than ten per cent of the members can attend the convention; the rest must depend upon a printed report of what was said and done. They pay their money to support the Association, and we owe it to them to give them a complete and accurate report. The best reporter that we have ever employed is Mr. Geo. Angus, of Toronto, Ontario, Canada He has had a lot of experience in reporting bee conventions, has caught on to the technical terms, and furnishes a report all correctly worded, and ready to be handed over to the printer, without correction. I am pleased to be able to announce that we have secured his services for the coming convention at Detroit, and those who find it impossible to attend may comfort themselves in knowing that they can sit at their own firesides and read exactly what was said and done.

W. Z. HUTCHINSON, *Sec. N. B. K. A.*

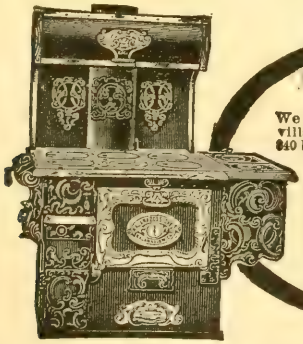
**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.,* **Minneapolis, Minn.**

**Bee-keepers' Supplies Sold**

At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. **W. D. SOPER, Jackson, Mich.**

**EVERGREEN SHADE-TREES.**

White Cedar, 3 to 4 ft., 25 cts. each; Spruce, 3 to 4 ft., 25 cts. each; Balsam, 3 to 4 ft., 25 cts. each. Send for price list and get reduced prices on large orders. Address **SCHUH BROS., CATAWBA, WIS.**



**"A Kalamazoo Direct to You"**

We have more than 100,000 satisfied customers in more than 17,000 cities, villages and towns in the United States who have each saved from $5 to $40 by buying a Kalamazoo stove or range on

**360 DAYS APPROVAL**

direct from our factory at actual factory prices. No stove or range has a higher reputation or gives better satisfaction. You run no risk. You save all dealers' profits. We pay the freight.

**Send Postal For Catalog No. 416**

and see list of towns where we have satisfied customers.

**Kalamazoo Stove Company, Mfrs., Kalamazoo, Mich.**

Our patent oven thermometer makes baking and roasting easy.

# Mr. Bee-Keeper,

Was 1907 a POOR YEAR for you?

It was a GOOD YEAR for users of

# DADANTS' FOUNDATION.

One dealer used 14,000 pounds.

Another dealer used 7,250 pounds. Another dealer used 4,500 pounds. Another dealer used 4,500 pounds.
Another dealer used 6,000 pounds. Another dealer used 4,500 pounds. Another dealer used 3,000 pounds.

*Thousands of pounds sold to the bee-keeper direct, or worked up for him out of his beeswax.*

The DEALER likes DADANT'S FOUNDATION because the bee-keeper likes it.

The bee-keeper likes it because his BEES like it.

The BEES like it because it is exactly like their own comb, so PURE and SWEET and CLEAN.

DADANT'S FOUNDATION is the Standard because it is the BEST.

Wax worked into foundation. Send for our Supply Catalog.

**DADANT & SONS, HAMILTON, ILL.**

# SUPPLIES FOR BEE-KEEPERS

**Every thing you want; all made by us in our own factories--at LOWEST PRICES.**

**The American Bee-keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

# W. T. FALCONER MFG. CO.

DEPARTMENT G. :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# WONDERFUL

## Edison Phonograph Offer

At any time you wish you can have a free concert in your own home—not a concert of one instrument or voice alone, but a concert of band and orchestra music, vocal solos, grand opera as well as comic opera — *anything you like.*

This is the regular Standard Phonograph with the regular horn—a fine outfit—but we furnish besides at only a slight extra expense our **Parlor Grand** Equipment. This we describe fully in our free catalog and circular.

TRADE MARK
Thomas A. Edison

***Mr. Edison says:***

*"I want to see a Phonograph in every American Home."*

# FREE TRIAL!

WHILE this offer lasts we will send to any reader of this paper a Genuine Latest Style Edison Phonograph for **free trial in your own home**—a trial lasting two days to a week. Try the Latest Style Edison in your own home. *Then* if you do not want to keep this wonderful instrument, you may send it back to us at our expense *and we charge you absolutely nothing for the free trial.* **If you like the instrument** with its marvelous variations of entertainment, including the latest popular songs, side-splitting minstrel dialogs, beautiful operatic airs sung by the greatest artists, its dreamy waltzes and stirring two-steps, its orations and elocutionary recitals, you may keep the instrument and send either cash in full or the smallest monthly payments at the **Surprising Rock-Bottom Prices** on the finest Edison outfits.

**$2 a Month** now buys a genuine Edison outfit including one dozen genuine Edison gold moulded records. The finest improved latest style Edison outfit with our **Parlor Grand** Equipment only $3.50 a month. And at **rock-bottom price**, no matter whether you send cash in full or pay on our easiest terms.

**For Cash** in full: So many cash purchasers are getting the finest Edison outfits on free trial that we are obliged to announce again that we can allow no discount for cash. We have already given those who buy on easy payments the **lowest possible price** and we must treat all Edison customers alike.

LOOK FOR THIS TRADE MARK ON EVERY INSTRUMENT
Thomas A. Edison.

***SIGN the Coupon Now!***

# Edison Catalogs FREE

**SIGN the Coupon** and get our great Edison catalog, quoting the **rock-bottom prices**—on the finest Edison outfits. Remember you get an absolutely free trial and can send either cash in full or easy **monthly payments.**

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Without any obligations on me please send me your Edison catalog free, prepaid.

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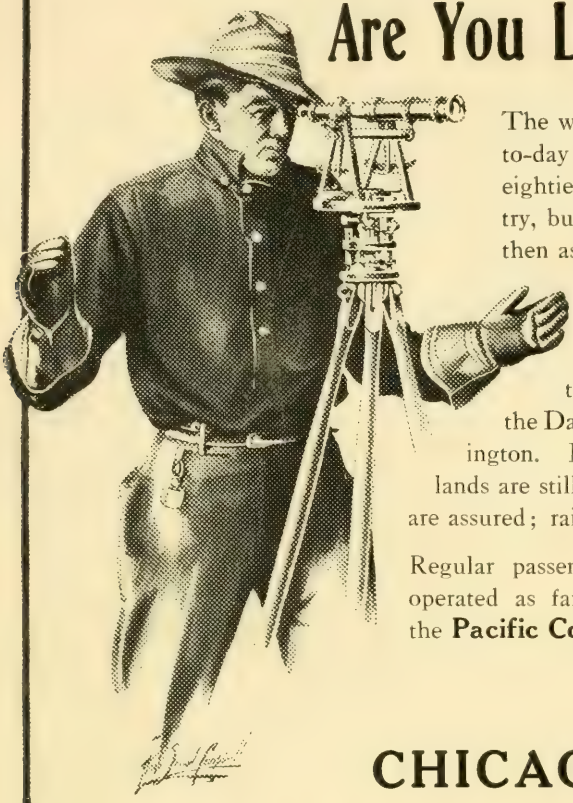
**Don't bother with a letter; the coupon will do.**

# Are You Looking Ahead?



The well-to-do farmers and stockmen of to-day got their start in the West in the eighties. They located in a new country, but conditions were not as favorable then as they are to-day.

To-day's opportunities for success and independence are also in the West; they are along the new line to the Pacific Coast in the Dakotas, Montana, Idaho, and Washington. Land there is cheap; homestead lands are still plentiful; good crops and markets are assured; railroad facilities are good.

Regular passenger and freight trains are now operated as far west as Lombard, Montana, on the **Pacific Coast Extension** of the

## CHICAGO MILWAUKEE and ST. PAUL RAILWAY

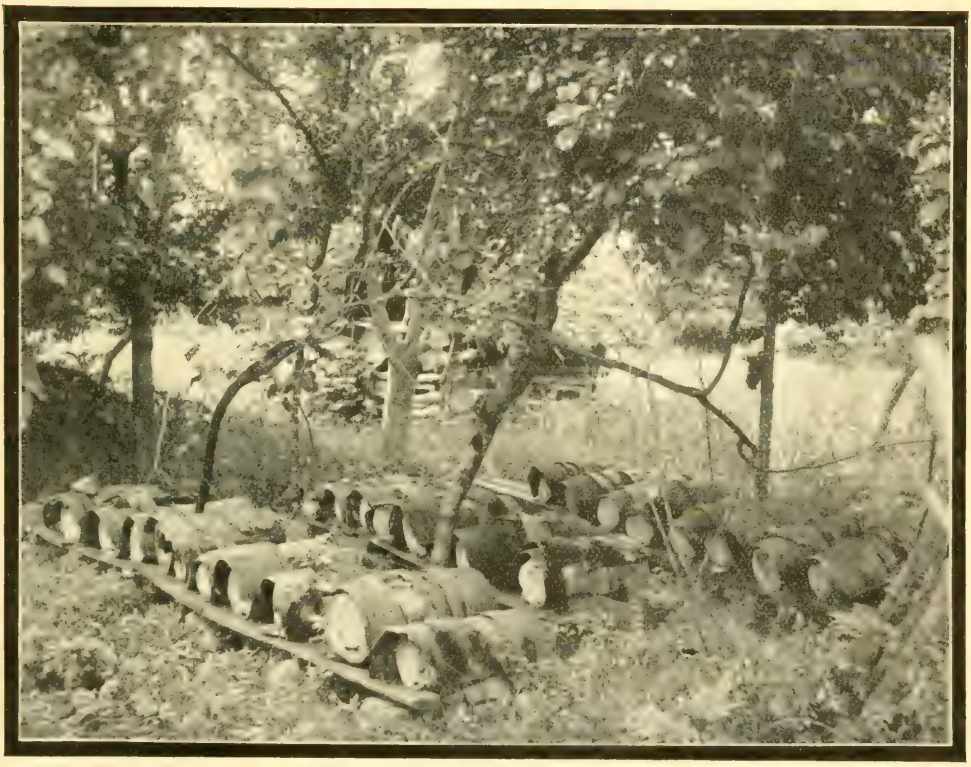
On March 17 and April 7 over one thousand homeseekers bought tickets to points on the new line in the Dakotas and Montana. During March four hundred cars of homeseekers' outfits from points east were unloaded at various stations on this new line. These people are looking ahead; they are taking advantage of the opportunities; they will be the well-to-do settlers of the future.

**Send for free descriptive books. They will interest the farmer, the stockman, the merchant, the fruit-grower, the workingman, the professional man.**

**F. A. MILLER,**
**General Passenger Agent**
**CHICAGO**

**E. G. HAYDEN,**
**Traveling Passenger Agent**
**426 Superior Ave., N.W. CLEVELAND**

# Gleanings in Bee Culture



A Rustic Russian Apiary in the Caucasus.

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI May 15, 1908 No. 10

# ARE THEY WORTH SAVING?

## Mr. Haviland Saves 28 Chicks in One Hatch.

Fully one-third of all the chickens ready to hatch die in the shell. After 30 years' study and practice we have discovered a simple way to save every chick that is fully developed and ready to hatch, whether the egg is pipped or not. This, we believe, is one of the lost arts of the ancient Egyptians. It takes but a minute to save a chick, and no skill required. Note Mr. Haviland's success:

*Dear Sirs:—* Brookville, Md., Feb. 27, 1908.

I received my copy of the Philo System at noon, the last hour of the 21st day for my incubator, containing 172 fertile eggs. About 100 were out of the shell and about 30 of the remainder were still alive, some pipped. According to directions with our hot-air machine these were worthless. We immediately proceeded according to "A Trick of the Trade" in your book and hatched them all, even one that showed signs of life after laying in a garbage-pail for some time. We still have 128 chicks three days old; lost but two. Many of the eggs were three or four weeks old when set.

Respectfully, E. W. HAVILAND.

# $200 IN SIX MONTHS FROM 20 HENS

To the average poultryman that would seem impossible, and when we tell you that we have actually done a $500.00 poultry business with 20 hens on a corner in the city garden, 30 feet wide by 40 feet long, we are simply stating facts. It would not be possible to get such returns by any of the systems of poultry-keeping recommended and practiced by the American people, still it is an easy matter when the new PHILO SYSTEM is adopted.

**The Philo System is Unlike all other Ways of Keeping Poultry**

and in many respects is just the reverse, accomplishing things in poultry work that have always been considered impossible, and getting unheard-of results that are hard to believe without seeing; however, the facts remain the same and we can prove to you every word of the above statement.

**The New System Covers all Branches of the Work Necessary for Success**

from selecting the breeders to marketing the product. It tells how to get eggs that will hatch, how to hatch nearly every egg, and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make every thing necessary to run the business, and at less than half the cost required to handle the poultry business in any other manner. There is nothing complicated about the work, and any man or woman that can handle a saw and hammer can do the work.

**Two-pound Broilers in Eight Weeks**

are raised in a space of less than a square foot to the broiler without any loss, and the broilers are of the very best quality, bringing here three cents per pound above the highest market price.

**Our Six Months' Old Pullets are Laying at the Rate of 24 Eggs Each Per Month**

in a space of two square feet for each. No green cut bone of any description is fed, and the food used is inexpensive as compared with food others are using.

Our new book, the Philo System of Progressive Poultry Keeping, gives full particulars regarding these wonderful discoveries with simple, easy-to-understand directions that are right to the point, and 15 pages of illustrations showing all branches of the work from start to finish.

**Our New Brooder Saves Two Cents on Each Chicken**

No lamp required. No danger of chilling, overheating, or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all lice off the chickens automatically, or kill any that may be on when placed in the brooder. Our book gives full plans and the right to make and use them. One can be easily made in an hour at a cost of 25 to 50 cents.

*Dear Sir:—* River Falls, Wis., March 16, 1908.

I am well pleased with your system in poultry-keeping. We have more than doubled our egg production.

Yours truly, J. C. THAVER.

*Gentlemen:—* Ligonier, Ind., Jan. 24, 1908.

Some time ago I ordered your book, Philo System, and your paper. Want to say I am highly pleased with them. Never in my life have I received so much for so little money. It is a very comprehensive treatise indeed. Your methods are so simple that a child might follow them.

Yours truly, J. BERT MCCONNELL

*Gentlemen:—* R. F. D. 1, Melrose Park, Ill.

Your publication, the Philo System, at hand, and, after careful comparison, must say that without doubt or hesitation that more boiled-down, good common sense and natural facts and instruction are condensed in the pages of your book than in all I have tried (to learn) and read the date.

Yours with best wishes, GEO. A. WOLFF.

*Dear Sir:—* Cincinnati, O., March 3, 1908.

Your book came to hand and I must say I am very much pleased with it. It is far the best book I have seen on poultry. The ideas set forth in the book, which are the results of your experimenting, certainly show that you are a little in advance of others in this work.

Common Era, Ill., March 19, 1908.

I have built several of the brooders as described by Mr. Philo, and at present time have young chicks, a week old, outdoors, healthy and strong, without being warmed by any artificial heat. Yours respectfully, WILSON BROOKS.

**SPECIAL INTRODUCTION OFFER. We will send the book and right to use all patents and one year's subscription to Poultry Review for $1.00.**

**POULTRY REVIEW, 23 Third Street, ELMIRA, NEW YORK.**

## SAVE 30 TO 60 PER CENT. BUY DIRECT. BUILDING SUPPLIES OF EVERY KIND

**The Chicago House Wrecking Co. Purchased at forced sales, 50,000,000 feet of new lumber.** We are making special concessions to those who buy at once. Our prices today are far lower than prices have been for years. Order now for immediate or future use. Quick action will save you big profits. Remember prices elsewhere which are even now high, are bound to rise. We can quote you 30 to 60 per cent better prices for the same lumber than your local dealer. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouse and yards at Chicago and see the lumber we are offering and you will recognize that it is all we say of it. Make your own selection and see it loaded. It is not necessary to come to Chicago, however, unless you wish to. **We can fill your order by mail** with just what you want and guarantee you absolute satisfaction. Ours is the largest direct to the consumer lumber headquarters in the world. We sell millions of feet annually. Orders filled from every part of the United States. No matter where you live you can save money by supplying your building wants here.

We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can save you money on it. Our tremendous business of millions of dollars annually is your best guarantee of complete satisfaction of every purchase made from us. In our enormous stock of new lumber of every kind we have just what you need for every purpose. Don't buy a stick of material until you get our prices. We offer you everything in the lumber and building supply line needed for residences, farm homes, stores, churches, barns, outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 60 per cent less than your local dealers or lumber yards ask for it.

## IMPORTANT! Send Us Your Lumber Bill For Our Estimate

Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which means sacrificed prices and enables us to sell even as low as cost without loss. You take no chances in dealing with the Chicago House Wrecking Company. Whether for $1 or $10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

We also furnish you building and barn plans absolutely free upon request. Write us for any information or advice you want and we will have our staff of architects answer every inquiry promptly. Our free book of plans is sent if you mention this paper. We simplify your building proposition.

Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of every detail. That is what our Special Builder Service is for. Be sure and send us your lumber bill for our estimate. Feel free to write for anything you want to know along the line of building supplies, furnishings, etc.

## WE PURCHASE OUR GOODS AT Sheriffs' and Receivers' Sales

***Hundreds of Big Money Saving Bargains for Every Builder. Don't Build Your House, Barn, Store, Corn Cribs, Church, Etc., without getting Our Big Lumber Offer. Lowest Prices on Millwork Supplies, Roofing, Water Supply Outfits, Paints, Plumbing Supplies, Hardware, Heating Outfits, Furniture, Carpets, Linoleum, Etc.***

## DOORS 40c WINDOWS 20c

1,000 good doors, various sizes, secured by us in connection with dismantling operations, most of them with hardware. Prices range from **40c** up. Fancy front doors, all designs, **$1.50** up. 10,000 window sash, **20c** up, all sizes. Complete line of everything in mill Work. All brand new, best quality. Barn sash, 6 sizes, **25c** up. Cellar sash, **37c** up. Clear yellow pine mouldings, **25c** per 100 ft. up. Porch columns, **54c** up. Stair newels, **$1.78.** Stair rail, **10c** per ft. Pilaster casing, O. G. base, **1 3-4c** per ft. Base blocks, **4c** each. Quarter round, **25c** per 100 ft. Hardwood thresholds, **4c.** Porch brackets, **3c.** Porch spindles, **4c.** We handle everything in the Building Supply Line, including light and heavy hardware. **Send us your lumber bill for our estimate.** Ask for our new special mill work catalog, It prices everything needed for building purposes. Sent free.

## Rubberized - Galvo Roofing

**$1.25 per sq.** Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Weather-proof and fire-proof. We furnish with each order sufficient cement to make the laps and large head nails. Price is per sq. of 108 sq. ft. **1 ply, $1.25. 2 ply, $1.40. 3 ply, $1.75.**

## OUR NEW 500-PAGE CATALOG NO. 688 FREE.

**This Wonderful Bargain Book** is just out and ready to be sent to you at once. It is a book such as every shrewd buyer must have. **500 Pages** with thousands of items of the very best merchandise and supplies bought at the Sheriffs' and Receivers' Sales. It will pay you to keep it handy. Its pages contain a full record of what we still have on hand from the wonderful St. Louis Worlds' Fair. Merchandise, Machinery and Supplies, articles for every one. You will find it useful in the home, in the workshop or in the office. Write today. **Cut out coupon in corner.** Fill in answers to questions. Sign your name and address in full and mail to us. We will send you our Catalog free upon receipt of coupon and answers to questions.

***CHICAGO HOUSE WRECKING COMPANY, 35th and Iron Streets, CHICAGO, ILL.***

## FREE CATALOG COUPON

***Fill out, cut out, and Mail to Us.***

When do you expect to build or improve?.....

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What kind of building or buildings?.....

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What items in this advertisement interest you the most?

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Name.....

Town.....County.....

R. F. D. or P. O. Box.....State.....

I saw this advertisement in Gleanings in Bee Culture.

Send me free of all cost your 500-page Catalog. Address

**Chicago House Wrecking Co., Chicago**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct. to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatoied honey to average not less than 23 pounds net per case of 24 sections.

No. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

INDIANAPOLIS.—Jobbers are fairly well stocked, but very little honey is being offered by producers. Best grade of extracted honey is in good demand, but comb honey is finding slow sale. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 15 to 17; extracted white clover, 8 to 9; amber, in barrels, 6 to 6½. Beeswax, 28 cts. cash or 30 in exchange for merchandise. WALTER S. POUDER,
May 5. Indianapolis, Ind.

LIVERPOOL.—The honey market is steady and quiet, but stocks are not large. Fine quality meets with fair demand, but low grades are almost entirely neglected. We quote: Chilian, 4 to 6⅓; Peruvian, 3½ to 5⅓; California, 7½ to 9; Jamaican, 4 to 5⅓; Haiti, 6⅓ to 6½. Beeswax is steady—African, 27 to 30; American, 30 to 33; West Indian, 27 to 32; Chilian, 30 to 36; Jamaica, 34 to 35. TAYLOR & CO.,
April 11. 7 Tithebarn St., Liverpool.

CINCINNATI.—The conditions of the honey market are not satisfactory, as there is no consumptive demand for either comb or extracted honey. Lower prices are no inducement. We must await the revival of business in general, which, no doubt, will be as soon as the weather settles. Quote our fancy water-white honey for table use at from 9 to 10, according to the quantity purchased. Amber extracted honey in barrels brings 5½ to 7, the price depending on the quality and quantity. There is an abundance of beeswax, for which we are paying 30 cts. in cash and 32 in trade for choice yellow, delivered here, free from dirt.
THE FRED W. MUTH CO.,
April 14. Cincinnati, O.

PHILADELPHIA.—The call for both comb and extracted honey has fallen off considerably in the last two weeks. Quite a few job lots on the market, which parties will sell at almost any reasonable offer. This makes the prices very unsteady. We quote: Fancy white comb honey, 17 to 18; No. 1, 15 to 16; amber, 13 to 14; extracted honey, fancy white, 8 to 9; amber, 6 to 7. We do not handle on commission. WM. A. SELSER,
April 24. 10 Vine St., Philadelphia, Pa.

BUFFALO.—There has been no change in the price of honey since last quoted. The demand is fair for pure white comb and good No. 1 buckwheat comb. We think that about all in the honey in the market will be cleaned up before the new crop is ready. W. C. TOWNSEND,
May 11. Buffalo, N. Y.

ST. LOUIS.—The honey market has not undergone any change since ours of March 20. There is no demand for honey, and the quotations are nominal as follows: Fancy white comb honey, 15 to 16; No. 1 white and amber, 13 to 14; broken and defective, less; extracted white, in cans, nominal at 8½ to 9; amber, 7 to 8; in barrels, 6½ to 7. Granulated extracted honey sells at ½ to 1 ct. per lb. less. Beeswax is firm at 28½ for prime; impure and inferior, less. R. HARTMAN PRODUCE CO.,
April 11. St. Louis, Mo.

SAN FRANCISCO.—There is very little movement of honey at present, some grades being closely cleaned up. Prices remain stationary on all offerings. Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, extracted, 7 to 7½; dark amber and candied, 5¼ to 5¾.
*Pacific Rural Press*, May 2.

KANSAS CITY.—We have nothing to quote in the way of comb honey; but we quote extracted white at 7½. Beeswax, 25 to 27. C. C. CLEMONS & CO.,
May 9. Kansas City, Mo.

CHICAGO.—The honey market is without volume—no special change in price of either comb or extracted. Much of the extracted from Utah will be unsold when this year's crop is harvested unless it is sold to bakers. Beeswax is steady at 30.
R. A. BURNETT & CO.,
May 9. Chicago, Ill.

SCHENECTADY.—We have had a few calls for dark extracted honey from manufacturers, but did not have any stock on hand. Of course, they will not pay fancy prices. Nothing is doing in comb honey. CHAS. MACCULLOCH,
May 9. Schenectady, N. Y.

BOSTON.—White comb honey, fancy, 17; No. 1 white comb honey, 16; white extracted honey, 10; light amber, 9; amber, 8.
BLAKE-LEE CO.,
April 10. 134 State St., Boston, Mass.

ST. PAUL.—Receipts are very light; demand moderate and prices steady. The prices below represent those obtained for shipment in small lots: Fancy white-clover comb, new, per lb., 18; fancy California, 24 combs per case, $4.00; strained, in 60-lb cans, per lb., 10. W. H. PATTON, Sec. Board of Trade,
April 22. St. Paul, Minn.

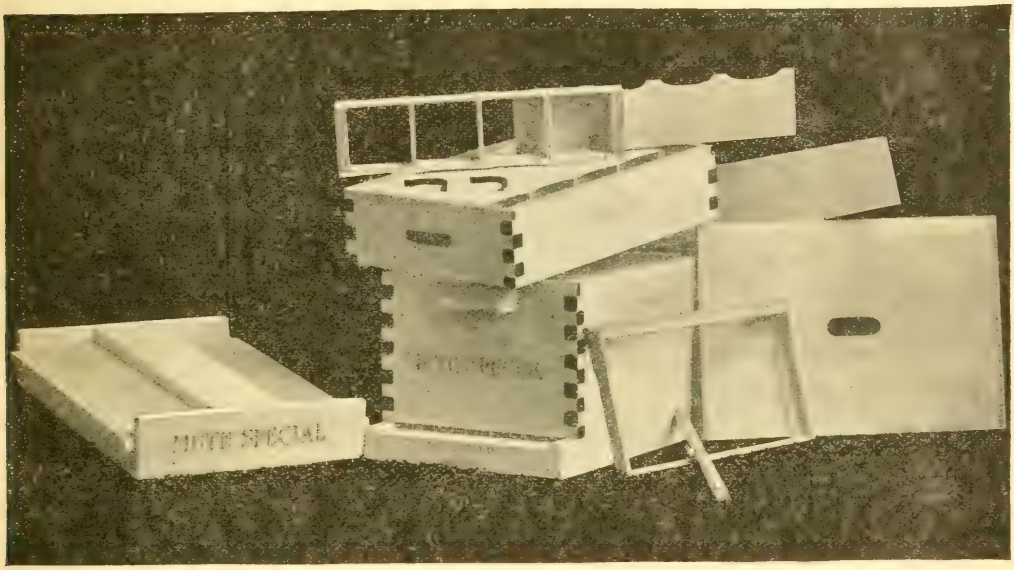
DENVER.—The market on comb honey is slow, and prices are declining. We quote to our trade, No. 1 white, per case of 24 sections, $3.00; No. 1 light amber, $2.85; No. 2, $2.70; extracted, white, 8 to 9; light amber, strained, 6¾ to 7. We pay 25 cts. for clean yellow beeswax delivered here.
THE COLORADO HONEY-PRODUCERS' ASSOCIATION,
April 22. F. RAUCHFUSS, Mgr.

THE ONLY WAY TO GET AS **GOOD** A HIVE AS A

# MUTH'S SPECIAL

IS—TO GET **ANOTHER** MUTH'S SPECIAL.

Have a look at its picture—so you'll know it.




Notice these prices—Same as regular style of Dovetailed hives—and don't let any one pass you a grape-fruit substitute when you buy a hive. Buy from us and get the real article. There is *just one* hive that

**Makes Good** Anywhere and Everywhere; Any Time and Every Time!

This is it—and here are the prices:

| | Nailed and painted | Nailed. | In flat. | | |
|---|---|---|---|---|---|
| | 1 | 1 | 5 | 10 | 25 |
| With starters: | | | | | |
| 1-story, 8-frame | $ 1 90 | $ 1 70 | $ 6 50 | $12 00 | $28 25 |
| 1-story, 10-frame | 2 00 | 1 80 | 7 50 | 13 10 | 30 75 |
| With sections and starters; | | | | | |
| 1½-story, 8-frame | 2 85 | 2 55 | 9 75 | 18 00 | 42 00 |
| 1½-story, 10-frame | 3 00 | 2 70 | 10 50 | 19 50 | 45 75 |
| 2-story, 8-frame | 3 80 | 3 30 | 13 00 | 24 00 | 55 75 |
| 2-story, 10-frame | 4 00 | 3 50 | 14 00 | 26 00 | 60 75 |

A regular Dovetailed hive, but gable style of cover (*can't* blow off); rim rabbeted on inside edge of sides; honey-board; reversible and non-warping bottom; all finished like a railroad president's private car. (That's particular work, too!)

It's *worthy* of the name of *MUTH*—and that's sufficient. Better send for our catalog—it's free.

**THE FRED W. MUTH COMPANY**

**51 WALNUT ST.** THE BUSY BEE-MEN **CINCINNATI, O.**

# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT CO., Medina, Ohio.
J. T. CALVERT, Business Manager.

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# The Hand System

TO satisfy a number of customers we are now making hives to suit the above system, just as the inventor himself uses them. These are not listed in our regular spring catalog, and are not kept in stock at any of our agencies. All orders will be filled from Medina. If ordered early enough, however, they can be forwarded to any one of our branches for redistribution. If you are going to try a few of these hives the coming season, we earnestly urge you to order early before the rush season comes on.

PRICE LIST OF HAND DIVISIONAL HIVE AND PARTS.

We have had numerous calls for divisional hives just as Mr. Hand uses them. We will not list them in our catalog for the coming season, but will make them up to supply on special order, to those who desire to try them, at prices in table below. The outside dimensions being nearly the same as the regular Dovetailed hive, the regular covers and bottoms may be used.

| Each section is 19⅛ in. long, 5⅛ in. deep outside; upper portion of side removable with clamps to hold it in place. Sections used are 4¼x4¼x1½ plain, split three sides. Furnished in both eight and ten frame size. | Designating or Short Name | Nailed and Painted Each | In Flat | | |
|---|---|---|---|---|---|
| | | | Each | Five | Weight of 5 |
| Hand brood or extracting section, including the frames, springs, clamps, and nails; no foundation | Hand 8-8 | $ 65 | $ 50 | $ 2 25 | 35 |
| | Hand 8 10 | 70 | 55 | 2 50 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and 1-inch foundation starters | Hand 9-8 | 75 | 60 | 2 50 | 35 |
| | Hand 9-10 | 80 | 65 | 2 75 | 40 |
| Hand brood or extracting section, including the frames, springs, clamps, and full sheets comb foundation | Hand 0-8 | 1 30 | 85 | 4 00 | 38 |
| | Hand 0-10 | 1 40 | 95 | 4 50 | 43 |
| Hand comb-honey section, including section-frames, and fences; no sections or foundation starters | Hand 2-8 | 75 | 60 | 2 75 | 30 |
| | Hand 2-10 | 80 | 65 | 3 00 | 35 |
| Hand comb-honey section, including section-frames, fences, sections, and full sheets foundation | Hand 1-8 | 1 45 | 1 00 | 4 75 | 35 |
| | Hand 1-10 | 1 55 | 1 10 | 5 25 | 40 |
| Hand four-section hive including two brood and two comb-honey sections; no sections or foundation starters | HandCE8822-8 | 3 50 | 2 65 | 12 00 | 180 |
| | HandCE8822-10 | 3 75 | 2 90 | 13 25 | 190 |
| Hand four-section hive including two brood and two comb-honey sections with sections and full sheets foundation | HandCE0011-8 | 6 30 | 4 25 | 20 00 | 200 |
| | HandCE0011-10 | 6 75 | 4 70 | 22 25 | 210 |
| Hand sectional super, no inside fixtures, including clamps nails, and flat tins | Hand Super-8 | 40 | 30 | 1 25 | 22 |
| | Hand Super-10 | 43 | 32 | 1 35 | 24 |

Hand brood-frames, 4⅞x17⅝x1⅜; ends, 1⅜x$\frac{5}{16}$; top, $\frac{13}{16}$x⅜; bottom, ½x¼ ....$2.00 per 100 in flat; $18.00 per 1000
Hand section-frames, 4⅞x17⅝x1½; ends and top, 1½x¼; bottom, 1½x⅜..... 2.50 " " 22.00 "
Hand fences, 4⅞x17⅝, P style ..... 1.75 " " 16.00 "

**The A. I. Root Company, Medina, Ohio**

**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# Getting at the Root of the Matter.

*By the Bee Crank.*

The bee goes after the "inside facts" when gathering honey. It knows a good blossom from a poor one. The bee-man who expects to gather in the sweet honey of golden profits must not only go after it, but must learn how to get at its source—to distinguish between the fruitful and the barren method. There is one fundamental idea at the base of a successful bee business—the best equipment is none too good. The root of the whole matter is—use Root's goods. I handle their full line and sell at their prices—no delay, and less freight to pay. Danzenbaker and other standard hives, sections, Hoffman frames, and other requirements, ready to go on next train. Ever try one of those Danzenbaker smokers? Some of my patrons think it excels any other smoker on the market. The foundation that I am sending out is fresh from the mill, and has that delicious odor, is soft and pliable, and easy for the bees to work. Ever see foundation that looks blue and seems hard and brittle? It is old; and, while the bees accept it and build to it, if you cut a comb of honey built on it you will think it has an oyster-shell in its center. Bees work over fresh foundation so thin that one does not recognize it in a comb of honey. One good patron in California says in a footnote with his order, "I can get goods nearer home, but I prefer to send to you." Many of you will understand just exactly why.

Save up your beeswax for me. I am now paying 28 cents, spot cash, or 30 cents in exchange for supplies, delivered here. I have a constant demand for it.

My catalog is free.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

E. R. Root
Editor

A. I. Root
Editor Home Department

H. H. Root
Ass't Editor

Department Editors:—Dr. C. C. Miller, J. A. Green, Prof. A. J. Cook, J. E. Crane, "Stenog," Louis H. Scholl, G. M. Doolittle, R. F. Holtermann, W. K. Morrison.

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A WONDERFUL BOOK.

Nothing could show to better advantage the extraordinary development of American advertising than N. W. Ayer & Son's (Philadelphia) great Newspaper Annual just published. It has 1348 pages, royal octavo size, in which are sandwiched beautiful colored maps of every State and Territory, and, to an advertiser, it must be worth much more than the selling price, $5.00. To the ordinary advertiser it must be a perfect mine of information. This knowledge is tabulated in such a way that no time is lost in seeking for the exact point desired. It contains an advertisers' telegraph code to facilitate rapid communication between advertisers and the agents or publishers of newspapers and magazines. To compile such a book every year, and keep all the facts up to date, is certainly a great triumph, for it names 23,726 publications, gives their circulation, and also the statistics of every State, town, and village in the country. It is a monument of patience and perseverance.

TO PURCHASERS OF VEHICLES.

The Elkhart Carriage and Harness Mfg., Co., of Elkhart, Indiana, have been advertising their wares in GLEANINGS for many years, and we have yet to hear one single complaint of their treatment of customers, though they must have sold thousands of dollars' worth of goods to our readers. We think this is about the best testimonial any firm could receive, because if there was any dissatisfaction we would hear of it sooner or later. For more than a third of a century they have been selling vehicles and harness on the mail-order plan. They commenced in a humble way, and now possess an immense factory where they turn out carriages and buggies by the wholesale. In addition they make a large quantity of harness. By means of their fine catalog of 250 pages they convey to the mind of the would-be customer a knowledge of what they have to sell as well as any salesman could, and probably better, for a book can be referred to as often as one chooses to use it; and the pictures and descriptions being truthful and accurate, there is no need to go further. If you wish to see a copy of this handsome catalog, just send a request for it and it will be forthcoming. It is reasonable to suppose that a firm which has no traveling salesmen, agents, jobbers, wholesalers, or retailers can sell cheaper than those who do. In towns and cities storage alone adds greatly to the cost of a vehicle. This can be saved. Please note the address, The Elkhart Carriage and Harness Mfg. Co., Elkhart, Indiana.

4%

Deposit your idle funds here pending permanent investment. The advantages offered are—

**Unquestioned safety and 4 percent interest**

compounded semi-annually.

Write to-day for booklet explaining our convenient banking-by-mail system.

**Established 1892 A State Bank**
**Assets over $700,000**

THE SAVINGS DEPOSIT BANK COMPANY
MEDINA, OHIO

# Lansing, Mich.

Yes, we've moved to the best point in Michigan to reach bee-keepers. We have four great railroad systems and three express companies reaching out in every direction. At a low-cost freight expense we can supply you with

## "ROOT QUALITY"

bee-supplies at factory prices. Hives, sections, and foundation ready for immediate shipment in any quantities.

## SPECIAL OFFER

GLEANINGS one year, new or renewal, and a good bee-veil with a silk-tulle front for $1.15. No matter where you live, take advantage of this GLEANINGS offer.

SEND FOR CATALOG.

# M. H. Hunt & Son

**Lansing .. .. .. Michigan**

Opposite P. M. depot.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department,

Washington Blvd. & Morgan St.

CHICAGO, ILL.

## HONEY WANTED.

Wanted to contract for 20,000 lbs. comb honey in shallow extracting-frames 5⅝ inches deep.

Requirements: Honey to be produced on full sheets of extra-thin super foundation, in shallow extracting-frames, not wired.

Grade: Same as first three grades in GLEANINGS grading-rules—Fancy, A No. 1, and No. 1 (all included as one grade).

Quality: Honey must be produced from clover, basswood, or raspberry.

Combs must be even and of uniform thickness—not over one inch.

Will furnish frames, shipping-cases, and carriers for re-shipping the honey.

Bee-keepers in Michigan or Ohio interested in this proposition, write, stating approximate number of frames you can furnish, and price wanted for the honey per pound, *net weight*, F. O. B. Medina.

Address HONEY BUYER,
c-o GLEANINGS IN BEE CULTURE,
Medina, Ohio.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

**HILDRETH & SEGELKEN,**

265-267 Greenwich St. 82-86 Murray St.

NEW YORK.

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### THE TRADE IN BEES AND QUEENS.

We would respectfully call the attention of many of our readers who are obliged to purchase bees and queens to the fact that *now* is the time to order if you wish to avoid disappointment. By delaying the matter till later, when the queen-breeders are immersed to the head in business, you run the risk of being kept waiting till the season is almost over. Besides, the breeder is not sure what to do, whether to breed an extra number or let the matter take care of itself. It would be vastly better for the customer as well as the breeder if orders were sent some time in advance of actual requirement. This gives both parties to the transaction an opportunity to do business on a safe and satisfactory basis. The real season for breeding good queens in the North is quite short; hence the express need of a proper understanding beforehand. Usually with a little forethought all unpleasantness can be avoided.

### FOUNTAIN PENS.

We are very glad to say a word in season in favor of the pens made and sold by the Laughlin Pen Co., of Detroit, and now advertised elsewhere in this journal. In our opinion, any person needing a good pen can very safely order from them; for, in addition to a positive guarantee with each pen, they make a very liberal offer to return the money plus the postage on all pens returned as unsatisfactory for any reason whatever. It strikes us nobody could do more in a business transaction than that, and for this reason we allowed the Laughlin Manufacturing Co. all the space they wanted to advertise their wares in this journal. We have given their Red Gem ink-pencil a fair trial, and found it was all it was represented to be, and a little more for good measure. We imagine the other pens they advertise are equally satisfactory, and it is out of the common to offer 14-carat gold fountain pens at the price they name. There is now strong competition in the pen business; but it is evident to us that the Laughlin firm can hold its own against all competitors when a really good fountain pen is wanted.

### THE GUIDE TO NATURE.

Our friend Dr. Edward F. Bigelow has launched his new periodical, which he entitles *The Guide to Nature*, and it is well worthy of its title, for we have already perused two numbers, which sufficiently show the trend of the magazine. It deals entertainingly with all phases of nature in such way that the ordinary man or woman can fully comprehend what is meant. It is a scientific magazine for the plain people. In the May number there is an imaginary story of savages in the jungles of the Hoang Hoe—just the material boys like to read. As a matter of fact it relates to a trip through a fine public park in the city of Stamford, Ct., where the explorer (Dr. Bigelow) meets with all sorts of wild things and many adventures. There is a department for the camera and another for the microscope; still another for domesticated nature, so that all tastes are catered to. It fulfills a mission.

### HATS FOR BEE-KEEPERS.

Now is the time the bee-keeper is looking around for a soft comfortable straw hat on which to fasten a bee-veil. Such a hat has to withstand a good deal of rough usage such as the average summer headgear is not expected to stand. A hat which seems to fill the requirements is advertised in this issue by the Francis E. Lester Co., Mesilla Park, N. M. These hats are hand-made in Mexico, where the art of straw-hat making is well understood. They are so constructed that they fit almost any head, and, being tough and durable, last a good while, even when roughly used. The bee-veil may be lightly tacked to the rim by a few stitches, and anybody may find this to be a very efficient and satisfactory mode of preventing bee-stings on any part of the head; and yet the whole outfit is quite light and, at the same time, durable.

### TOEPPERWEIN'S WORD CONTEST.

Mr. Udo Toepperwein has written us to the effect that there were far more contestants than he had any idea of, and it will take time to discover who are the winners. An expert has been engaged to go over the answers, but it will be more than a week before he can make his report. In the meantime he asks all interested to exercise patience. He had a deluge.

# LISTEN!

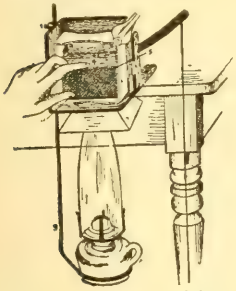
## DO YOU HEAR THOSE BEES WORKING?

Soon they will want room or will swarm.

Have you gotten your hives and supplies? If not, send your order at once. If you have The A. I. Root Co.'s catalog you can order from it. We sell their goods at their factory prices. We can fill your orders promptly now. Write for further information and our 40-page catalog.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTG. CO., MISSOURI.**

RAUCHFUSS PATENT COMBINED SECTION-PRESS AND FOUNDATION-FASTENER.



Used by the largest comb-honey producers.

# Successful Co-operation

means to the Bee-keeper:—The buying of the best Bee-supplies obtainable at the closest prices, and marketing of his products to the best advantage. Our association is co-operative, and organized for this purpose. We carry a large stock of high-grade goods such as:

**G.B.Lewis Co.'s** Hives and Sections — **Root's** Smokers and Extractors — **Dadant's** Comb Foundation

Send to-day for our free 48-page Illustrated Catalog.

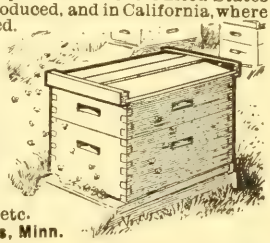
## The Colorado Honey-Producers' Ass'n

**1440-1444 Market Street .. .. Denver, Colorado**

# BEE KEEPING will be a profitable industry this season.

Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

# Get Ready Now for More Honey



**Let us send you our catalog.** We are manufacturers and sell only our own make of bee-supplies. Minneapolis is the largest lumber-distributing point; the Mississippi river furnishes us power, and our organization and labor conditions are the best for economical production. **Send us an estimate of your requirements and let us give you prices** We have a large stock of standard bee-supplies on hand. Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Comb Foundation, Smokers, Extractors, Shipping-cases, etc.

**MINNESOTA BEE SUPPLY COMPANY, 23 Nicollet Island, Minneapolis, Minn.**

# This Coupon worth 25 Cents!

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

*New Subscribers Only.*

*Name*.....

*Postoffice*.....

*State*.....

**AMERICAN - BEE - JOURNAL**

A 32-page illustrated 50-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keeper. . . . Best writers.

**It will increase your Honey-money!**

If you will send us your name and address with 25 cents (stamps or coin) together with this coupon, we will send you a trial trip of our journal for 12 months. Order now, and let us begin with this month's fine number. Address

**American Bee Journal, 118 W. Jackson, Chicago, Illinois**

# THE SEASON FOR

I Hives

II Sections

III Foundation

IV Inside Fixtures

V Bees and Queens

VI Veils and Smokers

**THE A. I. ROOT COMPANY**

SYRACUSE :: :: :: NEW YORK

TO THE

## BEE-KEEPERS of CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, "The best is cheapest."

**E. GRAINGER & COMPANY**

**Deer Park, Toronto, Ontario, Canada**

Canadian agents for The A. I. Root Co., Medina, O., U.S.A.

## BIENENZÜCHTER!

von Deutschland, Schweiz, Oesterreich, u. s. w., senden Sie fuer unsere 1907 Preisliste von

Bienenwohnungen, Rauchapparaten, Honigschleudern, Handschuhen, Bienenschleiern, Walzwerken, Futterapparaten, Porter's Bienenflucht, Fluglochschiebern für Kasten, Königinenabsperrgittern, Weiselkäfigen, Schwarmfangbeuteln, Entdecklungsmessern, Dampfwachsschmelzern, Wabenenentdecklungsapparaten, und allen anderen Bienengerätschaften der

**A. I. ROOT COMPANY**

Grösste Fabrik ihres gleichen in der Welt

**EMILE BONDONNEAU**

General Vertreter für Europa und Kolonien

**142 Faubourg Saint Denis, Paris, 10me.**

# Three Issues for 10 Cents

The question of requeening annually, or allowing the bees to do it when they get ready, is of much importance, and I think that

**THE BEST ARGUMENT**

yet in favor of the former is put up by S. D. Chapman in the *Bee-keepers' Review* for March—and then he shows how to do it at a cost of only five cents per colony for labor.

Many bee-keepers think it necessary to

**OPEN EVERY HIVE**

in the apiary in order to ascertain the condition of the colonies; but it is astonishing to note the number of things that a veteran can decide without ever opening a hive; and there is certainly some interesting reading in an article on this subject by A. E. Burdick, in the April *Review*, entitled: Outside Indications of Internal Conditions.

Probably no queen-breeder in this country has had more experience in the production of a

**HIGH GRADE OF QUEENS**

in large quantities than has Mr. J. P. Moore, of Morgan, Ky.; and he tells in the May *Review* "How to Rear the Best Queens at the Lowest Cost." I think it the best article on queen-rearing that I ever read.

A man's success sometimes turns upon the kind of honey that he produces—that is, whether comb or extracted.

**THERE ARE REASONS**

why you should give one kind the preference. If you are uncertain about it, read the article by R. L. Taylor, in the May *Review*. Its title is "Comparative Advantages of Comb and Extracted Honey Production."

Send 10 cts. for the March, April, and May issues, and the ten cents may apply on any subscription sent in during the year.

**A SPECIAL OFFER**

will also be sent, showing how you can get the *Review* for this year and next at a very low price.

**W. Z. Hutchinson, :: Flint, Michigan**

# And Still They Come

The following letter from one of our customers demonstrates in his own words the satisfaction our customers receive. Remember this is only one of the many thousands we receive.

*Griggs Bros., Toledo, O.:*—I received the hives and supplies to-day, which is the quickest I ever got goods after ordering. They must have come over in the Knabenshue's airship. They certainly are in fine shape—utterly impossible for any thing to have got lost.

Your shipping-clerk had them packed to perfection.

Respectfully, HUGH RICHARDSON,
Wood Co., O.

We should be pleased to list you as one of our customers if you are not one already. Bear in mind we handle ROOT'S GOODS exclusively, not the cheap shoddy stuff which others are trying to palm off under the pretense that it's "as good as ROOT'S." Try ROOT'S and you will be convinced. TOLEDO is the place to buy; we save our customers annually thousands of dollars in FREIGHT.

A complete line of Incubators and Poultry Supplies listed in our free catalog. Send for one.

Honey and Beeswax wanted in exchange for supplies.

**Special**

200 cases of 60-lb. cans, good as new, at 50 cents per can. Special prices in quantities.

**The Griggs Bros. & Nichols Co.**
**523 Monroe St. .. Toledo, Ohio**

# WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

**PITTSBURGH Headquarters for ROOT'S BEE-SUPPLIES at factory prices.**

Also Poultry and Dairy Supplies, Seeds, and Pet Stock.
Get our catalog and prices.

**Stapler's Seed Store 412-414 Ferry St. Pittsburgh, Pa.**

**$1.00 Mexican Palm-Leaf Hat, 50c**

A comfortable, durable hat for fishing, outings, and gardening. Guaranteed genuine Mexican hand-woven from palm fiber. Double weave, light weight; colored design in brim. Retails at $1.00. Postpaid for 50c to introduce our Mexican and Panama hats. Same hat, plain, 40c; both 75c. All sizes.

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# Wintering Bees in Danz. Hives

FALL RIVER, MASS., April 10, 1908.

*F. Danzenbaker:*—Kindly send booklet about your smoker as per your ad. in GLEANINGS, current issue, and for which I thank you in anticipation. I had **ten hives, average good, last fall;** now I have **five that survived, and in Danzenbaker hives,** and as I write they are lugging in pollen in good shape. Yours, H. N. BRIGHTMAN, Fall River, Mass.

(The **defunct** bees were in **ten-frame Langstroth.**)

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**F. DANZENBAKER, Patentee.**

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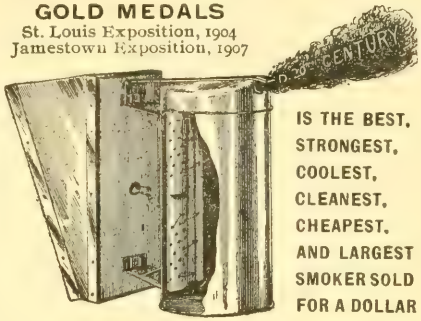


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*Dear Sir:*—Bee-supplies to hand. Let me congratulate you on your work This is my first business with you, and I like your promptness. I find freight less and time saved by ordering from you. Enclosed find check for $2.58 to pay freight charges.

Yours truly, W. J. Copeland, M. D.,
Fetzerton, Tenn.

*Dear Sir:*—The bee-supplies ordered from you arrived in due time, and good condition. Am well pleased.

Yours truly, Chas. T. Downing,
Rt. 7, Lexington, Ky.

**WANTED.** Amber, light, and dark southern extracted honey. State quantity, style of package, and lowest price expected delivered in Cincinnati. Mail Samples.

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# GLEANINGS IN BEE CULTURE

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## STRAY STRAWS

DR. C. C. MILLER

"EIGHT QUEENS in one box hive," page 562. That's a stunner. How was it done? Did the eight winter together?

A. I. ROOT, p. 587, seems to be a little skeptical about the "good old times when we were young." I arise to endorse him by saying that never was there a year with more fun to the acre since I began to have fun than this good year of our Lord 1908.

KOUMIS. One quart of new milk, one dessertspoonful of honey, one teaspoonful of yeast. Make the milk just warm, add to it the yeast and honey, pour into a large jug, and pass from one jug to another for three or four times. Put each pint of koumis into a quart bottle, cork tightly, and keep in a warm room for 24 hours.—*Chicago Record-Herald.*

"SUGGESTIONS thankfully received" anent those several thousand pounds of honey candied in the combs, says New Mexico Chap, page 580. All right, here you are. Spread the combs flat on the ground where the sun won't melt them; and as the bees lick them dry, sprinkle them with water from a watering-can. But unless used for brood-rearing I fear the honey would soon be candied again.

THAT UNITED STATES analysis of honey, reviewed p. 549, surprised me in more than one way. It shows, as mentioned, that what is generally supposed to be honey from one kind of flower contains pollen of several kinds; also that alfalfa pollen was found in white-clover honey from States where alfalfa honey is supposed to be unknown. I had supposed that inversion of nectar took place only while in the honey-sac of the bees, but learned from that bulletin that inversion continues after the honey is sealed up in the comb.

B. D. HALL's plan of wintering two nuclei in one hive with a thin bee-tight division-board, p. 582, works all right. I have wintered many nuclei in that way. Looking under I could always see each nucleus clustered up against the division-board, the two forming a single cluster. It is well always to see that heavy frames of honey are up against the division-board, otherwise there is danger that the honey will be eaten away from the center, and one or both of the nuclei will have to move away from the center, losing the advantage of mutual heat.

MY SYMPATHY is with that New Mexico chap, p. 580, in the matter of "taking off honey in the afternoon so that the bees will not sting you and the neighbors." In this locality the forenoon is generally the better time to take off honey; but when one makes a business of bee-keeping he can't stop for any particular time of day, but must work "from early morn till dewy eve," and sometimes later. Often we have started to work at 4 o'clock, A.M., and once we finished the day's work at an out-apiary by finding and clipping a queen by moonlight.

YE EDITOR says, page 486, "But what is to interfere with the apiarist giving A an empty comb at the time he gives her a frame of young brood from B?" A very serious interference is the lack of additional bees to cover the additional comb. [Perhaps; but under the conditions named, if we understand it rightly, there should be a sufficient number of bees to cover the additional comb.—ED.]

ENDORSING your instruction, Mr. Editor, page 584, not to remove the old queen till the new one is in, let me add that, for extra precaution, it is well to go a step further and not remove the old queen till one to three days *after* the new one is introduced. Put in the new queen, caged, with no chance for the bees to release her; one to three days later take the old queen out and let the bees at the candy. That gives the new queen the same advantage we have in the dual plan of introducing virgins in nuclei. [A good suggestion.—ED.]

E. H. SHATTUCK, page 581, I have some doubt that the dent in your queen had any thing to do with her supersedure. I have had several dented queens that lived long and happily. [If you will look up page 581 you will see that Mr. Shattuck said that the small dent appeared between the "wing-sockets." This shows that the injury in question was in the thorax, in the center of the back, and not on the abdomen of the queen. We have had a good many queens with dents in this portion of the anatomy; and these dents rarely if ever do any harm. Some of the best and most prolific queens we ever had carried a dent in their abdomens during their entire life; but a dent in the back between the wing-sockets would be a very different matter. Perhaps the dent you refer to was in the thorax; but we infer that you meant in the abdomen.—ED.]

WHEN BEES are placed on a new stand to form a nucleus, they will promptly desert their brood, according to what we are sometimes told. I have formed hundreds of nuclei, and have had very little trouble from desertion. There is an immense difference between queenless and queen-right bees. While bees taken directly from a laying queen are anxious to get back to their home, queenless bees will mostly stay where they are put. The strength of the nucleus also makes a difference. A very few bees seem lonesome, and

feel like hiking out. Three frames of brood with adhering bees taken from a colony that has been queenless two days or more will stay in satisfactory numbers, wherever put, without any imprisonment. If only two frames are taken, the entrance should be plugged with green leaves or grass, which may be removed in three or four days, or the bees may be allowed to dig their way out as the leaves dry. No danger of smothering in a full-sized hive.

D. M. Macdonald objects to the limited sense in which we use the word "tested" when speaking of a "tested queen." I do not blame him. ["Tested" has come to mean, by common consent, unless otherwise modified by some adjective, a pure queen and nothing more; that is, pure Caucasian, pure Carniolan, pure Italian, etc. It takes about 30 days to test her for this purpose. A select tested queen means one that is of good size and color, fairly prolific, with good-looking pure bees. "Extra select tested" means that she is extra in the qualities named. "Breeding queens" takes in the next higher grade, and has reference to a queen that has been tested for queen daughters as well as bees that she can produce. A queen that will not produce a fairly uniform marking of queens, whose bees do not show some of the qualities of the bees of their grandmother, can not be used for a breeder. She may show up well herself; but it is what her daughters will do that determines her value to the queen-breeder and to the man who would buy her. Then the word "breeder" is further qualified by the phrase "select" and "extra select." Extra and extra select take in all the desirable qualities usually named for a good strain of honey-gathering bees.

The Alexander plan for weak colonies in the spring was a dead failure the first time I tried it. I put a very weak colony over a very strong one, with an excluder between, and within 15 minutes the lower bees were carrying out dead bees from above. Since then I have put a wire cloth between the two stories for the first three or four days, and it is an entire success. After removing the wire cloth I take ripe brood from below without bees and put above. The bees promptly come up, making the upper colony the stronger. Then when it is returned to its own stand it will be weakened by the loss of field bees, making the two colonies of equal strength. [A good many had trouble with the Alexander plan when they first tried it, and so did we. It is important to put the two lots of bees together with as little disturbance as possible. But in spite of any thing that can be done, bees, especially some strains, will be stirred up, and then there will be trouble. The only sure way of keeping them from fighting is to place a wire-cloth screen between the upper and lower stories for two or three days, as you suggest. At the end of that time it may be removed, when every thing will move along harmoniously. We therefore advise and recommend in our A B C of Bee Culture, where this method is given, the use of wire cloth for three or four days as a precaution.

The Alexander bees are a very gentle leather-colored strain, and, when handled by a man who knows how, the wire cloth may be omitted. But the average beginner—yes, we may say the average bee-keeper—will do well to use the screen. —Ed.]

Ye editor figures, p. 557, that a queen-trap does not shut off much ventilation because the area of passage in the trap is greater than the area of the hive-entrance. I don't believe you are figuring on the right basis, Mr. Editor. One year I had combs melt down in hives because of a cornfield on one side and dense underbrush on the other, although the area of passage through the corn and underbrush was many thousand times greater than the area of the hive-entrance. Will not the trap close to the hive be as bad as the underbrush a rod away? [It can hardly be possible, doctor, that a cornfield on one side and underbrush on the other would so obstruct the entrance that the combs would melt down. Was there not some other untoward condition? As long as the sun does not strike directly on the hive, the bees, in the northern States at least, can make up for lack of circulation of air *around* the hive by an artificial circulation of their own *inside* of the hive to prevent melting down, providing the entrance be large enough. Of course, a perforated zinc or wire guard might cause some friction in air-currents; but as long as the passageway is four times that of an ordinary entrance, we do not believe that the item of friction of the air in passing the bars or perforations would cut much of a figure. It never has with us, and we have had hives exposed to the heat of the sun. But if, on the other hand, we have too small an entrance on a hot day in a strong colony there is almost sure to be trouble.—Ed.]

# Editorial

The National Irrigation Congress meets this year at Albuquerque, New Mexico. It is expected to be the most successful meeting yet held. More particulars later.

There will be a land-opening at Twin Falls, Idaho, on June 1, when 80,000 acres of irrigable land will be disposed of under the Carey act. Homesteads may be obtained by power of attorney.

In the case of weak colonies we are not sure that the storm-doors were an unqualified success, although we believe they helped in the case of the strong ones. We will explain this matter a little more fully next fall, and will at that time be prepared to submit several models which we hope will overcome to some extent the defects of those already tried.

The National Bee-keepers' Convention meets this year at Detroit, Oct. 13, 14, 15. Make a mental resolve to be there. Also, promise your wife that you will take her along. The opportunites are great for a real good time for every one. Besides, Detroit is central, and an admirable place for a convention. Probably you will take care of the bees with greater zest this summer if these hints are taken to heart.

Now is the time of all the year when the bee-keeper will need to put in his best efforts. There is an abundance of clover this year, and there is a chance of getting something providing he is up and doing.

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MANY ignorant fruit-growers will be spraying their trees while in bloom. Our bee-keeping friends should wait upon these people, and in the most kindly manner show them their mistake from the standpoint of the fruit-grower as well as that of the bee-keeper. If you haven't any literature to hand them write us for it.

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THE next session of the Farmers' National Congress will meet at Madison, Wisconsin, beginning Sept. 24. This will present a unique opportunity for some of our readers to hear men of national and international fame discuss the great farm problems of our time. It is a sort of institute of institutes.

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### OUR NEW FACE OF TYPE.

NOTICE that this issue is printed on a brand-new face of type. Our big editions, with an occasional double number, have been wearing out our old type very rapidly. It takes only a year now, with our big circulation, to wear out nearly 1500 lbs. of type on GLEANINGS alone.

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### $4000 FOR 400 COLONIES OF BEES IN TEXAS.

WHILE conditions for a honey-flow in Southwest Texas have been somewhat discouraging of late, yet it is significant that there is enough confidence in the industry for one party to pay another one $4000 for 400 colonies of bees. This price for so large a number, in spite of the discouraging conditions for the last two years in that portion of the country, shows a confidence in bee-keeping in the Lone Star State scarcely equaled anywhere else.

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### PROSPECTS FAVORABLE FOR THE EASTERN STATES.

JUDGING by the rush of orders that have come in, the prospects in most of the Eastern States for a honey-flow seem to be very good. While the spring has been somewhat backward, and even cold in many States, it has been by no means as unfavorable as a year ago, during which thousands of colonies all over the country were lost. There has been a large amount of rainfall; and if suitable weather comes on in June and July there is every prospect of there being a fair crop.

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### ANOTHER WORD TO THOSE WHOSE SUBSCRIPTION EXPIRES.

WE are rapidly taking out the names of those who are back on their subscriptions; for under the new ruling of the Department, as we have already stated, we are not allowed to continue any subscription except a short period after the time for which it is paid. It is important for those in arrears, who do not wish to lose any of the numbers, to renew at once, as we can not promise to supply any back numbers between the time of stopping the journal and the commencing of it again, although we will furnish as long as our supply lasts.

### PARCELS-POST LEGISLATION DENIED BY THIS CONGRESS.

IT is practically decided there will be no parcels-post legislation this session of Congress. The Postmaster-General has done his best to influence legislation along this line, but to no purpose. He has shown that a parcels post on rural routes would make rural free delivery self-sustaining. He estimates that there are nearly 40,000 rural routes, serving 15,000,000 people, which would, at the lowest calculation, average five packages each trip throughout the year. This would give an increased revenue of $15,000,000, and that sum, it is estimated, would wipe out the present deficiency. But it is no use; the politicians are thoroughly alarmed—in fact, they are scared to mention the subject at all, as an election is near at hand. While this Congress didn't give us parcels post it will come —yes, is bound to come. Political bugaboos can not always keep back what is a great success in Europe. W. K. M.

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### SOUTHERN CALIFORNIA SAGE CROP A FAILURE AND BEES STARVING TO DEATH.

THOUSANDS of colonies, owing to unfavorable conditions, in Southern California, are reported to be dying of sheer starvation. When the question is asked, "Why don't the bee-keepers feed?" the answer is that there is no honey crop in sight, and they feel that they can not draw on an already attenuated, or, worse yet, overdrawn bank account to buy sugar in sufficient quantities to keep the bees over until next February or March for a honey-flow that may or may not come. The policy with some, at least, seems to be to let the colonies starve except a comparatively small number; and when the next flow actually is in good prospect this number is increased. Whether it is cheaper to increase than to keep alive by feeding a large force of bees is a serious question.

In some portions of Southern California where where there is irrigation there will be a crop as usual. It is the lack of rains on the mountain-sides that can not be irrigated that plays havoc with the sages.

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### IDENTIFYING HONEY BY MEANS OF POLLEN-GRAINS AS SEEN UNDER THE MICROSCOPE.

THE following letter, received from W. J. Young, Assistant of the Chemical Laboratory of the Bureau of Chemistry, of the Department of Agriculture, Washington, D. C., will explain itself. Mr. Young, it will be remembered, was one of the authors of the United States Bulletin, No. 110, of the Department of Agriculture, a review of which we gave on page 549 of our last issue. His interest in this matter is certainly appreciated, and we feel sure our subscribers will be glad to respond by sending him samples. The letter is as follows:

*Mr. Root:*—I have been interested in the discussion of the color of heartsease honey in GLEANINGS for Dec. 15, 1907, p. 1504, and elsewhere, and believe that the case might be settled with comparative ease by a microscopical examination of the pollen along lines pointed out in Bulletin No. 110 of this Bureau. I am, therefore, writing to your contributors in order to obtain, if possible, samples of what they consider to be heartsease honey. Should any of your readers be in position to aid me in securing such samples I should be pleased to have them communicate with me about the matter. W. J. YOUNG,
April 25. Assistant Microchemical Laboratory

### THE PREVENTION OF SWARMING IN RUNNING FOR EXTRACTED HONEY.

In this issue we have two quite notable articles, one by W. Z. Hutchinson and the other by E. D. Townsend, on the production of extracted honey, giving methods in connection therewith for the prevention of swarming. We tested modifications of these in our own yards some years ago, and we found them eminently successful. The drawing of the brood from the lower story, and putting it into another upper story, gives the queen more laying room and breaks up very largely the tendency to swarm, for the time being. Of course, the swarming problem is comparatively simple in the production of extracted honey; but there are some methods that are more satisfactory than others, and among the former may be named those advocated by the writers above.

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### THE APPALACHIAN FOREST RESERVE.

Nothing will be done by the present Congress with regard to the above-named reserve, as proposed by its advocates. Judge J. J. Jenkins, chairman of the House Committee having the matter in charge, reported that, so far as he and his committee could see, to create such a reserve was not a function of the United States government unless it could be shown that it would have a beneficial effect on navigable rivers whose sources lie in the mountains intended to be reserved. This will hardly kill the project, because one of the objects of the proposed reserve is to protect the flow of the rivers by keeping back floods and letting down water during dry spells. It is the most gigantic enterprise ever proposed by any government, as it would eventually cost 1000 million dollars, and stretch for 1500 miles, from Maine to Georgia or Alabama. Nearly 1000 commercial organizations reported in its favor, and the general attitude of Congress is favorable; but it is too large an enterprise to be settled offhand. It would be a grand bee-keepers' reserve. W. K. M.

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### SOUTHERN BEE CULTURE.

Mr. J. J. Wilder, the aggressive and enterprising apiculturist of Cordele, Ga., has recently entered the lists of bee authors and publishers by the introduction of a new book on bees and bee-keeping with the title of "Southern Bee Culture," published by The A. I. Root Co. There was a distinct need of such a book, for in recent years we have had no work dealing specifically with bee-keeping as it is practiced in the great and beautiful southland we know as Dixie. We are of the opinion this new work will fill all requirements, as it is written by a Southern man of great experience and practical knowledge; besides, he has added, to his own observations, communications from well-known Southern bee-keepers, such as Mr. Louis H. Scholl, of Texas; Mrs. Mary L. Hawley, of Oklahoma; Messrs. Worthington and Smith, of Mississippi; Messrs. Crawford and Dawson, of Louisiana; Messrs. Bearden and Forehand, of Alabama; Messrs. Chatham and Simpson, of South Carolina; Mr. C. C. Ramsey, of North Carolina; Mr. T. S. Hall, of North Georgia, and Messrs. Hirheny and Tucker, of Florida. In this way the book covers a wide field with accurate information as to the bee-keeping possibilities.

Over a great portion of this territory the bee-keeping resources are imperfectly developed or not at all. There are still far too many bee-keepers in the South who use "gums"—not hives. These have the merit of being cheap, but they get "cheap" results. Mr. Wilder addresses himself to this class, and the instruction he gives is plain and practical. He eschews all superfluities, and deals largely with the practical. His aim is, evidently, to advise the beginner; but many others will find the book readable and instructive—more particularly those who would like to move to a new location in the South.

The pages are about the size of these, and there are 150. The price is 50 cents in paper covers, which we think is reasonable, for the book is well printed on good paper, and fairly well supplied with suitable illustrations. W. K. M.

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### EXTRACTED-HONEY PACKAGES; PREVENTING LEAKAGE AROUND THE CAPS.

At the last convention of the Northern Michigan Bee-keepers' Association, held at Mancelona, April 8 and 9, a very interesting discussion took place on the general subject of putting up extracted honey. In answer to the question, "How can honey be prevented from oozing out around the screw-caps of pint-cans?" the following plan was given:

Fill the cans with honey, and place them in water heated to 160°. While they are still hot, put on the caps and turn them down as far as possible, being careful meanwhile to have every thing level, so that the honey may not wet the rubbers. After the cans are cool, the caps may be turned down a little more; and if the rubbers during this time have been *kept dry* there will be no leakage.

In Northern Michigan, considerable honey is put up in tumblers, and there were several plans given for making the caps tight. One member advised brushing the insides of the caps with melted paraffine and then applying them to the tumblers which had meanwhile been filled and cooled. With this plan no paper is used.

Another used paper disks cut about half an inch larger in diameter than the top of the tumbler. These were dipped in hot paraffine, instantly applied to the tumblers, and crowded down over the tops with hot caps. Parchment paper was used. Ordinary paraffined paper would not do, since it must be wet with hot paraffine at the time it is put on.

Mr. C. F. Smith, of Sheboygan, uses no paraffine at all, and still has no leakage. He procures a special crinkled paper like that used as a lining for sugar-barrels, and the disks made of this are crowded on the tops of the tumblers under tightly fitting caps. With this plan, and, in fact, with any similar plan, it is important that the tumblers be uniform in size, so that there may be no variation in the fitting of the caps.

Corrugated paper should be used under and over the jars in the crate, and the cover of the crate should then press lightly on the corrugated paper in order to prevent any possible loosening of the caps during shipment.

### REQUEENING ALMOST AUTOMATICALLY.

THE following, appearing in the *Bee-keepers' Review* for April, looks so feasible that we are glad to offer it to our readers:

Mr. J. H. Collins, of Bardwell, Kentucky, writes me of a plan he uses in requeening, whereby it is not even necessary to hunt up the old queen. Here is the plan:—

Prepare a super or upper story by boring two holes near its lower edge. Cover one hole with a piece of queen-excluding zinc, and fit into the other a tube, several inches long, made of wire cloth. A tube half an inch in diameter and six inches long is large enough. Lay a queen-excluder over the brood-nest of the hive that is to be requeened, set on the super prepared as just described, having the openings over the entrance to the lower hive, and put into the super two combs of brood. The bees from below will come up and cover the brood, when they should be cut off from the lower hive by putting a piece of wire cloth between the upper and lower hives. The warm air and odor from the lower hive can come up into the super, but the bees in the latter must use for an entrance the holes that were bored, one covered with queen-excluding metal, and the other furnished with a tube of wire cloth.

The next step is to furnish this super with either a ripe queen-cell or a virgin queen. When ready to mate, the queen will leave the hive by the way of the wire-cloth tube, but is almost certain not to find the outer opening upon her return, and to be attracted to the lower entrance by the crowd of bees passing out and in. The young queen is vigorous, slim, and spry, while the old queen is more feeble, slower, and clumsy from her load of eggs. The result is that the young queen comes off victorious.

### HIVES VS. METHODS FOR PREVENTING SWARMING.

PROBABLY no other subject related to bee-keeping has been so thoroughly discussed as has the swarming question, and yet something new is appearing all the while. By far the greatest proportion of the matter relative to the subject has to do with methods rather than fixtures; but for some reason, there is no one method that gives universal satisfaction for preventing swarming year after year. In view of this, Mr. Aspinwall has been working persistently for a long time to perfect his non-swarming hive, which, as most of our readers know, has been described in these columns. One extensive producer, however, in commenting on the Aspinwall hive in the *Bee-keepers' Review*, page 111, contends that he would not want it, even if it should prove to be all that the inventor now claims for it. He says:

From past writings from several sources, it is apparent that some of us know enough to put in practice very successful non-swarming methods, holding all of the bees together, if we wish, and I have no doubt that these methods require as little labor as is required in the management of the Aspinwall hive. Mr. Aspinwall must spread his brood-combs, insert slatted dummies, then "remove the outside comb of the strongest colonies at the end of two or three weeks of white-clover yield because solid with pollen."

A successful method can be applied to almost any hive, with any supers; while to stock our yards with hundreds of non-swarming hives and supers will mean the discarding of tens of thousands of dollars' worth of supplies, and the purchase of other supplies at a cost of at least double the cost of the old outfit.

I am entirely willing that the non-swarming hive be further improved and put before the people for trial in various localities; but I shall continue to search and study for better non-swarming *methods*, confident that I seek a better and more logical solution than do the seekers for the non-swarming hive.

### "CORN SYRUP" OBJECTIONABLE AS A SYNONYM FOR "GLUCOSE" ACCORDING TO THE MAINE EXPERIMENT STATION.

PERHAPS some of our readers are of the opinion that we are rather too hard on glucose as a food; but GLEANINGS is by no means alone; in fact, the class publications, which thoroughly understand the problem, are at one with us in condemning the recent glucose-corn-syrup decision made by Secretaries Strauss, Wilson, and Cortelyou, sometimes known as the "kitchen cabinet." The *American Grocer*, representing the grocery trade, and the *Louisiana Planter*, representing the cane-syrup trade, are strong denouncers of the corn-syrup decision. It may be thought that these organs are unduly prejudiced; but here comes the report of the Maine Experiment Station. Note what it says:

ADULTERATED AND MISBRANDED MOLASSES.

Practically the only adulterant found was glucose. Most of the samples examined carried sulphurous acid. In practically every instance the glucose was added to improve the color and "body" of the molasses. In most cases the goods were correctly branded, although frequently the word "corn syrup" was used as a synonym for glucose. Corn syrup is objectionable as a synonym for glucose for many reasons, chief among which is that it is not a syrup as defined in the Maine food standards, and it is misleading, as the average consumer does not realize that glucose is meant by corn syrup. W. K. M.

### SWEET CLOVER GETS ITS DUE.

*Wallace's Farmer*, published in Waterloo, Ia., is generally credited with being the very best authority among farm journals when clovers are up for discussion, so that any thing it has to say is worth reading and studying over. We recently had occasion to commend its position on the problem of sweet clover as a fodder-plant. Again we are privileged to quote another pronouncement in its favor by the same authority. What it says deserves careful consideration by all American bee-keepers. If your neighbors are prejudiced, reason with them, and endeavor to show them that sweet clover is nearly the equal of alfalfa for feeding, and yet it grows almost anywhere. Most writers seem to forget that sweet clover is admirably suited to sheep-feeding, and in the famous San Luis Valley, of Colorado, hogs are pastured on it, and finished off on peas, producing the finest pork known to this country. Also the finest lamb mutton is produced there. Here is what *Wallace's* says:

IS SWEET CLOVER A WEED OR A VALUABLE GRASS?

Farmers generally regard sweet clover, also known as *Melilotus alba* or Bokhara clover, as a weed—not a bad one, but unsightly, though fragrant.

In the drier sections where clover does not grow readily, this grass may be regarded as valuable. It is true that cattle do not eat it readily until accustomed to it; neither do most men like tomatoes at first, though they may become very fond of them afterward. We happen to know two or three men who use sweet clover for pasture right along, and have no complaint about their cattle not eating it. One of our correspondents in Eastern Iowa, writing with reference to the fields of Mr. Coverdale, who recommended it so highly in our columns last year, says:

"In regard to Mr. Coverdale's clover, I have been watching it very closely and believe there is something in it. His cattle went off this grass fat last fall, and sold in Chicago as high as three-months corn-fed cattle."

Sweet clover should not be considered a weed in sections where red clover does not do well and alfalfa is not practicable. There are sections in the South where sweet clover is probably the best clover they can grow. Whether it is a weed in the corn and grass States is evidently open to discussion. We do not recommend its growing where the farmer can grow either common red clover or alfalfa, because sweet clover makes a very coarse hay; and, besides, cattle have to be trained to eat it. Nevertheless, in view of the testimony of men who grow it, it must be considered an open question whether in this section it is a weed or a valuable grass. W. K. M.

### A GLUT OF OFF GRADES OF COMB HONEY; PRICES FOR 1908.

AT the present time the markets are flooded with off grades and No. 2 comb honey, much of it candied. This is an unfortunate condition just now because the goods are seeking a buyer at greatly reduced prices, and these reduced prices have a tendency to depress the market on new

goods, fancy and No. 1. The general hard times, which will probably last for some months to come, will probably make prices on comb honey ease up somewhat; and we desire, therefore, to suggest that some producers raise less comb honey and more of extracted, because extracted always has a market, but at lower prices. Where one has white table honey, and can produce 90 per cent No. 1 and fancy comb honey he will have no trouble in selling it at good prices providing he markets *early*; but if, on the other hand, much of his crop is dark or off-flavored, he should produce extracted largely. Or if he has light honey, but is likely to have a sudden stoppage of the flow, leaving on his hands a large number of unfinished sections, he had better produce both comb and extracted, running more toward extracted as the season closes.

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### MORE IRRIGATION IN IDAHO, AND MORE ALFALFA COUNTRY TO BE OPENED UP.

We have already alluded to the Carey law, by which public lands in the arid region are reclaimed by private enterprise under the immediate supervision of the government, which fixed the price the settler must pay, and, besides, inspects the dams and canals to insure stability. Generally speaking, lands obtained under the Carey law are actually as safe as Uncle Sam's own reclamation projects.

Reports from Idaho are to the effect that the Twin Falls region will soon have the largest tract of irrigated land in the United States, 1,550,000 acres. This will be accomplished by carrying the present canal on the south side across the Salmon River, thereby opening for settlement 800,000 acres now lying useless, but nevertheless rich land. The amounts in acres are as follows: Twin Falls, south side, 220,000; Twin Falls, north side, 200,000; Twin Falls, Salmon River, 150,000; Twin Falls pumping-plant, 50,000; Idaho Irrigating Co., 110,000; Glen Ferry Co., 20,000; total, 1,550,000 acres. In time this will sustain a population of 750,000 persons in peace and plenty. This means there will be a large expanse of good bee territory opened up to bee-keepers. W. K. M.

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### THE PATENTABILITY OF AN APPARATUS OR DEVICE FOR MELTING CAPPINGS AS FAST AS THEY LEAVE THE UNCAPPING-KNIFE.

On page 560 of our last issue we discussed the patentability of the various devices for melting the cappings as fast as they fall from the uncapping-knife. It will be remembered that we stated that the patent of F. R. Beuhne, of Jan. 8, was not, in our opinion, broad in its claims, but confined to only one particular form of construction. We have since obtained the opinion of C. J. Williamson, a patent attorney and an expert on patented bee appliances, from Washington, D. C., who says the patent in question "is not a basic or broad one, but is of very limited scope. Each of his four claims is so narrow, indeed, that not one of them is infringed by either the Mercer apparatus described and illustrated in the article by your Mr. H. H. Root, pages 217, 218, Gleanings for Feb. 15, or by the Peterson apparatus illustrated and described in Gleanings for May 1, page 559." Continuing, he says it is impossible for Mr. Beuhne or any one else to obtain any valid broad claims on his apparatus in view of certain other patents that have been granted to other parties, of prior dates.

When we wrote Mr. Williamson we told him it was our opinion that, while the claims of the Beuhne patent were narrow, the *specifications* were sufficiently explicit to bar any one else from securing any strong claims on an apparatus of a different construction. In reply to this he says, "Your Mr. E. R. Root is right in his view that the Beuhne patent would prevent any one else from obtaining a broad or basic claim on an apparatus for treating comb cappings unless such other persons could show that they completed their invention prior to July 10, 1907, the date of filing the application on which the Beuhne patent was issued."

For the present, at least, machines can be built on the lines of either the Mercer or the Peterson models by any one, and according to Mr. Williamson such builder can even go so far as to use the vertical cylinder for heating the uncapping-knife, shown in the Peterson drawing, page 559, last issue, providing it does not have an overflow pipe near the top and an emptying tap or faucet at the bottom.

But Mr. Peterson and Mr. Mercer have both filed applications, and they may be able to procure patents covering some detail of construction; but, according to the evidence before us, such detail would not be a vital part of the principle of melting the cappings as fast as they leave the knife, such cappings coming in contact with a hot plate or surface.

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### THE RUSSIAN GOVERNMENT EXPERIMENT STATION.

Mr. Abraham E. Titoff, formerly of Ioamosa, Cal., was a visitor to Medina for several days last month preparing for his return to Russia, where he will assume the position of Expert in Apiculture to the government of Kieff. The province of Kieff is admirably suited to bee culture, being known as the land of nightingales and cherry-blossoms. The climate is somewhat like that of Kentucky, probably. The city of Kieff is an educational, scientific, and literary center, being particularly famous for its great technical school, which is not surpassed by any other country. It also has a university and a number of colleges. Mr. Titoff's lines will, therefore, be cast in very pleasant places. He will travel through the state or province of Kieff, instructing the farmers in modern methods of keeping bees. During the five years he has spent in the United States he has perfected himself in the American methods of bee culture, and of course will do his best to instruct his Russian pupils in our methods. He intends to keep thoroughly well posted on all new developments in American bee-keeping. Mr. Titoff has a happy, friendly manner, so that we feel sure he will succeed in his new sphere of action.

Before leaving California Mr. Titoff disposed of his queen-rearing business to Mr. E. M. Graves, of Ohio, who will conduct it on the same good lines as formerly.

On his return to Russia, and when he gets the wheels of his office running smoothly, he expects to be able to breed a few Caucasian and Carniolan queens for export to this country. W. K. M.

# Fancies and Fallacies

By J. E. Crane

Those engravings of the buckling of foundation in sections, p. 152, are perfect. It tries my patience just to look at them.

L. E. Mercer's cartwheel arrangement of bee-house and apiary, p. 149, is novel and good, but not very economical of space. When hives are in straight rows, why not have open spaces in the rows or through the rows in a direct line from the house to any part of the yard?

On pages 158 and 159 Mr. Fr. Greiner makes some very interesting suggestions, and valuable ones as well. Let us plain honey-producers remember the use of a pin stuck in a stick for transferring those little soft crescent-shaped baby larvæ, which to me is the dread of artificial queen-rearing.

### A CHEAP AND SERVICEABLE FEEDER.

By the way, I used a new style of atmospheric feeder last fall. Being short of feeders I sent for 100 friction-top gallon cans. We had only to punch the cap full of holes, and we had 100 feeders holding about 10 lbs. of syrup, at a cost of 10 cts. apiece. When through feeding they can be cleaned, and used for a long time.

### LIQUEFYING CANDIED COMB HONEY.

The hot-air method of liquefying honey as described on page 145 is of considerable value. We have put in steam apparatus for this purpose the past season, and find it is easy to keep the temperature of our tank-room from 90 to 110 degrees. Honey kept there for a day or two is much more readily liquefied when placed in a water bath at 140.

### MAKE ALL THE MONEY YOU CAN.

"While you are making money at keeping bees, why not make all you can?" says Louis H. Scholl, page 206. Well, that depends. I have tried it a great many times, and never yet succeeded. It is a good deal like trying to get every hill of corn to yield as well as the best hill. I never could. Our seasons vary so that I almost always find at the close of a season I have made some mistake.

### ARTIFICIALLY REARED QUEENS.

Mr. Greiner, p. 158, fears that artificial queen-rearing will cause a deterioration of our bees. Guess not. Read and read again what Mr. Alexander says, p. 210. Let me quote: "As I look back I find that the seasons when we received our largest surplus have been, without a single exception, the ones following the year when we reared our queens from some special queen whose colony had given us an unusual amount of surplus the previous summer. It requires only four or five years of careful selection to make a great change in bees in their honey-gathering qualities and in their disposition, until they seem like quite a different race of bees." This does not look like deterioration. Better tack this paragraph up over the door of the honey-house.

### ADULTERATION AND MISBRANDING.

W. K. Morrison, p. 202, says there is very little adulteration now. I believe he is correct; but while a single firm can put out, or bottle, 500,000 lbs. and upward, in one year, of Southern and amber California honey, and mark it all "pure clover honey," there will be room for some missionary work. [Give this firm's name over to the Secretary of Agriculture, Washington, D. C. This would stop such work.—Ed.]

### HONEY AT HOTELS.

"Honey as an article of food at our leading hotels" is worth while to keep drumming up. I can bear witness to the good quality of the honey at the American House, Medina; and it is good advice, too, to supply them with only the best. And, say! another thing—when traveling ask your waiters at the tables for honey. It is amusing to see the vacant look on their faces as they retire and come back to inform you in a meek way that they have none.

### COMB-HONEY COLONIES SHORT OF STORES.

Stray Straws, p. 139, quotes Doolittle as saying that, in his locality, a colony which has stored comb honey is rarely short of stores for winter, but thinks it not true at Marengo with eight-frame hives. It is not true here, even with ten or twelve frame hives. There is a great difference whether we have only clover for surplus or clover, basswood, and buckwheat. Clover usually fails in July with the hive full of brood and scant stores.

### PROHIBITION ON PULLMAN CARS.

Stray Straw, p. 200, "Prohibition, nowadays, is all the while cropping out in new places and in new ways." Just so. Recently the Pullman Car Co. ordered all their cars in the United States to discontinue the sale of intoxicating liquors. Now if they will sell comb honey in all of their dining-cars, as they do in some of them, the bee-keepers of the country will be the last to complain. [Good suggestion. We may tell you on the sly that some bee-keepers are already furnishing the Pullman people comb honey, and they are buying lots of it.—Ed.]

### DOOLITTLE'S SIMPLE PLAN OF REQUEENING.

In this same article, page 159, Mr. Greiner discusses requeening, and the best methods of introducing the young queens, none of which seem so simple and inexpensive, especially where extracted honey is produced, as that described on pages 45 and 111 of "Scientific Queen-rearing," by Doolittle, which is, briefly, this: Hatch a young queen in an upper story and shake her with the rest of the bees below, or in front of the entrance, when she will surely supersede the old queen. I think every year I will try this method on a larger scale; but when the time comes I find my hands so full of other things that I do not carry out my plans.

BEE-STINGS FOR RHEUMATISM.

Your head is level when you say, Mr. Editor, p. 153, that you "have no faith in bee-stings as a cure for all forms of rheumatism, nor even for the same forms that afflict different individuals." Last spring, when our man Lewis came to help us, he complained bitterly of his swollen and inflamed wrists. He had been working in a damp pulp-mill. A few bee-stings applied gently to his painful wrists relieved him at once. On the other hand, I have been laid up for over five weeks this winter with rheumatism after receiving enough bee-stings to render me immune the rest of my life, I would suppose.

VISITING BEE-KEEPERS.

"It pays the bee-keeper to go visiting occasionally. Whenever occasion offers, take a trip around to other bee-keepers, and a short stay with them may make you more enthusiastic when home again." He says, same page, and he never said a truer thing, "I never visited another bee-keeper without being benefited, so far as I remember. Even a shiftless bee-keeper may give you some points and set you to thinking." And now, friend Scholl, I wish to thank you for your efforts at exhibiting and introducing granulated honey. It is going to take a lot of "hot air" to introduce it and make every one understand it, but it must be done.

THE LOSS IN FEEDING A THIN SYRUP.

The article by Allen Latham, p. 212, "Thick Syrup vs. Thin for Winter Feeding," is one of more than ordinary value, it seems to me. I have been especially interested in his estimate of the loss by feeding thin syrup in place of thick. I have no doubt in my own mind that his estimates are based on most carefully conducted experiments, and he knows whereof he affirms. He estimates there is a loss of nearly one-fourth by the activity of the bees in the amount of winter stores a given amount of sugar will give if fed thin or thick, to say nothing of the loss of vitality in the bees fed. I have fed a large amount of sugar syrup during the past 25 years. I began by feeding 2½ sugar to 1 of water; but after a time I dropped to 2 sugar to 1 water. If fed warm, bees will, as a rule, take it up quickly. Last fall I had one yard very short of stores, and required some 25 or 30 lbs. of thick syrup each, to last them until June. But this yard was some ten miles from home; and to save time and cost of hauling syrup so far I decided to take a ton of sugar to the yard and then get water near by and mix and feed thin syrup—half sugar and half water by weight. I did so, and finished feeding in three days, and thought it a success; but when I came to pack for winter I was astonished to see how light the hives were in stores, in this yard, and have been unable to account for it until these statements of Mr. Latham appeared. Had I fed all my bees in this way there would have been a loss of more than $100 worth of sugar. I find no trouble, as a rule, in feeding sugar 2 to 1, if fed when warm. A single colony will sometimes take up 25 lbs. of syrup in 24 hours.

*Later.*—I felt anxious about those bees fed on thin syrup, and went up to the yard to look them over the fore part of March, and found 32 colonies dead—yes, "dead as a door-nail," and every one was dead from starvation, and others were on short rations. Now, I have had to feed most of my colonies in the fall for the past 25 years, and this is the first time I have met with any serious loss from starvation, and also the first time I have ever fed thin syrup or cold syrup, and I can not help thinking there must have been quite a loss from warming and reducing so much thin syrup. It would even have required a considerable amount of fuel to warm and reduce 4500 lbs. of syrup (half water) to syrup one-fifth water. And this the bees had to do with the sugar syrup fed — rather expensive method. I had 136 colonies in this yard.

# BEE-KEEPING IN THE SOUTHWEST

By Louis Scholl

The spring is at least a month early in most parts of the Southwest. The bees have been swarming since March 1, and all hives are just boiling over with bees.

The first honey-flow of 1908 opened about March 1. The main sources were Texas persimmon (*Dyospyrus Texana*); round-flowered catclaw (*Acacia Rœmeriana*), and several other early bloomers.

Wintering my bees in three shallow stories of the divisible-brood-chamber hive gives me a large brood-nest and rousing colonies early in the spring. The comb capacity is equal to 18 L. frames, and from 40 to 50 lbs. of honey is left to the bees in the fall.

The apiary making the largest average of surplus last season, and coming out strongest this spring, is made up of different combinations of hybrids from Holy Land stock. They are hustlers, but they hustle every thing at times. They are ferocious stingers. Now I am in a quandary —which is better, those stings or a few less pounds of honey?

To prevent swarming with the least amount of labor I cut up the brood-nest in the three shallow stories of the divisible-brood-chamber hives like this: The upper story is being gradually filled with honey from above, and the brood will be crowded out of it by the time the main honey-flow comes in April. The middle story is full of brood, while the lower one has only a portion of the upper part of its combs with brood. Swarming will be retarded until the honey-flow by simply placing the lower story, just mentioned, between the two filled stories, providing it is done immediately, *before the swarming fever is contracted.* In so doing we tear asunder the brood-nest by furnishing the story containg the frames having the empty cells for egg-laying. As soon as the honey-flow begins, all swarming ceases.

For the bee-keeper who does the right thing just before it is too late, swarm control is quite easy. Experience has taught me this again this

year with my fourteen apiaries and a most favorable spring for excessive swarming.

THOSE WIDE BOTTOM-BARS.

Wide bottom-bars are not only objectionable because they do not allow free examination of the combs from below, but frames with such are not as easily removed and replaced in the hive as those with narrow bottom-bars. In rapid handling, especially when the first comb is taken out, the wide bars cause the bees to be rolled over the combs of the next frames, and there is trouble —more so if the combs are not exactly straight. Then when the frames do not hang quite true they "stick together" below, and often two such wide bottom-bars can not be separated. How is it with you, Doctor Miller? I can't make 'em work here in Texas, and especially in big-scale bee-keeping.

BUCKWHEAT AS A HONEY-PLANT IN TEXAS.

A correspondent wishes to know about buckwheat in Texas for bees. It was given a trial for a period of three years at the Texas Agricultural and Mechanical College and Experiment Station, and as a honey-plant it has not proven of very much value, on account of the dry seasons that prevail in this State for the greater number of years. It thrives well in favorable seasons, and makes rapid growth, maturing to the flowering period in about thirty days. When the weather was favorable the blooming period extended over several weeks, and the bees worked on it industriously. By making successive plantings one month apart it was possible to obtain a succession of bloom for several months in early summer, before the heat was detrimental to its development. The first plantings were made in early April, the second in May, then in June and July. The later plantings generally succumbed to the drouth that usually sets in at that time.

The seed is planted best when drilled in rows just as cotton is planted here in the South. It was found that cultivating it in rows caused a better growth, and the buckwheat lasted longer. Sown broadcast it did not grow so luxuriantly, and soon seeded and died down.

As a honey-plant it did not prove a success, however. First, our seasons are not altogether favorable in too many years. Although it blooms profusely at times, it does not yield nectar. Then, second, the yield is not abundant enough to warrant planting for honey alone. Often the seed does not mature well enough to plant for that purpose. And, lastly, buckwheat honey is dark and of a rank flavor that would not find a place on our Texas markets. It is as dark and strong as some of our cane syrups or molasses, and therefore is not liked here.

WHEN TO REQUEEN.

It is not the best time to requeen in the spring of the year, for the reason that it is almost impossible to judge the right condition of a queen at that time, unless she has been marked the fall before. If a colony does not come up to requirements during the present season and the fall, and the same queen is behind the following spring, then she may be safely replaced. If she has not been kept track of the fall before, it is impossible to know whether she is a poor one until later in the season. There are too many circumstances under which a queen is kept from doing her full duty in early spring. Her colony simply being weak does not necessarily prove that she is a poor queen. Conditions play a great part in this; the food supply, the condition and age of the bees, and other factors, add to this. Right in line with this is the following from L. B. Smith, of North Texas:

> Did you ever notice what a difference there is in the same queen as to prolificness of good and poor years? For instance, I had several of my queens marked as "poor," and some marked as "very poor." These I expected to replace at an early date this spring. Now for the result: I have replaced but two or three of those queens, and I shall not replace the others, for they are proving the equal of any queen I ever had in my yards. Now, why this difference? It's bound to be the season. Last year was very poor for bees through the main breeding season (April and May). This year, as stated elsewhere, is at least a month ahead of the ordinary seasons, and we could not ask for a more favorable time so far for the bees; and should this favorable weather hold on I look for one of the largest honey crops Texas has ever furnished, owing to the fact that bees are *all* strong and well supplied with honey. I have never seen the various honey-plants of this part of the State in a more thrifty and promising condition.

A queen shows her failing best right after the honey-flow is over, and this is the best time to requeen here in the Southwest. It costs very little to do it, and, instead of having weak colonies to go into winter quarters, those with a fall-reared queen in the place of the old worn-out one, will have an extra lot of young worker bees—yes, a rousing colony in fine condition. Such a colony will store a little more fall honey than one having an old queen; and with this additional amount of stores and a great lot of young bees to last well into the next season, great results in the way of surplus honey can be secured, especially since the young queen will not swarm. A colony with an old queen is weaker, and is made up of older bees, since the queen ceased laying earlier.

# CONVERSATIONS WITH DOOLITTLE

LOCATION, SECTIONS, AND WIDE FRAMES.

"Say, Mr. Doolittle, do you know the source from which our first pollen comes in this locality —I mean the first which enables the bees to secure great loads of it, and all they want?"

"I think so—don't you?"

"Well, I just want to tell you what I found. There is a swampy piece of land about a mile southeast of my house, and that warm morning we had a few days ago started the bees out early, almost before sunrise. When I went out I thought they were robbing, as there was such a roar in the bee-yard, but upon looking I found the bees hustling in the hives with great loads of yellowish-green pollen, while the surging in and out of the hive was almost like what it is some mornings during basswood bloom. I took a circuit around the apiary to see where they were going, and found them headed for that swamp. After breakfast I started out; and when I got over there the elm-trees, which compose the timber in the swamp to a very great extent, were just roaring with bees; and where some of the branches came down low I could see the bees at work. I wish you could have been there and seen them."

"I know they looked beautiful to your eyes,

for I have seen the same things in years gone by during some warm morning the latter part of April or the first of May."

"Indeed they did look beautiful, and it was very reluctantly that I left them. But I want to say a few words about sections and section-holders. Mine annoy me. The section-holders have no top-bars—just ears to hold them up with. In putting in the sections the tops are spread outward; but when the holder full of sections is hung in the super the weight tends always to close the top, thus making the sections remain close together. This seems to make many of the sections diamond shape, so that, when I come to crate them for market, and they are pressed together in the crate, it brings them back square again, thus loosening the combs from two sides, setting the honey to running, and endangering a general breaking-down in shipping."

"The proneness of all but nailed sections to go diamond shape, or fall to pieces entirely, was what lead me to discard the whole business, and use only nailed sections—sections which do not depend upon the honey, comb, and propolis, which the bees put in and upon them to hold them from going to pieces during the shipment of the finished product."

"But don't you have trouble about breakage when shipping to New York or Philadelphia?"

"Very rarely; and when any are broken it is only one or two in a crate. A few years ago a shipment of my honey went to New York on the same car with a shipment of these sections which you are speaking of, both to the same commission man. Two sections in each of three crates out of my shipment were reported as broken, while the other shipment was so broken and smashed that it brought only a little over half the market price. In fact, nearly one-fourth of the honey leaked out before it arrived at the commission man's store."

"But don't you think there might be other reasons for this outcome?"

"Possibly but not probably, as the freight agent told me both were loaded with the same care. Let me give you another case: Two years ago I carted my honey to the railroad station in the auto; and as the springs were so easy I thought it not necessary to take any special pains to prevent its falling off. While on a smooth piece of road I was spinning along when I met a team, and, in turning out, one of the front wheels of the auto dropped into an old rut on the side of the road which was partly covered up so I did not notice it. This threw one of the top crates of honey off, it striking on the front wheel, then falling on the ground in such a way that the wheel struck the top and one corner of the crate, tearing the crate to pieces, and scattering the twenty sections all about over ten or twelve feet of the road. I stopped the auto, saying, as I got off, 'There goes $3.50 worth of my best honey for my fool driving and fool loading, when, to my surprise, not a single section was broken. I collected the sections together; picked up the crate, and drove on. When I arrived at the railroad I borrowed a hammer and a few nails, remade the crate, and packed the sections in it. It went with the rest, sold for the same price, and the consumer never knew that his nice section honey had been nosing all over the road up here in Onondaga Co. I would not take either the one-piece or the dovetailed sections as a gift if I could possibly buy the material for the nailed ones."

"But it takes lots of time to nail them."

"I know it takes a little longer to put them together; but this is done during the stormy days of winter; and after they are made they are a source of joy, and something which gives one a freedom from annoyance not possessed by any other section on the market."

"Well, I know that my experience with some of the sections has been very annoying, as well as with the section-holders."

"I think myself that your section-holders are somewhat to blame for your troubles. With properly made wide frames your sections would not go diamond shape, and the sections would be kept clean of propolis."

"With your wide frames, don't the bees varnish the tops of the sections all over with propolis?"

"No; I never could tolerate any thing which allowed the bees to have access to any part of the outside of the section, for where they so have, it takes double the time to clean our product ready for market—time that is the most valuable of any during the whole year, to say nothing of other objections. Wide frames properly made keep the sections nearly as clean and bright when removed, even on their edges, as when put on the hive; while the top and the whole outside looks as clean and new as they did when they first left the saw or sandpapering-machine."

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### CLIPPING QUEENS WITHOUT HANDLING THEM; CHANGING PLACES TO STOP ROBBING.

Mr. Holtermann told us that we should propolize our fingers before catching a queen to clip her wings, and then change her from one hand into the other. I clip the wings of a queen with small crooked scissors while she is running up the comb. Several times I have found her in the act of looking into a cell, and off would come her wings, and she would look into the next one without knowing any thing had happened to her. I have practiced this plan ever since I started to clip wings of queens.

The plan I use to stop robbing is to change the places of the robbed and the robbing colonies. It works so well that I have never tried to improve upon it. The uproar is twice as bad after the change as before; but the robbing is stopped at once. It is amusing to see those robbers come rushing out with their loads of honey, to find out they had to take it back where they got it and turn around and defend the hive they had been robbing only a moment before. I have followed this plan ever since with good success. Isaac Balmer.

Burlington, Ont.

[Both plans here spoken of have been mentioned before. Clipping a queen while on the comb was described by Friedman Greiner first in these columns, and then in the A B C and X Y Z of Bee Culture. The scheme of exchanging places of the robbing and robbed colony was described by A. I. Root in the first editions of the abovementioned work. But even if these ideas are old they are good.—Ed.]

# General Correspondence

## COMB AND EXTRACTED HONEY PRODUCED IN THE SAME SUPER A LA TOWNSEND.

### A Modification of the Split-section Plan.

BY R. R. FOSLER.

I wish to make a few remarks on articles which have appeared in GLEANINGS.

In Fig. 1 are several sections of bait combs partially drawn out from foundation put in by the Hand method in split sections. As you will notice, the foundation does not extend down to the lower end, as the foundation used was only 3⅞ in. wide instead of 5. I am in favor of this method in several ways: first, the combs are fastened to the sections better than in any way I have tried before. The few sections that I experimented with were not put in wide frames with top-bars as Mr. H. advises, but in common section-holders with simply the bottom and the ends. In this way the bees gnaw the edge of the foundation that projects through the wood at the top of the section, leaving it somewhat below the surface of the wood. In this crack the bees deposit small quantities of propolis, completely hiding the wax. After the sections are taken out and scraped it is almost impossible to tell that there ever was any foundation there. The only objection I can see to this method is the buckling. These sections that I was experimenting with buckled slightly, but the photo does not show it.

Fig. 2 shows some finished sections with top and bottom starters. These are not filled out quite as perfectly as they might be, but were taken off as soon as capped over, which accounts for that. These were obtained by the plan of producing both comb and extracted honey in the same super, which Mr. Townsend described on page 776, June 1, last year. I consider this the best article that has appeared in GLEANINGS for some time. I tried the matter thoroughly, and am convinced that I have tried nothing better.

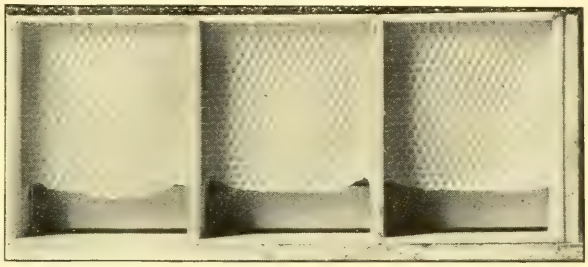


FIG. 1.—SPLIT SECTIONS CONTAINING FOUNDATION PARTLY DRAWN.

I also tried this on weak colonies that were not strong enough to work in comb-honey supers without the extracting-combs for baits. Shortly after this super was put on, the bees were found working on the extracting-combs at the side of the super, and then when work was started in the sections it was started at each side instead of at the center; and, as a result, they were nearly all finished at the same time.

Milford, Neb.

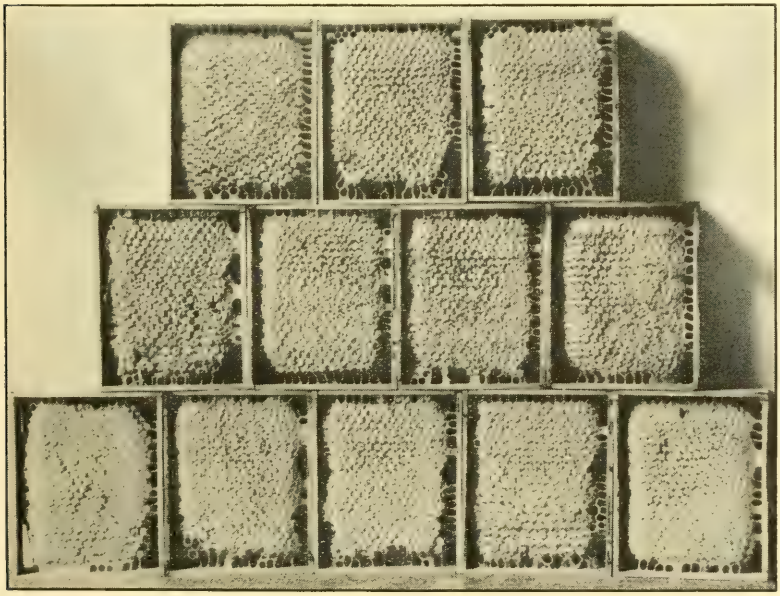


FIG. 2.—HONEY PRODUCED IN A SUPER WITH EXTRACTING-COMBS AT THE SIDES.

This honey was removed as soon as capped, which accounts for the fact that the sections were not filled clear to the sides.

[The plan of producing comb and extracted honey in the same super, we are sure is all right, as we have tried something very similar. In the case of colonies slow about going into the supers, it is especially good.

We are not sure but thas section-holderr may be bettet

MEMBERS OF THE SOUTH IDAHO AND EAST OREGON BEE-KEEPERS' ASSOCIATION.

for split sections, in that they eliminate partially one objection—namely, the unfinished and man made look of the foundation projecting up through the wood at the top of the section. Has any one else any experience to offer on this point?—ED.]

## SOUTH IDAHO AND EAST OREGON BEE-KEEPERS' ASSOCIATION.

### The Problem of Educating the Farmers Concerning the Proper Time for Cutting Alfalfa.

BY A. E. GIPSON.

The South Idaho and East Oregon Bee-keepers' Association was organized four years ago at Parma, Ida., and is composed of representative bee-keepers of the sections of the two States named. The objects of the association are to bring about a coöperation among the honey-producers in all matters pertaining to that industry, and especially in buying supplies and in marketing the products of the apiaries.

In view of the high quality of the honey of this region, members of the association are coming to realize more fully each year the importance of placing it on the market in the best possible shape and so the matter of marketing is receiving a good deal of attention. This fact was shown at the last annual meeting of the organization, when the discussion of this subject was given so much prominence.

The great strides that are being made in irrigation enterprise in Southern Idaho, by means of which hundreds of thousands of acres of fertile land are being opened up, with alfalfa as a leader in crop rotation, reflects the future of bee-keeping here. This great forage-plant is the main reliance of the honey-gatherers, and bee-men are directing their efforts toward securing as long a blooming season as possible for the benefit of the little workers. To this end they are trying to educate the farmers up to the point of not cutting the alfalfa crop too soon after it begins to bloom. The contention is that it is not only better for the bees, but for the nutritive value of the plant as a stock ration, to permit a pretty full blossoming before each cutting is made.

Fortunately the association has a membership composed largely of men of wide experience in the apiary. Some of them, furthermore, have national reputations.

E. F. Atwater, for example, is not only a successful man as a commercial bee-keeper, but is widely known as a writer and expert on matters pertaining to the industry.

G. J. Yoder is another careful and exceedingly well-informed man, and likewise a veteran in the business. Both of these men are known to many readers of GLEANINGS by reason of their demonstrations and valuable observations.

Other prominent members are F. A. Powers, F. R. Fouch, J. E. Lyon, Will Pennington, Ben Paine, H. C. Dudley, A. I. McClanahan, R. D. Bradshaw, T. A. Waale, John A. West, and Mrs. A. J. Mitchell. These, and others who could be named, are making local history for the bee industry that must count in the development of that industry in all this region of country.

The last annual meeting was well attended, and was of exceptional interest. The *Gem State Rural* says that from 3500 to 4000 colonies of bees were represented, and that the Boise Valley, Ida., alone marketed about seven cars of honey during the year 1907.

A committee was appointed, consisting of E.

F. Atwater, F. R. Fouch, R. H. Bradshaw, and Will Pennington to look up markets and suggest prices for the present year's crop.

The officers elected for the ensuing year were, J. E. Lyon, President, Boise; Ben Paine, Vice-President, Roswell; E. F. Atwater, Secretary and Treasurer, Meridian; F. A. Powers, Parma; R. A. Bradshaw, Payette.

Caldwell, Idaho.

## A PROMISING YOUNG HELPER IN THE APIARY.

BY C. RANEY.

The engraving shows my neice, who is my only help in handling bees. Though but nine years old, she seems to have the bees charmed in some way, for she uses neither veil nor gloves, and never gets stung. The two hives in the picture belong to her. They were in fine shape for winter, weighing 200 lbs. each. Both were swarms hived last June. We took 75 finished sections from them last season.

Our principal honey crop in middle Tennessee is from the white and sweet clover.

Petersburg, Tenn.

WINNIE C. MUSE, A YOUNG HELPER IN THE APIARY WHO USES NEITHER VEIL NOR GLOVES.

## BEESWAX IN THE ARTS.

### Sulphuric Acid Makes Wax Unfit for Certain Manufacturing Purposes.

BY J. L. BYER.

The average bee-keeper has a very faint conception as to the various uses to which pure beeswax is put at the present time. As a matter of fact, the use of beeswax in the different manufacturing industries is increasing very fast; and if this were not the case it is quite certain that the price of this important product of the hive would be much lower than at present, which price, by the way, is none too high to say the least. During the last eight years I have marketed something over 3000 lbs. of beeswax, and yet it was only this winter that I found the various uses to which the wax is put, of which I previously had had no idea. Some time in December the manufacturers of a certain line of paper wrote me saying that my name had been given them as one likely to supply them with pure beeswax, and they asked me to quote prices and send sample for trial. In reply I stated that we had such confidence that our wax would prove satisfactory that we would forward 100 pounds; and if it did not prove to be satisfactory they could return it at our expense. They were told that the wax was rendered from old combs, was free of dirt, but only ordinary in color. Incidentally, I stated that, by remelting and clarifying with sulphuric acid, the color would be improved; but I would not recommend this treatment, as I considered it a waste of time, and there was also a danger of overheating, and possibly destroying more or less the ductility of the wax.

On receipt of my letter they wrote me saying that, if any sulphuric acid had been used in rendering my wax, it would positively be useless for me to send even a sample. They were emphatic in the matter, and it was of the *greatest importance* to them to be certain that not the slightest trace of acid be present in any beeswax they purchased. In the end a five-pound cake was sent as a sample, and in the course of ten days a substantial order was received. Only a few days ago the manager of the factory told me that the wax gave entire saisfaction. However, the attitude of this firm led me to do some investigating, and I find that a large number of dealers and manufacturers are under the impression that, for certain uses, the addition of sulphuric acid in rendering wax is harmful to the finished product. Whether this claim is well founded or not is not for me to say; but one fact was undisputably brought out by my inquiries, and that is, for *some* reason a large quantity of beeswax is being put on the market

D. DANIELSEN AND FAMILY, OF BRUSH, COL.

Mr. Danielsen writes that his family consumes 60 lbs. of extracted honey every month—720 lbs. a year, on the average. This picture is not a poor testimonial as to the food value of honey.

that is entirely useless for certain manufacturing purposes. As intimated, rightly or wrongly, quite a number are putting the blame on sulphuric acid, and it is up to the bee-keepers to find out if their claim is correct or not.

Of course, it is generally assumed that *all* the sulphuric acid settles with the water at the bottom of the cakes of wax; but that such is not the case was fully proven to the writer and some others by a little incident that occurred last summer. A friend bought a lot of beautiful wax that had been clarified with sulphuric acid. The wax was remelted and run into tart-tins, and the small cakes were sold at fairs. These tins, after the wax was taken out, were covered with a greasy coating, and my friend was telling me only a few days ago that, up to the present, they had found no way of cleaning that coating from the tins. No doubt that, in this case, an excess of the acid had been used; but the case serves as an illustration as to what might happen any time if no exact formula was observed.

The manager of one of the departments of a manufacturing firm in New York State told me that they use thousands of pounds of beeswax, and at present know of no substitute to take its place. They had experienced considerable annoyance and loss by getting a lot of wax that would not work right, and now they would buy only after having found the sample satisfactory, and following shipments had to be guaranteed the same as sample.

This man was inclined to think that some of the wax was overheated in modern presses used, and the ductility, or (as he expressed it) the "life" was taken out of it. At least one extensive dealer in painters' and artists' supplies in the city of Toronto stipulates in all his contracts for wax that no sulphuric acid be used in the rendering of the same.

In submitting these statements it is not my intention to raise a false alarm; but to my mind the question is a very important one, and it seems to me that the opinions of the dealers and manufacturers are entitled to some consideration. That, as before stated, a lot of unsatisfactory wax is being put on the market, there is no question, but to decide just what is the cause of this state of affairs is another proposition. That a number of our best bee-keepers use the sulphuric acid does not necessarily prove the wisdom of that course. In all the wax I have rendered, only once did I use the acid, and yet I have never had a single complaint from those who have bought my wax. That the acid does not injure the wax for foundation purposes is self-evident from the fact that thousands of pounds of such wax is used annually for that purpose. But in the making of foundation the wax undergoes different processes than is the case in other uses to which the beeswax is put.

Would it not be wise for the bee-keeper to dispense with sulphuric acid? then if the foundation-maker wishes or finds it necessary to add the acid, let him do so.

It is a subject I should like to see made the object of scientific research, so that we may definitely know the cause of so much inferior wax being produced. We may rest assured that, if the manufacturers continue to get much of this poor wax, science and invention will speedily come to the rescue, and we shall find our product supplanted by something else.

Mt. Joy, Ontario, Can.

## EXTENSIVE HONEY-CONSUMERS IN COLORADO.

### Honey from Alfalfa.

BY DANIEL DANIELSEN.

We have just had a picture of our family taken. You see we thrive well on honey and other good things. We consume 60 lbs. of extracted alfalfa honey every month in the year, besides a little comb honey. I began bee-keeping in 1891 in South Dakota; moved to Colorado in 1902, and have now about 130 colonies. Bees wintered well so far; but the trouble here is in the spring. There is no nectar for the bees until alfalfa comes. I wish there were some plant that would yield honey in May.

Brush, Col., Jan. 31, 1908.

## BEE-KEEPING IN TEXAS.

### Battling Against Ants, and Competing with the Mexican Strained Honey; Some of the Sources of Honey.

BY S. M. CAMPBELL.

Bees in this part of the country make a little honey nearly the year round. Mesquite is the main honey-plant, and it generally blooms twice a year. The first crop of mesquite blooms in March; then these blossoms are shed, and in June the main crop comes; and, unless there is a big rain, it will last about four weeks. The ebony blooms several times a year (every time it rains), but it stays in bloom only three or four days at a time. During this time, however, it looks like a bank of snow. The honey has an amber color and a very good flavor.

Tanassa blooms after every rain, but lasts only a few days each time; the blossom is like button-willow, but is not half as large.

The catclaw makes a very white honey, with a fine flavor. The huajilla (or guajilla, as some prefer to spell it) has a bunch of round ball-like blossoms, and, like button-willow, makes a white honey and fine flavor.

What this country lacks is moisture. Long intervals sometimes occur from one rain to another. About fifteen years ago it did not rain for eighteen months enough to wet a man in his shirtsleeves. All the creeks and lakes went dry except the Rio Grande River.

The photograph of my apiary does not show all the hives. The yard contains ninety-six hives in two long rows facing the east. The trees are of several different kinds. The one nearest the cactus is mesquite. The others, named in order, are ebony, nocaway, ebony, and nocaway. The hives are shaded all the way along by these trees. At the lower end, not shown, a hackberry-tree has 25 hives under it.

The bees are half Mexican and half Italian. I had a very fine Italian queen—the finest I ever owned. Her daughters were mated to black Mexican drones. These are said to be very cross, but my bees are the gentlest I ever worked with.

The reason the hives are set upon the long benches is on account of the ants, which are very numerous in the Southwest. There are several different kinds. The worst of them all is a little sugar-ant. I managed to kill them by using 16 gallons of kerosene. I would find their nest and dig a hole about the size of a common washpan, and pour in about a quart of kerosene. That would be the end of that nest. Sometimes it would take about five gallons to destroy all of the nests.

I worked up a nice honey trade in Brownsville, although it was a Mexican town. The people had been buying honey from the Mexicans for 50 cents a gallon, squeezed out by hand, including, of course, the bee-bread and young bees. The package used mostly was beer-bottles; and when the honey had set a while the neck of the

A TEXAS APIARY UNDER MESQUITE AND EBONY TREES.

J. S. YODER'S BEE AND HONEY EXHIBIT AT THE VIRGINIA STATE FAIR, HELD AT ROANOKE, SEPT. 24–27, 1907.

bottle would be full of bee-bread and scum that would rise to the top. When I began selling my honey I put it up in glass Mason jars, from a pint to half a gallon, with a nice label on it. When I first went to the houses to sell the honey the people would ask the price, and I would tell them. Then they would say they could get honey from the Mexicans cheaper. But I nearly always made a sale before I left, for I told them how the Mexicans squeezed out the honey by hand, and explained the difference. It wasn't long before I could sell honey by the 60-lb. can to customers who began buying by the half-gallon.

Taft, Texas.

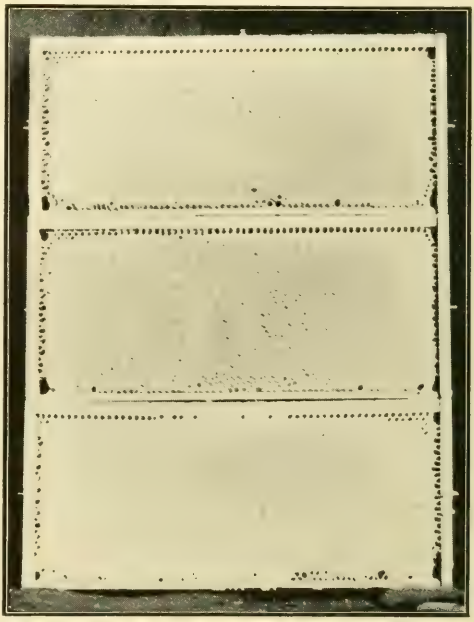
## A GOOD SURPLUS FROM A WEAK COLONY.

### Some Well-filled Frames.

BY WELCH BIBBEE.

Here is a picture of three Danzenbaker frames of honey taken off July 2, 1907. These are the nearest perfect of any that I have ever seen. They were produced by a colony that I thought was almost worthless—in fact, the hive-body was almost rotten, and I had intended to transfer the bees to a Danzenbaker hive; but the spring was so cold and backward that I just took the lid off the old hive and set the Danzenbaker hive on top, and thought that, as soon as they showed signs of being strong enough to transfer, I would put them in the new hive. Probably I did not watch them closely enough, for on July 2 I found that the ten frames were full, with brood in three frames. I took out five frames and put empty ones in their places; and as the colony was doing so well I put a super of 32 sections on the old hive, and this Danzenbaker body on top of the sections. On the 13th I found the sections full and capped nicely, so you see the bees got busy. The flow of honey from July 1 to 15 was the largest I remember, and it was all from white clover.

Cottageville, W. Va., Aug. 12, 1907.



DANZENBAKER FRAMES WELL FILLED WITH WHITE-CLOVER HONEY.

## A PRIZE BEE AND HONEY EXHIBIT AT THE VIRGINIA STATE FAIR.

### An Engineer and Bee-keeper.

BY J. S. YODER.

My exhibit of honey at the Virginia State Fair is shown in the engraving. I had four premium cards attached—one for best display of bees; one for best display of honey; one for best display of comb honey; one for best display of extracted honey. I feel proud of my first exhibit, as this is my third year with bees. I started with four hives of bees in eight-frame Dovetailed hives, and now have forty colonies in good condition.

Roanoke, Va., Feb. 12, 1908.

## A BEE-SHED FOR SHADE.

BY W. O. STEVENS.

The bee-shed in the picture was built simply for the purpose of keeping off the sun and rain, as I winter my bees in the cellar. They are taken from the cellar about the first or middle of April, and they usually begin to gather pollen about the middle of the month from willow and poplar.

I have sold all of the honey I have been able to produce, for 25 cts. per lb., in the villages near by, both extracted and comb. Bee-keeping is not carried on around here to any great extent.

South Paris, Maine.

## CUTTING BEE-TREES IN WINTER.

BY E. L. MINER.

The engraving shows a large red-oak bee-tree, measuring 17 ft. in circumference, which was cut Jan. 7, 1908, in Wayne, Ashtabula Co., O. A large swarm of three-banded Italians was captured, although the thermometer stood at 15° above zero, and it was snowing at the time.

A BEE-TREE 17 FEET IN CIRCUMFERENCE CUT IN MID-WINTER.

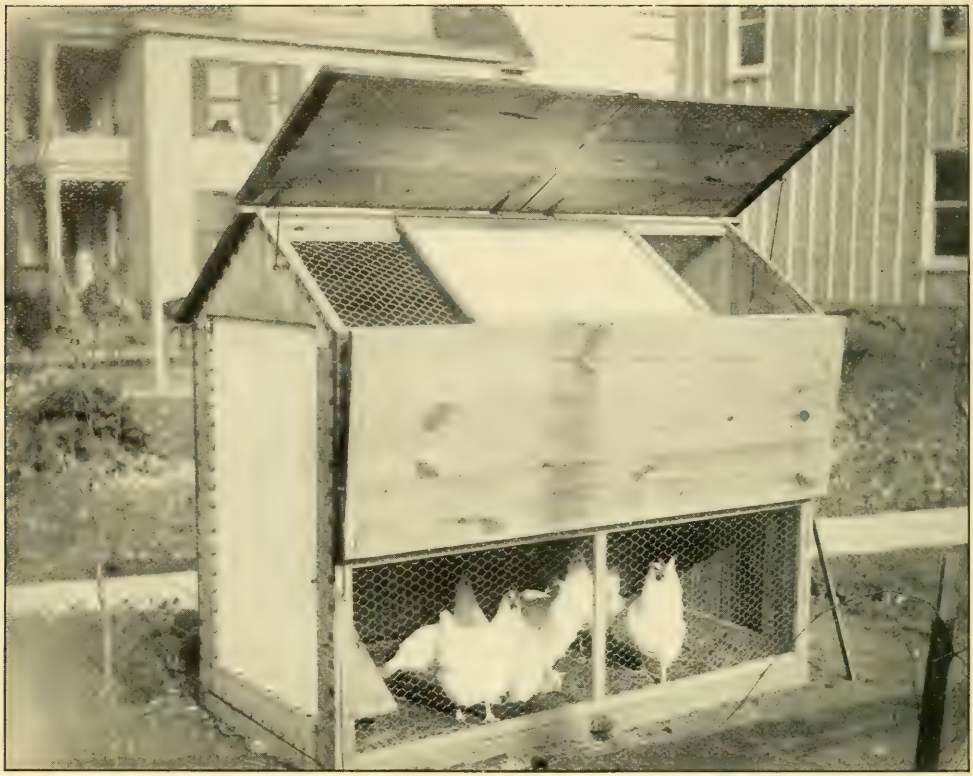
There was no brood at all in the combs, and only about 10 lbs. of honey, all basswood, although neighbors say bees had lived in the tree for ten years or more.

I did not transfer the combs to a hive, but brushed the bees off the combs into a box prepared with cushions in advance. The bees were surrounded with dry rotten wood, and did not get chilled in transferring, as we took them out of the tree by the handfuls.

I had two hives containing large swarms in double brood-chambers, with lots of honey in the combs; and on returning home I transferred the bees from box to the lower

A SHED APIARY IN MAINE.

The shed is used only as a shelter in the summer from the sun, wind, and rain. The colonies are wintered in a cellar.



HOW TO KEEP POULTRY IN TOWN OR CITY WITHOUT ANNOYING THE NEIGHBORS. SEE P. 647

story of the double hive, first removing it from the top story in which the swarm was clustered. I saw the queen in transferring to the hive, which was done in a warm room.

Williamsfield, O.

## EXTRACTED-HONEY PRODUCTION.

### The Locality and Methods Whereby Large Quantities of a Superior Article may be Secured in a Leisurely Fashion at a Low Cost; How to Control Swarming with a Minimum of Labor.

BY W. Z. HUTCHINSON.

*Continued from last issue.*

[The second installment of this series is particularly seasonable and valuable, and we hope every extracted-honey producer will give it a careful reading. The scheme of having combs enough for the season, and extract *after* the honey-flow at our leisure, while not new is attractive, because it enables one to control swarming, and at the same time perform all the labor himself. When one considers that hired help is often wasteful and incompetent, and good help hard and sometimes impossible to get (worse yet, the cost of the help will, not infrequently, *absorb all the profit*), this plan looks good, to say the least. The whole thing is told so simply and clearly that any one can take it in easily.—Ed.]

I would not advise any one to pull up stakes, leave his present location, and move to Northern Michigan without first going there in person, and investigating. To go there and establish a home and an apiary, or a series of them, will require a lot of enthusiasm and grit, patience and perseverance, and time and money. If I had not had a fair stock of the first two I would never have attempted it.

However, I am happy to say that the success of my plan is not dependent upon a location in the raspberry region. It will work equally well in a clover region, but the clover is much more uncertain—likely to winter-kill, or the nectar secretion may be wiped out by drouth, rain, or cold weather.

#### THE PLAN IN A NUTSHELL; HOW ONE MAN CAN LOOK AFTER FIVE OR SIX APIARIES, EVEN DURING THE HONEY-FLOW.

I will first briefly outline the plan; then, as I go back and give details, the reader can the more readily see the "reasons why." In the first place there must be an abundance of empty combs and supers—enough *to hold all of a possible crop*—so that the bee-keeper can put on supers of comb at any time with no hesitancy—just as though the supply were limitless. Of course, these combs and supers cost something; but they have to be bought only once, so that their real cost is only the interest on the money. There is no attempt whatever to extract the honey during the harvest. All of this hustle and bustle and hurry and worry to extract in time to give the bees room during the harvest is done away with. If a colony or a whole apiary needs more room, simply give more supers of comb. This is a quick operation. One

man could look after five or six apiaries, even during the honey-flow, if all he had to do was to put on supers when they were needed, while one apiary would keep him busy if he had to extract the honey to give the bees room. If the hives, or some of them, become piled up too high, it is an easy matter to remove some of the top supers by the use of bee-escapes, and store the supers of honey in the bee-cellar—there is no need to extract at the time of removal unless there is plenty of time for doing the work.

After the harvest is over, comes the work of extracting; but there is no hurry about it; there are probably two months in which to do the work. The honey is all on the hives unless some of it has been removed, as suggested, when that which has been removed should be extracted first. That which is on the hives is not only safe but daily improving in quality. Without the invention of the bee-escape this plan would not be feasible. It is not practical to remove honey and brush off the bees after the close of the harvest; but by the proper use of the bee-escape the whole crop can be taken off with no commotion, no stinging, no robbing, and safely landed in the honey-house without a bee in the yard fairly realizing what has been taking place.

The bee-escape is an important link in this chain; but there is another one equally important, and that is, the use of artificial heat in warming the honey so that it can be extracted when taken off late in the season by the use of escapes. Honey left on the hive all the season becomes well ripened and thick, and the cool weather makes it still thicker and stiffer; and it would be difficult to extract if the work were done immediately upon its removal. If taken off in large quantities by the use of escapes it would be simply impossible to extract it without warming it up. When it is properly warmed up to the right degree it can be extracted more readily, easier, and cleaner than when taken right from the bees in hot weather. As such honey is thoroughly ripened, there is no necessity for any settling-tanks; the honey can be run right from the strainer into the cans or barrels.

Perhaps this system of management might be called the *gentleman's* system. It certainly is an easy, pleasurable, leisurely way of producing large quantities of first-class honey at a low cost. There is no hurry, hurry, hurry to get the honey extracted because the bees are needing more room; and there is no shaking and brushing of angry bees out in the boiling sun.

### ONE DRAWBACK TO THE PLAN.

There is just one kind of locality where this plan will not work out so satisfactorily, and that is where the white-honey harvest is followed by a dark flow. We have one apiary in such a location—one where the flow from buckwheat is likely to start in before that from the berries is finished, and we have to watch it very closely and hustle off the white honey the very *day* that the bees show a tendency to begin work on the buckwheat. It does not take very much dark honey to give some color to a whole lot of white honey. Work it the best we can, there will always be some berry honey not ready to extract, and we are compelled to leave it on the hives to go in with the buckwheat. A fall flow of honey, even if dark, is considered a great advantage, and usually it is, but I am not certain but I should prefer a locality without the fall flow, simply because it would allow me to put in practice my system of management whereby I could take care of so many more apiaries than with the management that requires the removal of the white honey before the close of the harvest.

Having gone briefly over the plan, and shown that the principal features of the combination are plenty of combs and supers, and the use of bee-escapes and artificial heat in extracting, let's go back to the beginning of the season and take up the work, step by step, and give the more important details.

### SECURING WORKERS FOR THE HARVEST.

When taken from the cellar, the stores of the colonies are equalized and the hives protected by being wrapped in tarred felt. No more attention is required until it is warm enough to remove the tarred felt. More equalization of stores may be needed, or, if there is a general shortage, some feeding; and it is almost certain that there must be more or less equalization of brood before the opening of the harvest. In a home apiary this equalizing of the brood might not be necessary, but in an out-apiary it goes a long way toward preventing swarming too early, by some of the colonies, and helps to make all of the colonies ready for the same treatment at the same time—a most important factor in out-apiary management.

When all of the hives are comfortably full of bees, brood, and stores, upper stories of combs are added, one on each colony strong enough to need it. No queen-excluder is used at this time. The queen is allowed full swing in both stories, and this abundance of room at this time has a great tendency to forestall the swarming fever. Once the main harvest is on, and the bees at work in two or three stories, the great danger of swarming is past. In an apiary of 150 colonies, managed last year on this plan, only 7 cast swarms.

When the upper story is nicely filled, or nearly filled, with bees, brood, and stores, and the main harvest has fairly begun, a queen-excluder is placed between the two stories. No time is spent in hunting up the queens. We simply wait four or five days, when freshly laid eggs disclose the presence of the queen. As a rule she will be found in the upper story; if so, we simply transpose the two stories, putting the upper one below with the queen-excluder on top, and then set on top what was formerly the lower story. Usually, at this visit most of the colonies will be ready for the third story.

This plan gives the greatest opportunity for the production of a lot of bees previous to the harvest, then curtails the rearing of brood after the harvest has opened, when the production of brood is at the expense of the surplus. As the bees hatch from the combs above the queen-excluder, the cells are at once filled with honey. Many of the colonies will build queen-cells in the supers above the queen-excluder. I have taken pains to go through the supers and tear out these cells, and I have paid no attention to them and allowed the queens to go on and hatch, and I could not see that any harm resulted from either course—that is, there did not seem to be any difference.

As the season advances I keep on tiering up, adding the empty supers at the bottom, next to

the brood-nest. I have often tiered them up three supers high, and, in a few instances, four supers high, with ten-frame Langstroth hives. At such times I have longed for some sort of hive-lifter, and I expect to try one this season.

One object in adding the empty combs at the bottom, and keeping the oldest, ripest honey at the top, is that, if it should be desirable at any time to remove any of the supers of honey, either to extract the honey at once, or because the hive was becoming piled too high, the oldest honey would always be on top, where it could be removed the most readily by the use of bee-escapes.

*To be continued.*

## MANAGEMENT PREVIOUS TO THE HONEY-FLOW TO PREVENT SWARMS.

### Increasing the Amount of Brood Produced Just Before and During the White-honey Flow.

BY E. D. TOWNSEND.

THE CHAPMAN PLAN.

For preventing swarming and for increasing the amount of brood produced previous to and during the fore part of the white-honey flow, Mr. S. D. Chapman, of Mancelona, Michigan, has a system of his own. He uses eight-frame hives, and the system is about as follows: At the approach of the warm period, which is usually near May 20, in this locality, he shakes the bees from two frames of brood, placing these two brood-frames without the bees in an upper story, taking out two empty combs from the upper story to replace those just removed from the lower story. He now puts a queen-excluder on the first story and the second story over it. This gives the queen in the lower story two extra combs to use for breeding purposes; and if there is young brood in the two combs placed in the upper story, this extra space in the two combs amounts to considerable. In a week or two, two more frames of brood are lifted up into *another* or third upper story, making a three-story hive. This method of lifting brood from the brood-nest into upper stories is continued until it is desirable to curtail brood production on account of the bees not maturing in time to be honey-gatherers.

During 1906 Mr. Chapman lifted brood according to this plan in three-fourths of an out-yard, when it turned cold and a strong northwest wind came up. On the colonies in the remaining fourth of the yard he put on the upper stories, but placed in them no brood. These last colonies were as good as the average of the yard. Shortly after the beginning of the raspberry flow he found that those colonies in the three-fourths of the yard, where brood had been placed in the upper stories, had from fifteen to twenty pounds of honey to their credit, and this gain remained throughout the season.

By following this plan, whole yards of bees have been worked for extracted honey through the whole season, without a single swarm issuing. It can be seen that powerful colonies need more room during the period just before and during the fore part of the white-honey flow than is provided in the ordinary hive in use to-day, and the above plan shows at least one method that may be employed with regular hives to provide this extra room at a time when it is necessary. Of course, when this time is past, the hive is brought back again to its normal size.

In the fall of the year 1906, during the early part of the buckwheat flow, our Pine Lake yard of 100 colonies was left without upper stories until the hives were crammed full of this early buckwheat honey for winter stores. At this time some of the most advanced colonies built comb and stored honey on the outside of the hives, and some of them must have had as much as 35 pounds of honey in the hive when they went into winter quarters. This was more honey than we were in the habit of leaving, and was even more than a ten-frame hive could hold and still leave room for the colony to breed up in the spring. The consequences were that, when the upper stories were given in May, 1907, before the honey season opened, these bees in the Pine Lake yard carried a few pounds of this buckwheat honey in the brood-nest into the upper story to make room for the queen below, with the result that, when the honey was extracted, it was amber in color and had to be sold for one cent a pound less than the rest, which contained no dark honey. This is the only case of the kind that has come to my notice, and even this would not have happened under normal circumstances.

When I first began to produce extracted honey the plan then in vogue was to lift a frame of brood into the upper story to start the bees to work there immediately. While this was successful so far as getting the bees to work in the supers was concerned, yet it was a noticeable fact that the honey produced by this plan was never quite as good in color as when no brood was lifted above. I soon learned that it is not necessary to lift brood above to get the bees to working in the supers, drawn combs being found sufficient. Now, in lifting this frame of brood into the upper story there was always more or less honey from the previous season lifted with it, which honey was often gathered from buckwheat. This brought about the same result as that outlined above, and the off grade of honey being not to my liking the system was abandoned. This is the worst feature about the Chapman system, for the old honey that is likely to be lifted up with the brood causes all the honey to be of a somewhat darker color and perhaps of a poorer quality.

THE COVEYOU PLAN.

Mr. E. E. Coveyou, of Petoskey, Michigan, has a very good plan for handling his bees during the fore part of the honey-flow. He uses ten-frame hives, and before the honey-flow he gives the colonies another story of combs without putting an excluder between. The cells of these combs should be of the worker size, for the queen is allowed full sway through this story until the colony needs a first one. At the time this third story is given, the queen is placed below in the first story, a queen-excluder is put on, and then the third story of empty combs put over it. Finally, on top of all, the second story partly full of honey and brood is added. This plan has the advantage of giving the colony an abundance of comb room and also an unlimited amount of breeding-space for the queen during the critical swarming period previous to the hon-

ey-flow. This is one of the best systems I have heard of to be used for this purpose in connection with the queen-excluder, for, aside from the advantage gained by allowing the queen unlimited breeding-room during the early part of the season, all of the advantages of the excluder are secured in extracting-time, for the brood lifted above with the second story will all be hatched and the combs filled with honey long before extracting-time, for Mr. Coveyou does not extract until late in August—perhaps 30 days after the close of the raspberry flow.

Before putting on any upper stories Mr. Coveyou clips his queens, for he works three yards practically alone with the exception of extra help made use of at extracting-time, or when some extra work is to be done. By having his queens clipped, and by being with the bees every day during the swarming or honey season, he can hive any swarms that may issue. It is obvious that, if the queens had not been clipped, the swarms would have gone to the woods and been lost. If a swarm should issue when he is working at some other yard, and returns to the hive, he is very likely to reach this yard by the next day; and when they come out again, as they almost assuredly will, he can hive them.

PUTTING ON EXTRA SUPERS.

Knowing by experience that bees will enter upper stories without any hesitancy when placed on top of the hive or on top of any story that may be already on the hive, and as our extracting is not done until after the white-honey season is over, we have no lifting of full stories except at extracting-time. We put on the third story, when the second one is about two-thirds full, or at least before all the empty comb-room is used. However, no set rule can be given as to the proper time for putting on extra supers, as there is a difference in the colonies in this respect. Some bees will work in a few combs and begin to cap those started first, while those combs at the outside of the super will not be in use at all. In such a case it would be folly to put on another super as long as this condition continues. Other colonies will fill every available cell with honey before commencing to draw out the combs or to cap the cells. Such a colony will need more extra comb-room than the one first mentioned, for in the first case the bees seem to be more adapted to working wax and drawing out combs. It is well to humor these dispositions, and not compel the bees mentioned in the last case to draw out the combs to the full capacity of the space allowed. They should, instead, be given additional comb-room as they are able to use it, and they will store much more honey than if compelled against their will to draw out cells to the full depth at once.

At extracting-time, if one wishes to make two grades of his extracted honey all of the partly filled and unsealed combs will be in the top stories if the plan just outlined is followed, and these can then be taken off and extracted by themselves. I believe this to be the ideal way, for the first-given supers are filled out more fully and capped more evenly than if they were lifted up and the empty one placed beneath them next to the brood-chamber. Then with this latter plan of lifting the full supers up and putting the empty supers next to the hive one is likely to give additional room faster than the bees really need it, with the result that the honey is capped over when the combs are thin, and even when some of the outside combs may not be entirely finished.

Putting empty stories on top is probably the only practical way to manage when a queen excluder is not used between the hive and the supers. If the extra supers are added intelligently when the season is near the end, by giving the colony only what storage room it will need, the queen will thus be crowded down into the hive below, leaving the supers nearly free from brood. In order to follow this method one should bear in mind that it is part of the system, in that the amount of brood in the upper story is to be curtailed toward the close of the season, as explained, and then the honey left on the hive a week or two after the close of the season, to allow it to cure thoroughly. Incidentally, the brood that may be left in the upper stories has thus hatched out before extracting.

The old orthodox plan of placing the empty super above the queen-excluder and under the partly filled one is still practiced by the majority of Michigan bee-keepers; and when the first one is about two-thirds full it is lifted up and an empty one placed beneath. This plan is continued clear through the season, the advantage claimed for this system of extra work being that, by lifting up the full stories and placing the empty ones next to the brood-chamber, the bees are stimulated to greater activity by this dividing of the hive when placing the empty combs next to the brood-chamber. Now, while I admit that it may be advisable to put an empty *comb-honey* super next to the brood-chamber, after a long experience I fail to see where the advantage is in the production of *extracted* honey, and where there is any gain in lifting up heavy upper stories during the honey season, especially when the extracting is all done at one time.

THE USE OF AN EXCLUDER TO PREVENT BROOD IN THE SUPERS, AND HOW BY THEM A WHITER HONEY IS SECURED.

Before leaving this subject I would say that, if one does much extracting during the honey-flow, or in the case of a beginner who has had but little experience, I would advise the use of an excluder, for there must be no unsealed brood in the extracting-combs or the honey obtained will not be of good quality. The very sight of these young grubs floating on top of the honey would be enough to condemn the plan of trying to manage without an excluder. If a visitor should happen to come in, those grubs would, of course, be called worms, and it would not help the sale if it should get out that the honey is "wormy." Then there is the food provided for the larvæ, some of which is thrown out with the honey, and this surely makes the honey of a poorer quality. My advice, therefore, is to use an excluder under such circumstances until you learn a better way.

Remus, Mich.

[Since it takes considerable skill to produce extracted honey without excluders, any one who has not worked out a successful system for keeping the queens down had better use the excluders to be on the safe side. It is not often that a queen gives much trouble by going into comb-honey supers.—Ed.]

## SOME QUESTIONS I AM ASKED.

### Do Weak Colonies have Good Queens? When to Requeen; Attitude of Farmers toward Bees.

BY E. W. ALEXANDER.

Mr. D. T. Gaster, of Randleman, N. C., wishes me to answer through GLEANINGS the following question: "After weak colonies are built up in the spring, according to your plan, do they usually do as well as other colonies, or should their queens be superseded?"

In answer I will say that I have never had occasion to supersede them oftener than other queens. With us all queens, when two years old, are superseded unless it should be a very choice one. We usually supersede queens for one of two reasons—either on account of their arriving at the age limit, or when we buy bees, as we sometimes do, they have queens of all ages and colors; then we supersede them as soon as possible, and in their place introduce good well-bred Italian queens.

I am often asked if it is not as well or better to buy our queens in the fall, at a reduced price, than to buy them in early summer. That depends wholly on the condition our colonies are in. If the old queen is failing to keep her hive well filled with brood without any apparent cause, then we supersede her in early summer; for if she is kept until fall the colony will have but little brood, will be weak in bees, and the young queen we give them will start so little brood that the chances are the colony will be dead in the spring, or so weak in bees that it will be almost worthless. But if the queens we wish to supersede are in full strong colonies, with their hives well filled with brood, then to buy queens in the fall for these colonies is all right; and if the new queen does not start much brood she will still have a good colony to winter in.

These are very important points that should never be overlooked in superseding our queens. I want a queen to occupy the hive she is to winter in at least 40 days before the breeding season closes. This gives her time to become acquainted with the colony, and fill the brood-nest once or twice with brood. If we all look to this part of our business as we should we shall have fewer weak colonies in the spring, and in the end we shall have more surplus, and secure it with much less labor.

Another question I am frequently asked is, "What is the opinion of the farmers in your locality in regard to the effect of your bees working on their buckwheat-fields?"

Some 25 years ago, when we came to Delanson, it was almost the universal opinion that our bees would injure their buckwheat so as to make the crop almost worthless, but the farmers soon changed their ideas on the subject. The buckwheat here is all thrashed by men who have thrashing-machines, and go from farm to farm thrashing the grain for a stated price per bushel. These men soon noticed that, when they came within three or three and a half miles of our apiaries the yield of grain was much better than outside that circle; in fact, it yielded sometimes nearly twice the amount per acre. This was a surprise to some farmers. Their orchards also gave them much more fruit. The change of opinion among them has been so complete that they are now anxious to have our bees do well.

I sometimes wonder if there is any other business that has had to go through the mire of ignorance and superstition equal to bee-keeping.

Still another question I am often asked is, "Will the greater part of the honey in the future be produced by the specialist, or by men who have other lines of business to follow in connection with bee-keeping?"

In order to give this question any thing like a correct answer we must not only go back and review the bee-keeping of the past, but we must look upon it in the future as being subject to the same natural laws and conditions as all other lines of business. For some time we have seen a continual concentration of capital in every line of business. The men who have a thorough knowledge of their business, and an unlimited amount of capital, are fast driving the less fortunate out of business, and I can not see how bee-keeping can be an exception.

When I was a boy a large part of our farmers kept a few colonies; but now we seldom see any bees through the country except in large apiaries. And the same change will continue to go on until there will be comparatively few men engaged in the business, and these few will be located in the exceptionally good locations, keeping their thousands of colonies, and having the best of every thing connected with bee-keeping that money can buy; and they will sell their surplus at wholesale to reliable parties, giving them three or four months' time if they wish, which often makes quite a difference in the price favoring the producer. There are many young men now starting in the business who will in time drop out; but some will continue, and they are the ones who will be the honey-producers of the future. They will first work for men having had a long experience until they have a practical knowledge of bee-keeping. Here, among other things, they will learn the value and necessity of a good location. To these they will naturally go, where, with their practical knowledge of the business, they can produce honey at half the cost that the inexperienced man can in an ordinary location.

Delanson, N. Y.

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### A HALF-INCH STARTER AT TOPS AND BOTTOMS OF SECTIONS.

Dr. Miller says the bottom starter is his baby. Yes, and a robust one it is too. In his diagnosis of Mr. Pryal's trouble he says in substance, "I am of the opinion that the plan will work as well in California as in Illinois; also that the space between the two starters in this case caused the trouble, and with a space of 1½ inches or so between the starters the bees would lengthen each starter, and, when high enough, why should the lower one not lean over?"

I feel a little timid about clashing with Dr. M.

I will do it this way: If they will topple over with a space of 1½ inches, what will they do with a three-inch space? I am not a convert to the use of full sheets in seetions, and use a half-inch starter, top and bottom. I have used many thousands this way, and have never detected any tipsy freaks in the lower starters. In a cool time the bees will invariably begin at the bottom, and in the T super they start earlier than in one with slats. I think they will fill the T super earlier than the others. The T super is warmer. In building up from the bottom the bees start with an extremely broad base, and usually are the full width of the section, or 1½ inches thick when not half way up. They make some drone comb with a perfect union wherever the two parts meet. This building from befow, in all cases that I have seen, is caused by lack of heat in the upper part of the super, while the sections or frames are warm close to the cluster. Give me two starters and T supers. I could give some fine samples of up-building.

Corona, Cal. H. M. JAMESON.

[We would inquire whether this building of the bottom starter first is not unusual. Is it true that the T super is warmer than the other styles? We can see no reson why it should be. It does, however, permit the sections to stand closer to the brood-nest, and this may account for the bees favoring the bottom starter.—ED.]

### TESTING PURITY OF BEESWAX.

While this pure-food law discussion is on in GLEANINGS as regards buying honey and not knowing whether it is pure or not, how about beeswax? I buy more or less each year, and have read all I can find in GLEANINGS, and will say I believe I can tell adulterated honey before I could beeswax. And after I have bought it and remolded it, how can I come back on the man of whom I have purchased it? He would say, "That's not the wax I sold you." I don't know that I have ever had any impure wax; but there is no telling when I shall get it. S. A. PALMER.

Liberty Center, O.

[There ought to be no trouble if you keep a small sample of every lot of wax you buy, as we do. If you ever receive any complaints about adulteration, have these samples analyzed; and if you find one or more of them adulterated, hold these parties who sent them responsible, which you can do under the national law. In buying wax, look out for grease, as that is the most common adulterant. Avoid the purchase of cakes of uniform color and size, and submit all samples that do not show the proper fracture or break test to the alcohol and water test. The specific gravity of the mixture is made just dense enough to allow a sample of pure beeswax to sink. Any wax containing paraffine, ceresine, or grease, will rise to the surface.—ED.]

### HONEY AND SUGAR FROM SUGAR-MILLS; HOW SHALL IT BE LABELED?

Since the pure-food law has gone into effect I don't quite understand the ruling on labeling honey. The honey I sell (which is a very small quantity) is sold just as it is extracted from the hives. The bees are never fed, but there are several sugar-houses within a few miles of my bees. How should my honey be labeled so as not to cause me any trouble with the pure-food law?

New Iberia, La. R. SONNEMANN.

[Under the circumstances we would consider it advisable for you to submit several samples of your honey to the United States Department of Agriculture, Bureau of Chemistry, with an explanation of the conditions surrounding you. It may be that your bees do not gather any of this sweet; or it is possible that they appropriate so little of it that it would not show in an analytical test. If the government chemist advises you that the honey does not come up to the United States standard you will have to label it for just what it is—honey flavored with New Orleans molasses. Such honey ought to have a good market with the large baking establishments. If you sell it, sell it for just what it is; and we think they will take it off your hands at a fair price. It ought to make first-class cakes and cookies.—ED.]

### A GOOD HONEY-FLOW ON THE ISLAND.

Our new Italians seem to be good workers. To-day, April 20, we extracted 100 lbs. from our island apiary; considerable from two and three frame nuclei. Even the twin nuclei have some combs full. It came from saw palmetto.

Osprey, Fla. I. T. SHUMARD.

[Since the above was put in type we have received the following:]

*Mr. Root:*—We have extracted 130 gallons of honey this week. From your little friend

Osprey, Fla., April 24. CLARA SHUMARD.

### MORE ABOUT THE HONEY-FLOW IN FLORIDA.

*Mr. Root:*—All your chickens are doing finely. Their appetites are good. Eggs, 20 cts. We are having a big honey-flow. My colony on scales is averaging 8 or 9 lbs. a day—44¼ lbs. in five days. I am a busy man now.

Bradentown, Fla., Apr. 27. E. B. ROOD.

### SWEET CLOVER.

I want to say to you that I am a lover of sweet clover. I am interested in it, not only for bees but for hay and for stock of all kinds. It is better for milk and butter than any thing else I can find. My wife says it is better than all other clovers. G. W. MOURN.

Burrton, Kansas.

### A FEW BEE-KEEPERS WHO STILL SULPHUR-PIT THEIR BEES.

Although the time has come when hundreds have found bee-keeping profitable, yet I am sorry to say there are quite a number still living in this beautiful State of Oregon who subject their bees to the sulphur-pit. E. J. JOHNSON.

Hillsboro, Oregon.

### SWARM TRAVELS 80 MILES.

I notice lately some inquiry in regard to the distance swarms travel. I remember seeing in GLEANINGS some twenty years ago a report of a swarm being traced in a desert in Colorado or Arizona, nearly 80 miles. They rested two nights and went on the next day.

New Hampton, N. Y. E. D. HOWELL.

# OUR HOMES

BY A. I. ROOT

Jesus said unto her, I am the resurrection and the life: he that believeth in me, though he were dead, yet shall he live. And whosoever liveth and believeth in me shall never die. Believest thou this?—JOHN 11:25, 26.

I presume, friends, you are all more or less familiar with that wonderful 11th chapter of John, in regard to the death and raising to life of Lazarus. Many of you, like myself, are getting along in years. The friends of our youth are dropping away on the right and left all around us; and, as one after another is taken away, a sort of feeling of loneliness comes over us. Only a few of us get to be threescore and ten; and, as we approach that period, sooner or later we take a sober thought—a thought that we do not have in our younger years—in regard to this matter of life and death, especially *death*. What is it? I have spoken several times of the sudden calling-away of those near and dear to me. Two have recently gone out of our office; and during the past winter, while I was absent in Florida, first a brother-in-law and then his wife, my youngest sister. While my mother lived it was the habit of my life to pay her a visit every Sunday afternoon when it was possible; and as she lived with this youngest sister I was sure to see her, and have a talk with her at least once a week. After mother's death I somehow kept up the habit of calling on that sister and her husband Sunday afternoon. I can not remember a time in my life when that sister failed to give me a genial smile and a kind welcome. As she had some pretty strong opinions and convictions of her own, I fear that that smile was not always given to everybody; but when I came around, expectedly or unexpectedly, I always found it.

While in Florida we were informed that "Mattie," as we called her, was very sick with pneumonia. One day while in the postoffice I received a letter telling of her sudden and unexpected death. I put the letter in my pocket, and walked a mile to my home; but some way my intellect seemed dull or benumbed; I could not realize that Mattie *was* really gone from this world. When I came into the house and told Mrs. Root what the letter contained, she burst out crying; but I did not shed a tear. I felt troubled about it; but some way I could not take in or realize that the letter told the truth. I kept thinking that it was a mistake or misunderstanding somewhere; in fact, I took up a daily paper in an absent way and began looking it over. Pretty soon I thought I would go out and take a look at the chickens and see if they were all right. I had got as far as the steps that go down into the woodshed back of the house. I was half way down before my mind seemed to take in fully that this youngest sister was really *dead* and *gone*. She was considered the healthiest one of the whole family of seven children. She has been sick scarcely a day in her life. When a full comprehension of what had happened came over me I dropped on one of the middle steps of the stairs and began to cry. Yes, I cried like a child, in a way I had not done for years past; and that cry did me good. I think my little prayer, "Lord, help," was uttered (at least mentally) a good many times; and I also prayed, as I have been doing so much lately, that I might be able to take in and learn the lessons the dear Savior is constantly striving to teach us.

Well, this event, and the further knowledge that others had died while I was absent from my northern home, has turned my attention to the text I have chosen to-day. The text embodies that wonderful promise—perhaps the most wonderful and difficult of comprehension of any among the precious promises the Bible contains. Let us go over the circumstances a little.

Martha, the housekeeper, as you will remember, as soon as she heard that Jesus was coming, went out to meet him while Mary remained in the house. Martha's first greeting was, "Lord, if thou hadst been here my brother had not died." Please notice that Mary uses the same words when she met him later on. They could not understand how it was that, when they had sent word to him four days before, he had so long neglected or delayed to come to the rescue of that brother whom they loved. Martha had faith, we know, even if she was such a diligent housekeeper, for she says, "I know that even now whatsoever thou wilt ask of God, God will give it thee." Does not this indicate that she had a sort of glimmering faith that he probably *had* power to raise even the dead? and did she know of any case in which he had raised the dead before this time? When Jesus told her that Lazarus should rise again, she replied, "Yes, I know that he will rise in the resurrection at the last day." We gather from this that the Jewish people had a belief or faith in the judgment day. Although the Old Testament does not tell us much about it, they expected and looked forward to a future life. Then we come to the wonderful words of our text—"I am the resurrection and the life." This is the part of the promise I have been trying, sometimes almost in vain, to grasp and comprehend and *believe*. This resurrection that all mankind has looked forward to, more or less, is not only under the direction and control of the Son of God, but he *is* the resurrection and the life. And then comes the rest of our text: "He that believeth in me, though he were dead, yet shall he live."

This last does not seem to require so much faith, because it might be only a promise that he should live again in the judgment day; but the 26th verse says, "Whoso liveth and believeth in me shall *never die*," and that is the most astounding and wonderful of all. I am not a theologian. Very likely I have not gotten things right; but the great truths we are searching for and trying to grasp, I am sure, do not depend very much on whether we all think alike or even have things *right* or not. As we come to mature years we have a sort of judgment and wisdom given us that does not come to us in our younger days. I do not think the younger people will quarrel with me about this. Old age has taught us lessons. Watching the great wide world, especially in a prayerful attitude, has taught us lessons and given us wisdom. A man who has had experience in things of this world can give a pretty fair judgment as to what is best to be done in a case of emergency. Now for that wonderful promise. I do not understand, and I think that very few will understand, that the dear Savior meant

to say that if our faith is sufficient we shall never die a physical death. We must all die of old age sooner or later; but the inspiring promise in these last words as they come to me is that this physical death shall be *bridged over*, as it were, by faith.

And now we come to something that is very hard to comprehend. Perhaps it is not God's will that we ever *shall* comprehend it. Some Christians die apparently without pain. Many of them, we are told, die rejoicing. Of a few, perhaps, it may be said their dying hours were expressed in that other wonderful passage where Paul asks, "O death, where is thy sting? O grave, where is thy victory?" Those whose dying hours are described in the above may fairly be said to "never die."

My good father had no such faith as did my mother. He was doubting and stumbling all his life. Again and again she by her strong faith, that never wavered, lifted him up and planted his feet on solid ground. Well, there was no suffering in his dying hours. I held his hand to the last, and there was no struggle or gasping for breath. His last words were quiet and tranquil, and his face had a peaceful and happy look, long to be remembered by those who saw it; and yet that good mother, whose life was a beacon star to the father and to all of us seven children, died after much prolonged suffering. I was absent when she neared death, but reached home in time to have her express her thanks that I could be near her in her last hours. I have seen other deaths, where it was like an infant going to sleep, and still others where there was great and prolonged suffering. Now, I firmly believe that whosoever liveth and believeth, and accepts the Lord Jesus Christ as the Son of God, shall never die spiritually; but I can not think that Jesus meant we should all be spared the pains and agony of death. I do believe that, with the progress we are making in the way of prevention if not cure of painful diseases, much of the suffering that comes with sickness and death will be done away with; and a faith in God, and an earnest desire to learn these things we are slowly learning, will do much to avert sickness and pain. I do believe in prayer. Even though I can not accept Christian Science and all that is said and written about "faith cure," I can say with a clear conscience that, in my prayers for help amid all kinds of suffering, I can scarcely recall a time when help was not given sooner or later.

Yesterday morning a stranger came into our office, wishing to renew his subscription to GLEANINGS. They sent him over to the desk where subscriptions are received. I overheard him saying something about A. I. Root; but as I had some complicated matter in my fingers at that time I delayed going over to where he stood; and I do not know but I was tempted to think somebody else could wait on him as well as not. Pretty soon he came my way a little hesitatingly. When he told me that he knew me personally more than forty years ago, and had been reading our journal for years, I asked him if he would not like to look over our establishment. I thought, however, he did not seem to be as much interested as many are with the machinery, the buildings, and the busy workmen. Finally he said something like this:

"Mr. Root, I have long wanted to see you and take you by the hand; and I wanted to try to tell you how your little prayer, 'Lord, help,' that you gave us years ago, has helped me through many troubles and disappointments."

Then he gave me a brief account of some of them. Well, I want to confess to you now that sometimes, and especially of late, I get into trouble, and perhaps suffer real pain for quite a good while until finally I say to myself, "Why, old fellow, you have not even once in this case thought to bring into play that little prayer you recommended so much to everybody else." Then comes the prayer, 'Lord, help,' and in a little time I have surmounted the difficulty and go on my way rejoicing. It does not seem to matter whether it is an automobile that I can not manage, or an outbaeak of my old temper that prompts me to think of getting up and fighting somebody in my old age; that weapon, "Lord, help," fits all cases and emergencies.

I am told that my brother-in-law, when near death and suffering great physical pain, said over and over to himself, "Jesus, help!" Although he was not a praying man (that is, so far as we know during a busy life that took him nearly over all the world), I was wondering if it were not possible that he too, in his dying agonies, remembered the little prayer that we have been talking about. As Jesus pardoned the thief on the cross when he uttered that brief prayer indicating a penitent spirit at the last moment, we can be sure that in this other prayer where Jesus' help was implored, his help was given.

Now, friends, God knows how we shall die. A dear friend of mine, when very near death, asked one of the relatives to pray that his passage through the dark valley might be an easy one. In this case the prayer was seemingly granted. Now, while I can not think of finding any fault with such a prayer, I have a sort of feeling that we who are strong men — not only physically strong in body, but perhaps strong in faith — should be ready and willing to bear *our share* of what naturally comes in the way of the pangs of death. The dear Savior said in his dying agony, "My God, my God, why hast *thou* forsaken me?" I think we may safely gather from this that not only did he suffer bodily torture, but he was, through his excruciating agony, perhaps tempted to feel that the great Father who had stood by him through every incident of his life here on earth had finally, at the last moment, turned his face away from him. If *he* suffered, should not we, who have suffered here on earth for his sake, feel ready and willing to follow him and suffer the agonies as he did — that is, if somebody *has* to suffer? A follower of the Lord Jesus Christ should be *brave* — yes, he should be a brave *soldier*. God does not *always* take the obstacles *out* of our pathway; sometimes it would seem he prefers to lift us over them, providing always *we* do a good job in the way of climbing over them ourselves. And when I come to die I hope my prayer may be, "Lord, help; if it be consistent with thy holy will that I may be spared these bodily pains, well and good; if not, give me, I pray thee, grace to bear them. And give me of thy Holy Spirit that I may be willing to bear in a manly way the sufferings that our dear Savior bore, and that are common to humanity in gen-

eral." And then I hope I may have strength of *body*, *mind*, and *spirit* to say, as did the Savior, "Into thy hands I commend my spirit."

After different ones who were near and dear to us have been called away Mrs. Root has frequently asked the question that has been so much in my own mind—"Are these dear friends permitted to know and see what is going on here in this world after they have left us?" The Bible does not tell us much about it. At the transfiguration on the mount, Moses and Elias came back to earth, and we are told they gave the dear Savior encouragement for his coming trial and suffering. They, at least, evidently knew what was transpiring here. God has, evidently, for some good purpose, kept us in the dark in regard to this matter.* Jesus once said, "In heaven they neither marry nor are given in marriage;" but, if I am correct, this is almost as much information as he gave us at any time in regard to the future.

Now, I have several times in the past alluded to this wonderful God-given *instinct*, both in man and in the animal kingdom. The chickens have a language that they understand, and which the mother understands, when they are only a few hours old. Instinct prompts them what to do in case of emergency, and *how* to do what is best for them—at least to a certain extent. Instinct also prompts mankind, perhaps not exactly as it does the chickens, but in many ways it is a *wonderful* controlling and directing power. As I grow older this same instinct seems to be still with me, prompting me as it did when a child, telling me how to take care of my God-given body, and, to a certain extent, telling me of the future, what God expects of us, and what we have a right to expect of him. Great writers have frequently rebuked skepticism and infidelity by calling attention to the fact that it would be unreasonable, and not to be thought of for a moment, that God would give this education and drill that we get here in this world, or might get, and then snuff us out with annihilation. I think every intelligent human being, if he will but think a moment, will agree to this. In speaking of suicide, some say that that ends the matter, and some religious denominations, if I am correct, declare that annihilation is the punishment of the wicked. Let me suggest right here that no doctrine in the world would so much encourage the suicide mania, which is getting to be so prevalent, as a doctrine like this, unless it is Universalism. God forbid that any human being may rush to the conclusion that he can cancel all his debts, and obtain forgiveness for all his old sin, by destroying the life that God gave, and which only God can give. Of course, the Bible plainly teaches us of a future life; but does not instinct also in the way I have pointed, and other ways, offer this same future to all of us?

Three near and dear friends have recently and suddenly been called from this world, and the call came so suddenly that not one of these had time, or it would almost seem so, to bid us good by. It seemed hard, when I came to think of it, and Mrs. Root again expressed my feelings when she said something like this:

"Did they really know they were so near death? and if so, why was there not some sort of good by, or something to make us feel easier and better about it?" And then she added, "Oh, if it were only possible for them to give us just the least bit of message, saying they are at peace, and still remember us all in the loving way they did when they were here on earth!"

Her words astonished me somewhat, because I had been having the same thoughts and feelings. In fact, I had prayed that God might give us light in the matter if it were consistent with his holy will.

I now wish to relate an experience that has given me comfort, and I should like to know if it has been shared by others who have lost dear friends. I spoke in one of these Home papers of a good woman who had been many years in our employ—a devoted Christian woman. She and I had many talks about death. I had promised to call on her the day before she died; but I stupidly forgot it, not knowing, of course, she was anywhere near death. I deeply regretted it, and for many days after that she was much on my mind. Finally I noticed at times, when I was busy at something else, a strange feeling came over me causing me to feel that she was near; in fact, at such times I almost seemed to feel her presence and see her face. A heavenly smile lighted it up, and that glimpse told me as well as any thing but words could tell, that she remembered lovingly all of her old friends and comrades through life. After Mrs. Root's sister passed away I had a similar experience. Something that I can not describe seemed to tell me that she was at peace, and happy, and had in no way forgotten the dear friends whom she had left so abruptly, even though she *had* gone away so suddenly that she did not have an opportunity to bid them good by for ever—no, *not* for ever; that is not the word. It should be "good by until we join the happy throng on the other shore."

I told you how hard it was for me to realize that my youngest sister had really gone. Well, some days afterward came that same longing for some sort of recognition showing that she remembered us, and when busy at work out in the field or with my poultry, when I had not been thinking of her at all, memory or something else would *startle* me by a vision of her old cordial smile and hand-pressure—a sort of assurance, as it were, that she knew how we missed her, and perhaps knew our very thoughts.

Now, these thrills that come to me may be only a memory of the dead; but I can not help taking it as an answer to my little prayer, and that God in his great mercy and loving kindness has permitted me to have just a *little* glimpse of the unseen world to strengthen my faith.

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* In the 16th chapter of Luke, in the parable, we are told the rich man begged to have Lazarus bring him just a drop of water to cool his feverish tongue. Abraham refused to grant the request, giving two reasons for this refusal. First, "between us and you there is a great gulf fixed so that they which would pass from hence to you can not; neither can they pass to us that would come from thence." Then this rich man begged to send a message of warning to his five brethren; but father Abraham says *no* again, and gives another reason—"If they hear not Moses and the prophets, neither will they be persuaded though one rose from the dead."

Now, these two passages may not be intended to teach us that there shall be no communication between the departed friends and this world; but does it not look somewhat that way? There certainly *is* a "great gulf," as told us in the parable; and I am inclined to think, too, that, even could those come back who have died in their sins, their warning would be but little heeded. God knows we have lessons enough right before us in regard to the consequences and penalties to be paid here in this life to those who deliberately choose sin and crime.

It has been reported, as you may know, that somebody once asked Darwin if he believed that the Creator had ever given us any revelation from the future and spirit world, and he replied he was unable to find any such evidence satisfactory to himself. Some writers have claimed from this that he rejected the Bible and its teachings. I do not take it so. I have read over and over what he said, and I think he intended to convey the idea that, since the day of miracles, or aside from the revelation of the Scriptures, he could find no evidence of any reliable communication from the spirit world. I heartily agree with him in that. What I have just been telling you about has no reference to spiritualism. I do not believe I shall ever have any leaning in that direction; but again and again have devoted Christians told me that, after the death of one of the near and dear ones, God had sent the comforting influences of the Holy Spirit in a way that was just wonderful. My own good mother frequently referred to it after the death of my father. She said she almost felt his presence near her, and so perhaps I have *inherited* something of the same sort.

In the 16th chapter of John you will notice Jesus has much to say about sending the Comforter after his ascension. Now, can we not in closing find additional happiness and comfort in going over once more the words of our text?

"I am the resurrection and the life. He that believeth in me, though he were dead, yet shall he live; and whoso liveth and believeth in me shall never die. *Believest thou this?*"

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## CHICKENS FOR BOYS AND GIRLS, AND FOR ELDERLY MEN AND WOMEN, ESPECIALLY THOSE WHO LIVE IN CITIES AND TOWNS.

I take great pleasure, friends, in showing you a beautiful picture of one of Mr. Philo's houses for six hens, see p. 638. These fowls are a strain of White Orpingtons. They have been kept in these little houses indoors for five generations. They will not go out and run away, even if the door is left open, or at least they did not when I was there. This is the more remarkable because the house is only 3 feet wide, 6 long, and 4 high — 5 feet to the peak of the roof. Of course, the proprietor is not supposed to go inside of the house, as the lower story is only 2 feet high, and he might bump his head, although the chickens do not. But the houses are so arranged that he can easily reach every foot of space inside, keep it clean, get the eggs, pat the biddies on the back, give them a kind word, etc. The same building will answer for chickens of all ages.

Well, the first week or two such houses will accommodate 50 or 100 chicks very nicely. When they are too much crowded, just put half of them in a similar house, and so on. Friend Philo thinks one gets enough more eggs with only six laying hens in a house to save the cost of the extra house. If managed properly, one ought to get six eggs a day a good deal of the time; but if you had a house large enough to hold sixty, how long would you have to wait before you got sixty in a day?

The picture is so plain that it almost explains itself. There are doors to the lower story, both front and back. These doors can be held open with a hook so as to give shade when the fowls need it. Then the poultry-netting frame can be moved out so as to make a little yard both sides of the house. This is an advantage in giving them green food, for lettuce, oats, rape, or other vegetables may be planted in this ground for their special entertainment.

The front roof is in two parts so you can open one to get the eggs without opening the whole roof. The two frames, one covered with cloth and the other with poultry-netting, slide back out of the way. The cloth gives them air without two much of a draft; and it also shades them from the sun when too warm. It gives them more light than when the roof is left on. The gable in full view is also covered with cloth. In winter time an extra cloth tacked on a frame is put over this end, making a dead-air space, and still giving them an abundance of air. The lower part is all used for scratching-pens. The water and food are upstairs, as are the nests. While in Florida I found it quite tiresome to stoop down to the ground to gather the eggs, especially where they were hidden in the bushes or inside of a barrel or other like places. Now, with this arrangement you can get the eggs while standing up straight. The roosts for six hens and a rooster are placed over a light pan of galvanized iron. There is a handle to this pan so you can take it in one hand and lift out the droppings in the fraction of a minute. The bottom of the pan is kept covered with a little dry dust, or, better still, pulverized peat, or swamp muck, that will make the droppings all come off from the pan and leave it perfectly clean.

Now, these buildings need not be expensive. You will notice the front door where it is turned up is cheap half-inch lumber. This lumber is covered with a good quality of building-paper. The whole thing is so light that it can be easily moved along so as to give the fowls fresh ground once a week or oftener if you choose.

Now, then, friends, what girl or boy would not be captivated by such a handsome little poultry-house containing laying hens or chickens of different ages, or all together if you choose? When you live out in the country, where hens can run out without annoying the neighbors, I think you can keep a dozen or more in one of these little houses.

There are quite a few poultry-keepers nowadays who claim they get more eggs from fowls in confinement, where properly supplied with all their needs, than they do where the fowls run loose. I suspect, however, that a small yard for each little house will be better still.

But one thing should impress itself upon all who are keeping poultry. We who are followers of the Lord Jesus Christ should not keep fowls nor any thing else to the annoyance of our neighbors. Years ago my good old friend "Aunt Margaret" said in substance, "Mr. Root, if chickens make my neighbor to offend, I will keep no chickens while the world standeth." Then she promptly sold every last one, and kept no more. I really felt ashamed of myself, and was sorry I had complained, even if her poultry did get over on to our flagstone walks and annoy us. With the above little house, and fowls kept inside or in a secure little yard, there is no danger of their being troublesome to the neighbors or anybody else.

INCUBATION—SOMETHING YET TO BE DISCOVERED.

Just before I left Florida, one day when I was away from home Charley, our colored boy, found a nest out among the palmettos containing 16 eggs. As he knew we were going away soon he drove the hen off, covered up the nest, and carried the eggs to Mrs. Root. She broke one to see if they were fit for use; but finding they were about a week toward hatching she kept them until my return next day, and then suggested that I could boil them for the young chickens. I said, "Not so. We will put them back in the nest, and let these chickens hatch after we are gone."

"But, my dear husband, they certainly will not hatch, for they were on the bench in the workshop all night, and it was quite cold."

I told Charley to fix the nest as it was, and put them back; but the hen was too badly scared, and paid no attention to them. So they were out another night; but when I found a hen that wanted to sit, I gave her the 15 eggs. Mrs. Root thought I was crazy in thinking eggs would hatch after they had been out in the cold for two days and two nights. But I had read somewhere in a poultry journal that, after eggs had been incubated until the fertile ones could be sorted out, they could be sent by express short distances and still hatch. In this way you need not send off unfertile eggs at all, and have your customer go to the expense of sending back the bad ones to prove that they were no good. Mrs. Root laughed at my pains with some eggs that "everybody knew" could not possibly hatch chickens. Well, my neighbor, Mr. Rood, writes as follows under date of April 15:

"The hen hatched fourteen chickens, and they are all growing finely."

I suppose of course the mild weather of Florida favored the matter; but, if I remember correctly, one of the two nights when the eggs were out of the nest the temperature was somewhere between 40 and 50 in the morning. In view of this, is it so very important that the temperature be kept constantly at 103°? One of the poultry journals says if you let a sitting hen have the eggs for the first week almost any incubator will give a successful hatch. Who knows about it?

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ALFALFA FOR POULTRY, BEES, AND OTHER FARM STOCK.

I take great pleasure in presenting the following, taken from the *Ohio Farmer* for April 25:

Last year I selected a plot of rich garden soil, pulverized the soil as fine as for an onion-bed, then I made shallow furrows two feet apart, and sowed the alfalfa seed in them with the garden-seed drill the same way as onion seed, and about as thick; then I walked over the seed, firming the soil over them. In a week the seed had germinated, so that I could see the plants in the rows. I ran the wheel cultivator between them, removed all the weeds, and replanted vacancies. The wood ashes from the house were scattered between the rows, and the cultivation kept up all summer, and in the early winter the plot was top-dressed with fine manure. I obtained two cuttings the first year, and a second was left on the ground. This season, judging from other plots of alfalfa on my place, I shall cut four large crops. Thus I know from experience that alfalfa is the best food for the poultry, the cow, and the horse, that I ever used. When you have obtained all the milk or eggs you can with other grasses and grain, you can further increase the yield with alfalfa, and the cow will leave all other food for it; and hens that are confined in yards will eat cut alfalfa as readily as grain.

With all my animals, I can reduce the grain feed more than one-half with alfalfa. Here is the solution of the problem of making hens pay on the village lot, if there is a good piece of soil near by where alfalfa can be grown as I have described. I wish to be understood that one must learn to grow alfalfa, and how to handle it for feed. It never will be easy *to start* alfalfa on common soil; but give it the same care as the garden crop, and understand that its culture is the highest type of farming or gardening, and that it requires as much skill as to grow fancy strawberries. Study the plant and its needs, then do the work the right way, and there is no doubt about results.

I have a neighbor in the village where I live, who tells me he can show a balance sheet of $2 profit per hen for one year. His hens have plenty of grass. My friend living in the village of which I have spoken made a profit of only 60 cts. per hen last year. I told him about my experiments in the cultivation of alfalfa. He is going to try growing it in the same way. I believe it possible for him to make as good a showing as my neighbor, whose margin of profit is $2 per hen. W. H. Jenkins,

Delaware Co., N. Y.

Now, friends, the above is true—every word of it. Alfalfa is being grown successfully over almost all of the United States. I got a good strong stand on a little piece of ground in Florida by making the soil rich with cow-chips, as I have explained. Of course, it may not be suitable for *all* soils; but if you find you can grow a little patch of it in your garden you can extend the area and get a good field of it eventually. Please bear in mind that, where it is once well started, it is good for fifty years or more. It certainly is nearer a grain ration than any other clover or grass in the world. Sweet clover may come pretty close to it in value after the stock have once learned to eat it. I do not know about that, but I would urge every farmer or gardener to start a little patch in his garden at once—that is, if alfalfa is not already growing and succeeding in his region. It is the quickest seed to germinate, I think, I ever got hold of. The plants will be up and growing before you know it; and with a very rich and suitable soil, and plenty of water to start with, they will make about the most rapid growth of any plant I know of. Even if you have only a few chickens in town, you want a bed of alfalfa; and it will be just the time to start it when this gets before you. For years we thought alfalfa would not grow in Ohio; but as the people have learned how to handle it, it is now getting to be a success almost everywhere.

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ONE OF THE "STRAWS" WHICH SHOW WHICH WAY THE "WIND BLOWS."

*Dear Brother Root:*—"Missouri is going dry." The Anti-saloon League is bringing things to pass in this State. We have 76 counties out of 114 in the State; have closed nearly 300 saloons since the first of January. We are distributing 50,000 of the enclosed buttons; will have another 50,000 ready for delivery in July. Yours for the annihilation of the liquor traffic in the nation. U. G. Robinson, State Supt.

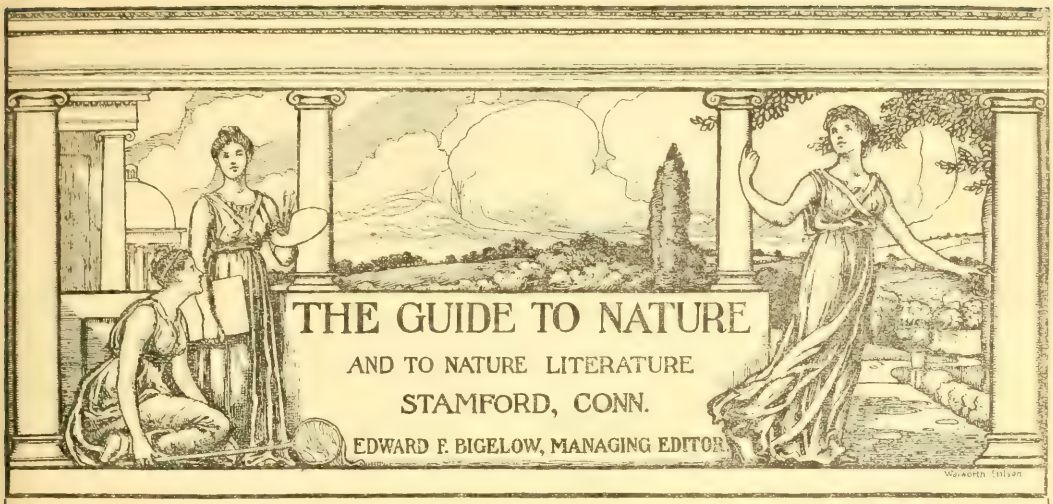
St. Louis, April 29.

Perhaps I should explain that the matter on the enamel button inclosed in the above letter reads "Missouri dry in 1910."

Here is another straw. Several Medina people have recently moved to New Mexico, and they have recently sent me a leaflet to let us know how they prosper. It reads as follows:

Artesia was the first town in New Mexico to abolish gambling by law, and on March 3, 1908, by a vote of more than two to one, the citizens banished the saloons. The first town in New Mexico to take such action. Moral: Come to Artesia. This tells you what kind of neighbors you will have.

By the way, friends, there is a big moral right here. Did you ever hear or did anybody ever hear of anybody else boasting that a town had *gone wet?* How would it seem to hear somebody say, or to see an advertisement (asking people to locate) reading as follows—"Our town has just voted wet *two to one*"?

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Even to the most enthusiastic of us who study and love nature, there come times when, after we have "wandered away and away with Nature," we can sympathize with what Longfellow said of Agassiz, that

. . . "the way seemed long
Or his heart began to fail."

It is at such times that "The Guide" will inspire to greater efforts and encourage every student by telling of the faithfulness, zeal, and success of others. We all need good cheer from fellow-workers. Much of our inspiration is, "Omne vivum ex vivo," which freely translated means, "We are inspired and cheered by a friend." "The Guide" will be a leading, enticing, cheering, encouraging friend to students and lovers of nature.

The manufacturers of a certain "talking machine" advertise extensively that it "saves theater money." The publishers of "The Guide to Nature" can excel that by at least one point, and may well advertise that it "saves theater desire"—makes the theater expense wholly uncalled for, and that, too, in the best way, not in substitute on a small scale, but an excelling on a larger and better point of view.

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You who find entertainment and interest in honey-bees need no further argument. You are of the right mental make-up to understand all I would say if I wrote volumes on nature as a recreation. All you need to do is to send $1.50 for a year, or 15c for a single copy.

EDWARD F. BIGELOW, Editor of "Guide to Nature,"
Stamford, Connecticut.

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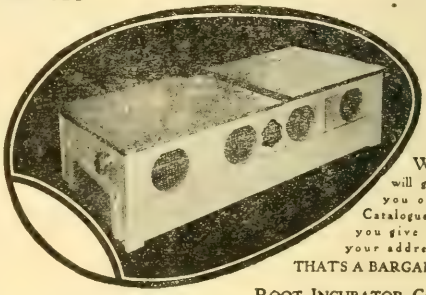

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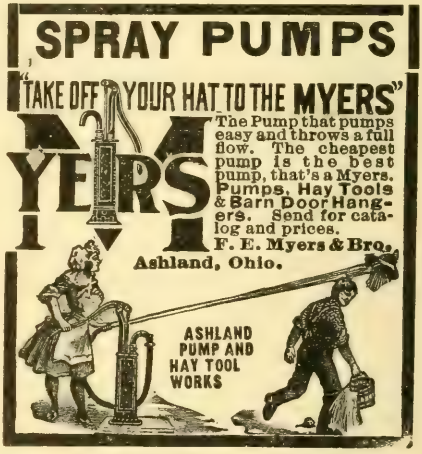


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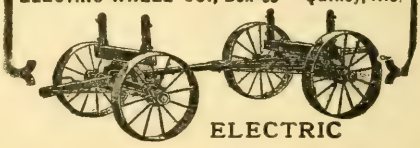
By every test, they are the best. More than one and a quarter millions sold. Spokes united to the hub. Can't work loose. A set of our wheels will make your old wagon new. Catalogue free.

**ELECTRIC WHEEL CO., Box 95 Quincy, Ills.**



ELECTRIC

H. C. Phelps

**Let Me Pay the Postage on My Big Free Buggy Book to You**

Just write me a postal. Let me pay the postage to you on my Big 1908 "Split Hickory" Vehicle Book. Shows over 125 styles of Vehicles and how you can save $25 to $40 by ordering direct from my factories. My

**"Split Hickory" Book Free**

—also shows how I make any Vehicle you want to-your-order.—Also full line of High-Grade Harness all at great saving prices. Address me personally—H. C. PHELPS, President, **The Ohio Carriage Mfg. Co., Station 293 Columbus, O.**

**30 Day Free Trial**

# A NEW HIVE-TOOL

Hitherto we have said very little about our new hive-tool, but after submitting it to some of the foremost bee-keepers of America for their candid opinion—for or against—the universal verdict is that it is a good thing; though it looks like a very simple tool it is very surprising how useful it is to an apiarist. The bent end, for example, is just right for severing Hoffman frames. A slight twist of the wrist does the business without angering the bees, and one's hand is so placed the bees do not see it. For scraping wax and propolis nothing could be finer, and it is better than a chisel, screwdriver, or putty-knife for opening hives. Any bee-keeper will be glad of one in his pocket ready for all occasions. It is made of the finest hardened steel nickel plated.

**Sample Testimonial:**

*Mr. Root:*—I have been using your nickel-steel hive-tool this spring, and am very much pleased with it. It is the best thing I have tried yet. I, with my helper, have been using tack-pullers heretofore; but this is better because so much stronger. It leaves nothing to be desired except that there should be a hole in it a little nearer the crooked end. I tried to get one drilled but had to give it up—too hard; so I fastened a strap around it to fasten to my pants button.

Oberlin, Ohio. CHALON FOWLS.

**Price 50 cents postpaid. Hive-tool, and Gleanings for a year, $1.25.**

**THE A. I. ROOT COMPANY, . . . . . MEDINA, OHIO.**

**The Young Man or Woman**

**who is a High-School Graduate**

contemplating the study of medicine will receive a catalog if inquiry be made of

**W. B. HINSDALE, M. D.,**

Dean of Homeopathic Dept. of University of Michigan

**ANN ARBOR, MICH.**

**PATENTS.**

Twenty-five Years' Practice.

**CHARLES J. WILLIAMSON,**

Second Nat'l Bank Bldg., Washington, D. C.

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

**Duroc Jersey, Tamworth, and Hampshire Swine a Specialty.**

Finely bred and eligible to registry. White Leghorn and Barred Rock eggs; fancy strains. Eggs, 30 for $1.50; $4.00 per 100. Narragansett turkey eggs, 12 for $3.00. Scotch Collie puppies. Also the best herd-books for recorded stock. Satisfaction guaranteed. Send for circular now. Address

**Jno. M. Wheeler, Winchester, Ky., Rt. 4.**

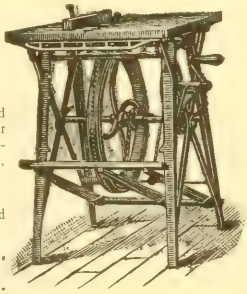
**Your Name Will Get $2 Eggs**

***For 50 Cents Per Sitting***

The White and Brown Leghorns are the greatest layers in the World. I keep 1000 of the celebrated Chamberlain laying strain on my Experimental Farm, and to increase the sale of my Perfect Chick Feed, I will send to any one who will send me their name so I can send them my Perfect Chick Feed Catalogue, 2 sittings of Single Comb Brown or White Leghorn Eggs for $1 for the 2 sittings. Only 2 sittings sold to one person. White or Barred Plymouth Rock Eggs $1 per sitting. This is a rare chance to get a start of extra fine stock. Send money and have your orders booked early as we can only fill about 1 order in 10 in season.

**W. F. CHAMBERLAIN,** *(The Perfect Chick Feed Man)*
KIRKWOOD, MO.

**BARNES' Hand and Foot Power MACHINERY**



This cut represents our combined circular saw, which is made for bee-keepers' use in the construction of their hives, sections, etc.

**Machines on Trial**

Send for illustrated catalog and prices. Address

**W. F. & JNO BARNES CO.,**
545 Ruby St.,
ROCKFORD, . ILLINOIS.

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLDG. CLEVELAND, OHIO.**

# THE BEE-KEEPERS'

# Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND

**AN IMMENSE STOCK OF HONEY-CANS**

(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

| | |
|---|---|
| 12-in. 4-row shipping-cases with 3-in. glass . . . | $17.00 per 100 |
| 9½-in. 4-row shipping-cases with 3-in. glass . . . | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass . . . | 9.35 per 100 |
| 6½-in. 3-row shipping-cases with 3-in. glass . . . | 9.80 per 100 |
| 7⅝-in. 3 row shipping-cases with 3-in. glass . . . | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 27 cts. cash; in trade, 30 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**The Great Word Contest.** More than a thousand persons entered our word contest; and as a result we have had to engage the services of an expert to determine the winners. We can not report in time for this issue, but hope to be able to announce them in the issue of June 1st—watch for it.

**UDO & MAX TOEPPERWEIN**

1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

# HIGHLAND FARM QUEENS

are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey. Highland Farm queens will produce them. We are now booking orders which will be filled in regular rotation, beginning May 15. You should get in line by placing your orders early, and avoid the rush of the busy season. Single queens, $1.00; 6, $5.00; 12, $9.00. Safe delivery and satisfaction guaranteed.

For further information send your address on a postal card to

**HIGHLAND BEE AND POULTRY FARM,** J. E. HAND, Proprietor, **BIRMINGHAM, ERIE CO., O.**

# NEW GOODS! BIG STOCK!

New Warehouse Root's Goods
Prompt Shipment Low Freight

EVERYTHING
FOR THE BEE-KEEPER AT
SAVANNAH, GA.

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
241 BULL ST. SAVANNAH, GA.

If You are Located in

# West Virginia or Ohio

or anywhere else, order ROOT'S GOODS from PEIRCE and save time and freight.

EDMUND W. PEIRCE,
136 W. Main St., Zanesville, O.

# ROOT'S BEE-SUPPLIES

AT SPRINGFIELD, MASS.
New Goods. Free Catalog. 'Phone.
F. R. DANIELS, 117 FLORENCE ST.

**Honey-cases for Sale.** Price 30 cts. per case. Two cans to the case. Both cans and cases in A-1 condition. For lots of 100 or more write us for price. **Michigan White-Clover Honey Co., Detroit, Mich.**

**For Sale.** A Carload of BEE-SUPPLIES, AND QUEENS.

Red-clover, Italian, and Caucasian Queens Ready Now.

SEND ME A BILL OF SUPPLIES NEEDED, AND I WILL GIVE YOU MY LOW PRICES.

*I can save you money.*

PRICES OF QUEENS: Untested, 85 cts. each; dozen, $8.50; tested, $1.00; dozen, $10.00; breeding queens, $2.50 to $5.00; nuclei, four-frame, with fine queen, $4.00.

SEND FOR CATALOG. GOODS GUARANTEED.

**G. ROUTZAHN, BIGLERVILLE, PA.**

# Imported Carniolans, Caucasians, Queens

and Hungarians (Banats), each bred in native land of respective race, $5.00 each. Now on hand ready for immediate delivery.

**Frank Benton, P.O. Box 17, Washington, D.C.**

## Root's Bee Supplies at Root's Prices.

ITALIAN BEES.

Full colonies, in Root's Dovetailed or Danz. hives, May, $8.00; June, $6.50; July, $5.00 per colony.

**D. C. Kauffman, 31 W. Phila. St., York, Pa.**

CHOICE

# QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3.00.
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

# ITALIAN Queens

and bees, and nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Our stock is northern-bred and hardy. We just visited our outyards (all wintered on summer stands), and not a colony is dead to date (March 18). Some hives have lost scarcely a bee, so it appears. BROTHER BEE-KEEPER, how do you like such stock for hardiness? A party up in Maine got 50 nuclei of us several years ago. We just received a letter from him. He is after more of our bees, because last season he got 2200 pounds of honey which sold for 22 cts. per pound. Our stock is well known throughout the United States. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Free circular and testimonials. Price of stock as below.

| Prices of Queens before July. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens . . . . . | $1 00 | $5 00 | $ 9 00 |
| Tested queens . . . . . | 1 50 | 8 00 | 15 00 |
| Select tested queens . . . | 2 00 | 10 00 | 18 00 |
| Breeders . . . . . | 4 00 | | |
| Golden five-band breeders . | 6 00 | | |
| Two-comb nuclei, no queen . | 2 50 | 14 00 | 25 00 |
| Three-comb nuclei, no queen | 3 50 | 20 00 | 35 00 |
| Full colonies on eight frames | 6 00 | 30 00 | |

ADD the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

## QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio

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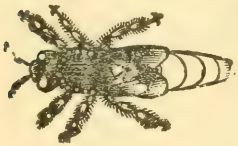
## ITALIAN QUEENS



Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen, $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J. L. FAJEN, . ALMA, MO.**

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## Queens from Southwest Florida

From very best stock, furnished by The A. I. Root Co.; reared on the island where A. I. Root was formerly located. Prompt shipments and correspondence solicited. I. T. SHUMARD, Osprey, Manatee Co., Fla.

---

## Queens FOR 1908.

Finest Goldens bred in America. Send for my latest circular and prices — "and be convinced."

**DANIEL WURTH, . PITKIN, ARK.**

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## GOLDEN ITALIAN QUEENS, $1

**Six for $5.**

Safe arrival and satisfaction guaranteed.
18 years' experience. Circular.

**J. B. CASE, Port Orange, Fla.**

---

**GOLDEN-ALL-OVER and RED-CLOVER**

## ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers. Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested . . . . . | $1.00 | $5.00 | $9 00 |
| Select untested . . . | 1.25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.

I am booking orders now, delivery after May 25.

**Wm. A. Shuff, 4426 Osage Ave., Philade'phia, Pa**

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## Taylor's Strain of Italians is the Best

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3 00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

J. W. TAYLOR & SON, Beeville, Bee Co., Texas.

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## Italian Bees and Queens

from Root's red-clover stock of golden Italian queens. Untested, 75 cts. each; six, $3.75. Select untested, $1.00 each; six $5.00. Tested, $1.50 each; six, $8.00. Select tested, $2.00. Two frame nuclei, with untested queen, $2.25. Orders filled in rotation. Send all orders to E. A. SIMMONS, GREENVILLE ALA

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## NOT CHEAP QUEENS, BUT QUEENS CHEAP

**500 Best Strain Italian Queens Ready to Mail March 1st.**

Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK, ARK.**

# QUEENS

**GOLDEN AND CLOVER STOCK.**

Prices for May and June: Choice queens, $1.00 each, 6 for $5.00, or $9.00 a doz.; after July 1st, 75 cents each, 6 for $4.00, or $7.50 a doz. Tested queens in May and June, $1.50; after July 1st, $1.25. Two-comb nucleus, no queen, $2.00; three-comb nucleus, no queen, $2.50. Full colony on eight frames, no queen, $5.50. Five per cent discount on five, ten per cent on ten or more.
CATALOG FOR 1908 FREE. SEND FOR ONE.

**GEO. W. BARNES, box 340, NORWALK, OHIO**

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ITALIAN

# QUEENS

Having purchased the apiaries and queen-rearing business of Mr. A. E. Titoff, at Ioamosa, Cal., I hereby politely tip my hat to the bee-keeping world and try to say that I shall use every endeavor in my power to serve you faithfully and honestly.

Send for circular and price list.

Yours for the best queens and bees,

**E. M. GRAVES,**

**Ioamosa, San Bernardino Co., Cal.**

---

## Westwood Red-clover Queens

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

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## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, 75 cts.; tested, $1.00.

**New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.**

---

**W. H. Laws** is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled. Testimonials enough to fill this book. If you are going to improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10.00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

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## ITALIAN QUEENS BY RETURN MAIL OR MONEY REFUNDED.

Warranted, $1.00 each, six for $5.00; tested, $1.50 each. Circular free.

**D. J. BLOCHER, PEARL CITY, ILL.**

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## MILLER'S SUPERIOR ITALIAN QUEENS

By RETURN MAIL; bred from best Red-clover working strains in U. S. No better hustlers; gentle, and winter excellent; untested, from my SUPERIOR breeder, 1, $1.00; 6, $5.00; 12, $9.00. After July 1st, 1, 75c; 6, 4.00; 12, $7.50. Special prices on lots of 50 or more. Satisfaction and safe arrival guaranteed. Circular free.

**ISAAC F. MILLER, :: Reynoldsville, Pa.**

---

# Queens Queens

of the

## FINEST POSSIBLE BREEDING

BRED BY

**F. J. WARDELL,**

**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen | $1.25 |
| Select untested queen | 1.50 |
| Tested queen | 2.50 |
| Select tested queen | 3.50 |
| Breeding queens | 6.00 |
| Select breeding queens | 9.00 |
| Extra select " 1 year old, | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

---

# 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders, $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

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# When You Need Queens and want Your Order Filled By Return Mail.

Three-band Italians bred for business. Tested, $1.00; untested, 75c; $8.00 per doz. Send for price list.

**J. W. K. SHAW & CO.,**

**Loreauville, Iberia Pa., La.**

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Situations Wanted

WANTED.—Situation by an expert apiarist.
X. Y. Z., care of GLEANINGS, Medina, Ohio.

WANTED.—Position by a young man of good character and habits, to work with poultry, fruit, and bees. Three years' experience with head and hands. Work must be steady. Maryland, Delaware, or Ohio preferred. N. G. NEWLON, Salem, W. Va.

## Help Wanted

WANTED.—Young man, single, all around work on farm and bee-yard. If not experienced in heavy bee work do not apply. State wages, how soon can come, what can do, etc. Job good to Oct. 1st, possibly longer. W. P. SMITH, Penn, Miss.

## Post Cards

Temperance Post-cards.—20 gems containing inspiring temperance quotations, illustrated, for 15c.; 40 for 25c.; 100 for 60c. Premium coupon and seed catalog free with every order.
A. T. COOK, Hyde Park, N. Y.

## Rugs

Be sure to send for our circular before you have your old carpet made into rugs. A postal will bring it.
SANITARY RUG CO., Delaware, O.

## Poultry Offers

FOR SALE.—White Wyandottes, best breeding, 15 eggs, 75 cts.; 30, $1.25. J. F. MICHAEL, Winchester, Ind.

Fine R. C. R. I. Reds, W. Wyandottes, and Barred R.; 15, $1.50; Muscovy duck eggs, 12, 90c. C. FAJEN, Alma, Mo.

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Eggs, White Wyandotte, $1.00 per 15; $4.50 per 100. White Holland turkeys, $2.00 per 9.
FRANK C. PELLETT, Route 4, Atlantic, Iowa.

FOR SALE.—Prize-winners, Rose-comb White Wyandottes; Single-comb White Leghorns, and S. C. B. P. R., $1 per 15 eggs; $5 per 100. HARRY M. SULZBERGER, Ransom, Ill.

FOR SALE.—W. P. Rocks, Fishel and Empire strain. I have twenty select females headed by two extra-fine roosters. Eggs, $2.00 per twenty.
W. M. PARRISH, Route 8, Lawrence, Kansas.

EGGS FOR HATCHING.—White Holland turkeys, Rose Comb Brown and White Leghorns; S. C. Black Langshans and Minorcas; Barred and White Rocks; White Wyandottes; Pekin and Rouen ducks. Catalog for stamp.
JEWETT ALLEN, Walnut Grove, Minn.

Fifteen S. C. B. Leghorn eggs given free with every order for six or more queens if mentioned with the order. See advertisement, page 481. Regular price for eggs, $1.00 per 15; $1.25 per 30; positively by return express.
J. E. HAND, Birmingham, Ohio.

## Plants

WHITE RASPBERRIES grow wild in Oregon. Particulars for 2c. stamp. J. W. H., Box 887, St. John, Oregon.

## For Sale

FOR SALE.—9 Danz. hives, 22 Danz. supers, cheap.
F. W. LESSER, Sta. A., Syracuse, N. Y.

FOR SALE.—300 lbs. Dadant's thin brood foundation, size 8x17 inches. C. J. BALDRIDGE, Kendaia, N. Y.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

FOR SALE.—Best Wisconsin sections, 1000, $4.00; 2000, $7.75; 3000, $11.00; 5000, $17.50; No. 2, 50 cts. less; plain, 25 cts. less, 24-lb. 2-in. glass shipping-case, 14 cts. Catalog free.
H. S. DUBY, St. Anne, Ill.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cents each, postpaid. FRANK ALEXANDER,
Delanson, N. Y.

Don't bother with cans. Kegs are cheaper and easier to fill and handle. 160-lb. pine kegs, with 2-in. hole and plug, 50 cts. each, f. o. b. factory. Orders given prompt attention. Send list of supplies needed. I can save you money.
N. L. STEVENS, Moravia, N. Y.

## Real Estate for Bee-keepers

FOR SALE.—Good bee and fruit ranch. Price $4500; 200 acres of land; 20 acres tillable; 500 apple-trees from 2 years old to 10; 200 English walnuts; 50 peach-trees; good small house, and barn. The rest of the ranch is mountain covered with live oak—say 4000 cords of wood. One of the best sage-brush locations in central California; 200 stands of good bees in patent hives on full foundation; extractor-tanks, honey-house; only 12 miles from San Luis Obispo, California. This place is well watered with plenty of good spring water, and a snap if taken soon. OTIS RAMAGE,
San Luis Obispo, California.

## Wants and Exchanges

WANTED.—Several pairs of gray squirrels. State price.
JOHN RICK, 434 Oley St., Reading, Pa.

WANTED.—Refuse from wax-extractors and old comb for cash.
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—To buy or rent bees in So. California.
C. A. WURTH, College View, Neb.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

## Bees and Queens

Untested queens (shipped from South), 60 cents each. Also bee-supplies. List free. A. RATTRAY, Almont, Mich.

FOR SALE.—150 colonies of bees in uniform hives, free from disease. Also 150 empty hives.
S. E. TENNANT, Schoharie, N. Y.

FOR SALE.—100 Heddon supers, wired combs, for 50 cents each. W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—45 colonies of bees in 8-frame Hilton chaff hives; straight combs, built on wire.
ALBERT FIEN, Falmouth, Mich.

FOR SALE.—100 colonies of Italian bees at $6.00 per colony; ten or more, $5.00 each. G. H. ADAMS, Mill St., Bellevue, Schenectady, N. Y.

FOR SALE.—Selected young Italian queens, bred for superiority in honey production instead of color. Single queen, 75 cts.; 6 for $4.00; one dozen for $7.50. Also Golden all over, Cyprians, Carniolans, and Banats. JULIUS HOPPEL, 414 Up. 4th St., Evansville, Ind.

Save money by getting full colonies and nuclei; also one pound of bees and queens of same strains, bred in Medina apiary, from Mechanic Falls branch.
J. B. MASON, Mechanic Falls, Me.

FOR SALE.—After May 15, Italian, Carniolan, Caucasian queens, untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Nuclei, after June 10, 1, 2, 3 frames, including queens, $2, $3, $4. Orders booked now.
EDWARD REDDOUT, Baldwinsville, N. Y.

FOR SALE.—75 colonies of bees, Italian stocks. I sold $1000 worth of honey last year from 180 colonies. All worker combs; bees never diseased.
MRS. S. WILBUR FREY, Sand Lake, Mich.

FOR SALE.—Few strong colonies of Italians in ten-frame Dovetail or Danz. hives; combs built on wire; no disease; every thing first class; shipped by express on receipt of $6.00 two or more, $5.50 each. Danz. supers filled with sections and starters, 85 cents each.
J. W. LEIB, 563 S. Ohio Ave., Columbus, Ohio.

## Honey and Wax for Sale

FOR SALE.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Fancy orange-blossom in 60-lb. cans, 8¼ cts.; water-white sage in 60-lb. cans, 8 cts.; light-amber in 60-lb. cans, 7¾ cts.; dark-amber in 60-lb. cans, 7½ cts.
E. R. PAUL & CO., Milwaukee, Wis.

FOR SALE.—Fancy white comb honey; also extracted basswood, white-clover, alfalfa, and amber honey in barrels or 60-lb. cans. ROBERT A. HOLEKAMP & SON, 4263 Virginia Ave., St. Louis, Mo.

FOR SALE—White comb honey, No. 1, average 23 lbs. to the case of 24 sections, $3.25 per case; amber, $2.50. Fancy white extracted in 60-lb. cans, 10½ cts.; amber, 9½.
HAROLD HORNOR, Jenkintown, Pa.

FOR SALE.—Choice extracted honey for table use — thick, well ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, queen-breeder, Morgan, Ky.

## Honey and Wax Wanted

WANTED.—White ripe extracted honey; will pay cash.
GEORGE RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

BEE-SUPPLIES.—Send list of wants for low prices and best goods to E. T. ABBOTT, St. Joseph, Mo.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. Queen-rearing outfits and books; new 40-page catalog free. E. L. PRATT, Swarthmore, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND, Birmingham, Erie Co., Ohio.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Mott's long-tongued Italians are climatized to cold winters yet gentle and hardy. Circular free.
E. E. MOTT, Glenwood, Mich.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titorf, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# SPECIAL NOTICES

## BY OUR BUSINESS MANAGER

### FOUNDATION SPLINTS.

Some have been writing Dr. Miller for foundation-splints. He does not have them for sale. We are prepared to furnish them for 10 cts. per 100, 50 cts. per 1000 postpaid, or 40 cts. per 1000 with other goods.

### MAPLE SYRUP.

We have a good supply of very choice maple syrup which we can supply at $1.00 per gal.; 6 gal. at 95c; 20 gal. or over, 90c. Will be pleased to hear from those interested. Maple sugar is not so plentiful, and we can not offer this at less than 15c per lb. for best; 13c for fair to choice.

### CARTONS FOR OUNCE CAKES OF BEESWAX.

We can supply cartons for one-ounce cakes of beeswax, printed with name and address blank, at 35 cts. per 100; 250 for 80 cts.; 500 for $1.50; 1000 for $2.75; by mail, 15 cts. per 100 extra. These prices will also include the large carton to contain 32 of the small ones. The complete package weighs 2 lbs., and, when filled, sells to the dealer at $1.00. They retail the cakes at 5 cts. each. Retinned molds for molding ounce cakes costs 35 cts. per dozen; by mail, 40 cts.; for two-ounce cakes, 40 cts.; by mail, 50. We do not have cartons to fit the two-ounce cakes. To print your name and address on the cartons will add, 250 or less, 50 cts.; 500, 75 cts.; 1000, $1.00.

### SECOND-HAND FOUNDATION-MILLS.

We have to offer the following second-hand foundation-mills in good condition. We shall be pleased to hear from any one interested. To such we can send a small sample of comb foundation representing the kind of work produced by the particular machine you inquire about.

No. 079.—6x2½-inch hex. cell thin-super mill, in very good condition. Price $12.00.

No. 078.—6x2½-inch hex. cell thin-super mill, in good condition. Price $12.00.

No. 086.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $12.00.

No. 075.—2x9 hex., very old style, on frame with wood base; in fair condition. Price $10.00.

No. 085.—2½x6 hex. thin-super mill, in good condition. Price $12.00.

No. 086.—2½x6 hex. extra-thin-super mill in extra-good condition. Price $15.00.

No. 096.—2½x10 hex. light-brood mill; almost new; in fine condition. Price $20.00.

No. 097.—2½x10 hex. light-brood mill; in fine condition. Price $18.00.

No. 077.—10x2-inch medium-brood round cell, old-style frame, in good condition. Price $14.00.

No. 092.—6x2½-inch hex. cell extra-thin-super mill, in fine condition. Price $15.00.

No. 2275.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $13.00.

# Special Notices by A. I. Root

### GOOD BOOKS FOR BEE-KEEPERS AND OTHERS WHO ENJOY OUTDOOR WORK AT THIS SEASON OF THE YEAR.

Don't forget to look over our list of books elsewhere in this issue. It should have been put in a little earlier, but was crowded out by other matter. Many of these books will give you short cuts in your outdoor work that may save you hundreds of dollars. They are all carefully selected, and some of them were written by your old friend A. I. Root, some of which, at least, he thinks, will prove valuable. I want to call attention also to our free leaflets and pamphlets. These were printed to give away free of charge in order to save our time in answering many questions that are asked over again. Some time later on, if you write that these leaflets have been helpful to you in the past, that will be all the pay we want.

### THE "FIRELESS" BROODER UP TO DATE.

The one we have works beautifully in April and May. While we gave the chicks the benefit (?) of the warm pipes in the greenhouse they kept dying as mentioned in our last issue; but after we put them outdoors where they had no artificial heat at all they brightened up at once and not a chicken has died since; and I feel pretty well satisfied that no artificial heat is needed (in fact, I think the chicks are much better off without it) say after April 1 in our locality. *Perhaps* there is no artificial heat needed, even in the winter time; but I am not so well satisfied from my own experience as to that; but I do now feel very sure that, in my travels, I have seen many chickens feeble and dying under the influence of artificial heat when they would have been *ever so much* better off out in the open air and sunshine.

### A NICE LARGE POULTRY-BOOK ABSOLUTELY FREE OF CHARGE TO EVERYBODY WHO SUBSCRIBES FOR GLEANINGS.

This book is the same thing that is advertised on page 661 at $1.00. There are 350 pages, profusely illustrated, and it is exactly the same thing as the dollar book except the paper covers. Everybody who sends a dollar for GLEANINGS, or any one who pays for it a year or more in advance, may have this book free of charge providing he sends 6 cents to pay the postage. We furnish the book just as we say, but we positively can not keep postage-stamps to *give away*. Although this book may not be clear up to date in some things, it contains more *practical matter*, in my opinion, than a whole dozen of *some* of the little paper pamphlets now offered for a dollar or more.

### THE "DANDELION COW" AT THIS TIME, MAY 15.

This same cow is now giving a foaming pailful of excellent milk while her food is almost entirely dandelions and nothing else. While I write she is gathering in the yellow blossom-heads in great quantities, that stand a foot high or more, and cover the ground in our orchard so thickly that in places they look as if the ground were literally covered with yellow snow. Just at this time I notice the papers are (as usual) talking about waging war on the dandelion. Why in the world don't they get a cow, and then, instead of fighting the dandelions, underdrain the soil and make it very rich, and let the dandelions grow? There is no other plant that will furnish the amount of feed at this season of the year as does the dandelion. We (Roots and Rootlets) have not found any better milk than that furnished by the cow while she is, week after week, on an almost pure "dandelion diet."

### WRIGHT BROTHERS MAKE A SUCCESSFUL TRIP IN AIR-SHIP.

I have been telling you several times of late that we should soon have some news. As I write to-day, May 9, the daily papers are full of accounts of their flights. From a column of matter in the Cleveland *Leader* I gather that they are making some flights from Manteo, N. C., over the sand dunes of what is called Kill Devil Hill. They have made as many as ten ascensions, covering in all over 30 miles. Every thing worked quite as well as when I witnessed their work two years ago last October. First one of the brothers made a flight and then the other. They seemed to show equal skill in handling the machine. "At no time did it seem necessary to direct the machine to the ground. Apparently it could easily have continued its flight many miles." Their longest flight, which occupied two minutes, covered a mile and a half. The papers state that the present machine weighs 350 lbs. The engine, 30 horse-power, weighs just about as much as the rest of the machine. I quote from the *Leader* as follows:

The Wrights refuse requests for information regarding their machine, and little can be learned about it except by observation of its performances. Located as they are at Kill Devil Hill, and surrounded by sand hills with practically no inhabitants, their experiments were witnessed by only a few people. They are one mile from the Kill Devil Hill life-saving station, on the beach of the Atlantic. Its six surfmen assisted them in building and in handling the machine. These and several others witnessed the experiments to-day.

A herd of long-haired cattle, observing operations from afar, were frightened into Roanoke Sound when once the machine flew in their direction.

Probably by the time this reaches you there will be plenty of news of a more extended flight. May God grant that no accident may happen to these two young Ohio inventors who seem to have distanced the whole wide world in making a machine that will actually fly like a bird, without the assistance of any balloon.

I have had no recent information from the Wright Brothers themselves; but the above would indicate that there is going to be "something doing" pretty soon in the way of a real flying-machine — that is, a machine that does not need a balloon to hold it up.

### DAY-OLD CHICKS BY EXPRESS.

*Dear Friend:*—I will say I make a specialty of shipping day-old chicks by express. I am a subscriber to GLEANINGS from the start, and will be as long as I live. H. M. MOYER.

Bechtelsville, Pa.

In addition to the above we would add the names of Mrs. Stephen Walker, Hawthorn Farm, Williamsville, N. Y.; and F. E. Schriver, Greenlawn Farm, Grafton, O., sends out day-old chicks and ducklings; also C. A. Thompson, Bellevue, O., and F. G. Mason, Fabius, N. Y., chicks only.

## Convention Notices.

TENNESSEE STATE BEE-KEEPERS' ASSOCIATION.

At the close of the course in apiculture given at the University of Tennessee, Knoxville, this spring, a State bee-keepers' association was formed. The following officers were elected: President, Prof. G. M. Bentley, Knoxville; Vice-president, Mr. Henry Cook, Springfield; Secretary and Treasurer, Mr. John Davis, Spring Hill. Much enthusiasm was demonstrated in the organization of this Association, and the list of membership has increased rapidly, and additional names are being received daily. The annual meeting is to be held conjointly with the State Horticulturists and Nurserymen in Nashville during the last week in January, 1909. G. M. BENTLEY,
Ass't State Entomologist and Plant Pathologist.

[The bee-keepers of Tennessee would do well to get in touch with Mr. Bentley.—ED.]

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The annual meeting of the Missouri State Bee-keepers' Association will take place May 26 and 27, at the Courthouse of Carrolton, Mo. The meeting will convene at 9 A.M.

A very interesting program has been prepared which is as follows: First day, morning session at the courthouse; afternoon meeting at the bee-yard of A. Finlayson, of Carrolton. There will be a practical demonstration of transferring bees from box to movable-frame hives, and a practical demonstration of queen-breeding and requeening colonies of bees.

Second day at courthouse. Lecture on foul brood, explaining the same by exhibiting a hive containing diseased combs, also microscope and slides showing the microbes which cause the disease.

Our State bee-inspector, Mr. M. E. Darby, will be on hand to explain the spread of the disease over our State. There will be a number of speakers, all expert bee-keepers, who will lecture on different topics interesting to bee-keepers.

We also expect to exhibit in the courthouse yard a hive of bees in a cage made of wire screen to enable the public at large to see the working of the bees without being in danger of stings. An expert bee-keeper will enter the cage, open up the hive, and show how the bees are doing their work.

Hotel accommodations can be had at $1.00. Arrangements have been made so that all can be accommodated. All bee-keepers and those interested in bees are invited.

ROBERT A. HOLEKAMP, SEC.,
4263 Virginia Avenue, St. Louis, Mo.


**T. B. TERRY'S HEALTH HINTS**

published only in The Practical Farmer each week, have been the means of saving lives and thousands have been helped to enjoy life more than they have ever done before. Send **Twenty-five Cents** to The Practical Farmer, Philadelphia, Pa., and read Mr. Terry's Health Hints **thirteen weeks on trial.** You will be surprised to find how simple a matter it is to get well and strong and keep so. The latest and best that can be given you, together with strong editorials on Agriculture, Live Stock, Gardening, Home Life, etc. A high class weekly, well worth the subscription price of $1.00 per year. Address

**THE PRACTICAL FARMER**
**P. O. Box 1317 PHILADELPHIA, PA.**

**DOOLITTLE & CLARK**

have some choice Italian queens reared last fall, and ready for delivery now. These queens are mated to select drones. Price $2 50, $5.00, and $10 00.

**BORODINO, ONONDAGA CO., N. Y.**

**BABY CHICKS**

**WE'VE GOT 'EM — YOU WANT EM.**

Eight varieties of strictly standard-bred day-old chicks. From choice eggs. No purer blood ever wore feathers. Every Tuesday a hatch day. Kindly enclose two-cent stamp for catalog.

**Ohio Hatchery and Mfg. Co., box 40, Bellevue, O.**

**NEW ENGLAND BEE-KEEPERS**

WE ARE HEADQUARTERS FOR

**Bee-supplies**

in this section, as we carry the largest and most complete line of Hives, Supers, Sections, Foundation, Bee-smokers, and other Apiarian Supplies, of any one in the New England States. We have a good stock of goods on hand now, and solicit your orders. Send postal for price list of

**Bees and Queens.**

**W. W. CARY & SON**
**LYONSVILLE, MASS.**

**Root Supplies** in stock.
**Root Supplies** on the road.
**Root Supplies** being ordered every week from the factory.
**Root Supplies** ready for your orders.

Hadn't you better send them to us?

**GEO. S. GRAFFAM & BRO., 47 Main St, BANGOR, ME**

**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **Boston**

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**

FOR SALE.—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.,* **Minneapolis, Minn.**

BIG STOCK OF A. I. ROOT CO'S AND MARSHFIELD CO'S
**BEE-SUPPLIES AT MANUFACTURERS' PRICES**
For cash sent in April, deduct 8 per cent; for cash sent in May, deduct 7 per cent; take their 1908 price lists if you have one. If not, send for one or both. S. D. BUELL, Union City, Mich.

# Books for Bee-keepers and Others.

Any of these books on which postage is not given will be forwarded by mail postpaid, on receipt of price.

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice that you can judge of the size of the books very well by the amount required for postage on each.

BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.

Postage.] [Price without postage

8 | Bible, good print, neatly bound ..... 20

10 | Bunyan's Pilgrim's Progress** ..... 40

6 | Christian's Secret of a Happy Life,** cloth 25

1 | Gospel Hymns, consolidated, Nos. 1, 2, 3, and 4, words only; cloth..... 10

2 | Same, board covers..... 20

3 | New Testament in pretty flexible covers..... 05

*One-third off on all Gospel Hymns mentioned above.*

5 | New Testament, new version, paper covers..... 10

10 | New Testament, both Spanish and English ... 25

6 | Christian's Secret of a Happy Life. Cloth ..... 25

For several years we have been unable to get a nice substantial copy of this book at a reasonable price. We are glad to tell our friends now, however, that we have a very pretty edition, bound in cloth, at the very reasonable price of 25 cents. If wanted by mail, add 6 cents for postage. This book has had a very large sale for more than 20 years, and when I tell you that quite a number of people have been converted to the Lord Jesus Christ simply by reading it you will no longer wonder why it sells. At one time it was carried and sold by the newsboys on our railways. It not only contains a wonderful "secret" for unbelievers, but for many who have been church-members all their lives, but not the "happy" church-members that God intended we should be.

5 | Amerikanische Bienenzucht..... 95

BOOKS ESPECIALLY FOR BEE-KEEPERS.

25 | A B C of Bee Culture, cloth.....1 25

| Bienenzucht und Honiggewinnung..... 25

Or "Bee Culture and the Securing of Honey," a German bee-book by J. F. Eggers, of Grand Island, Neb. Postage free.

15 | Cook's Manual, cloth.....1 00

5 | Doolittle on Queen-rearing ..... 95

| Dzierzon Theory..... 10

15 | Langstroth Revised, by Chas. Dadant & Son.....1 10

10 | Quinby's New Bee-keeping..... 90

5 | British Bee-keeper's Guide-book, by Thomas William Cowan, England ..... 95

5 | The Honey-bee, by Thos. William Cowan..... 95

3 | Merrybanks and His Neighbor, by A. I. Root... 12

10 | The Honey-makers, by Miss Margaret W. Morley.....1 40

This is a story of the life of the bee, told in very interesting style—how it lives, gathers honey, and all about it. While clothing the general subject with an air of poetry, it seems to be entirely within the limits of known facts while attempting to deal with them. We believe it will give all thoughtful bee-keepers a greater liking for their business to read it. Probbaly it has more to do with the curious traditions connected with bees than any other book of the kind.

10 | The Life of the Bee .....1 30

Thos. Wm. Cowan, editor of the British Bee Journal, in his review of Maeterlinck's work, says: "Not since the appearance, in 1876, of Bucher's 'Mind in Animals' have we had a book about bees more charming, or one that we have read with greater pleasure, than Maeterlinck's 'Life of the Bee.'"

| Bee-keeping in Jamaica. By F. A. Hooper, Kingston, Jamaica. Paper covers..... 10

10 | Forty Years Among the Bees. By Dr. C. C. Miller, Marengo, Ill..... 90

15 | Modern Bee-farm. By S. Simmins. New edition; cloth bound.....1 85

MISCELLANEOUS HAND-BOOKS.

Postage.] [Price without postage.

5 | A B C of Carp Culture, by Geo. Finley..... 25

5 | A B C of Strawberry Culture,** by T. B. Terry.. New edition, revised and enlarged; paper, 45c; cloth, 68c; by mail, 75c.

5 | A B C of Potato Culture, Terry** New edition, revised & enlarged; paper, 45c; cloth, 68c, mail 75c. This is T. B. Terry's first and most masterly work.

8 | Barn Plans and Out-buildings*..... 90

2 | Celery for Profit, by T. Greiner** ..... 25

The first really full and complete book on celery culture, at a moderate price, that we have had. It is full of pictures, and the whole thing is made so plain that a schoolboy ought to be able to grow paying crops at once without any assistance except from the book.

10 | Draining for Profit and Health, Warring..... 90

8 | Domestic Economy, by I. H. Mayer, M. D.** ... 30

This book ought to save at least the money it costs, each year, in every household. It was written by a doctor, and one who has made the matter of domestic economy a life study. The regular price of the book is $1.00, but by taking a large lot of them we are enabled to make the price only 30 cents.

10 | Fruit Harvesting, Storing, Marketing, etc..... 75

It has been well said that it is an easier matter to grow stuff than to sell it at a proper price after it is grown; and many men fail, not because they are inexpert in getting a crop, but because they do not know how to sell their crops to the best advantage. This is the first book of the kind we have had as an aid in selling. It not only tells all about picking, sorting, and packing, but gives all the best methods for storing for one or two days or a longer time. It also tells about evaporating and canning when there is a glut in the market. It discusses fruit packages and commission dealers, and even takes in cold storage. It is a new book of 250 pages, full of illustrations. Publisher's price, $1.00.

| Farming with Green Manures, postpaid**..... 90

This book was written several years ago; but since competent labor has got to be so expensive, and hard to get, many farmers are beginning to find they can turn under various green crops cheaper than to buy stable manure, and haul and spread it—cheaper, in fact, than they can buy fertilizers. This book mentions almost all plants used for plowing under, and gives the value compared with stable manure. Some of the claims seem extravagant, but we are at present getting good crops, and keeping up the fertility, by a similar treatment, on our ten-acre farm.

7 | Farm, Gardening, and Seed-growing** ..... 90

10 | Fuller's Grape Culturist**.....1 15

5 | Garden and Farm Topics, Henderson**..... 60

12 | Gardening for Pleasure, Henderson*.....1 10

While "Gardening for Profit" is written with a view of making gardening PAY, it touches a good deal on the pleasure part, and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations. (Retail price $2.00.)

12 | Gardening for Profit**.....1 10

This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts (Retail price $2.00.)

8 | Gardening for Young and Old, Harris**..... 90

This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

3 | Grasses and Clovers, with Notes on Forage Plants..... 20

This is by Henry A. Dreer, author of the book "Vegetables Under Glass" that has had such a large sale of late. This little book tells how six tons of grass has been grown to the acre, and gives much other valuable matter.

Postage.] [Price without postage.

10 | Greenhouse Construction, by Prof. Taft** 1 15

This book is of recent publication, and is as full and complete in regard to the building of all glass structures as is the next book in regard to their management. Any one who builds even a small structure for plant-growing under glass will save the value of the book by reading it carefully.

12 | Greenhouse Management, by Prof. Taft**.....1 15

This book is a companion to Greenhouse Construction. It is clear up to the times, contains 400 pages and a great lot of beautiful half-tone engravings. A large part of it is devoted to growing vegetables under glass, especially Grand Rapids lettuce, as well as fruits and flowers. The publisher's price is $1.50; but as we bought quite a lot of them we can make a special price as above.

5 | Gregory on Cabbages, paper* ..... 20

5 | Gregory on Squashes, paper*..... 20

5 | Gregory on Onions, paper*..... 20

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

| Handbook for Lumbermen..... 05

5 | Home Pork-making; 125 pages, illustrated..... 40

I think it will pay well for everybody who keeps a pig to have this book. It tells all about the care of the pig, with lots of pictures describing cheap pens, appliances, all about butchering, the latest and most approved short cuts; all about making the pickle, barreling the meat, fixing a smoke-house (from the cheapest barrel up to the most approved arrangement); all about pig-troughs; how to keep them clean with little labor; recipes for cooking pork in every imaginable way, etc. Publisher's price is 50 cents, ours as above.

15 | How to Make the Garden Pay**.....1 35

By T. Greiner. Those who are interested in hot-beds, cold-frames, cold green-houses, hothouses, or glass structures of any kind for the growth of plants, can not afford to be without the book. Publisher's price $2.00.

| How we Made the Old Farm Pay—A Fruit-book, Green ..... 10

10 | Irrigation for the Farm, Garden, and Orchard* 85

By Stewart. This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills to take the place of rain, during our great drouths, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

3 | Maple Sugar and the Sugar-bush**..... 25

5 | Manure; How to Make and How to Use Them; in paper covers..... 30

6 | The same in cloth covers..... 65

| Nut Culturist, postpaid.....1 25

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Fully up to the times, and includes both the old onion culture and the new method. The book is fully illustrated, and written with all the enthusiasm and Even if one is not particularly interested in the business, almost any person who picks up Greiner's books will like to read them through.

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8 | Practical Floriculture, Henderson.*.....1 10

10 | Profits in Poultry.* .....1 00

10 | Small-Fruit Culturist, Fuller ..... 75

2 | Sorghum, Stock Beets, Strawberries, and Cement Floors. By Waldo F. Brown..... 08

This little book ought to be worth its cost for what is said on each of the four different subjects; and the chapter on cement floors may be worth many dollars to anybody who has to use cement for floors, walks, or any thing else. In fact, if you follow the exceedingly plain directions you may save several dollars on one single job; and not only that, get a better cement floor than the average mason will make.

2 | Sweet Potatoes; Forty Years' Experience with. By Waldo F. Brown **..... 08

This little book, by a veteran teacher at our farm

Postage.] [Price without postage.

ers' institutes, ought to be worth many times the price to everybody who grows even a few sweet potatoes in the garden. It also gives full particulars in regard to handling and keeping this potato, which is difficult to keep unless you know just how.

10 | Talks on Manures* .....1 35

By Joseph Harris. Written conversational style, which makes it very interesting reading. It covers the subject very completely; contains numerous analyses of manures and comparative tables. The use of technical language is avoided, which makes the book of greatest value to the practical farmer. A book of 366 pages, nicely bound in cloth.

5 | The New Rhubarb Culture**..... 40

Whenever apples are worth a dollar a bushel or more, winter-grown rhubarb should pay big. It does not require an expensive house nor costly appliances. Any sort of cellar where it will not freeze is all right for it; and the small amount of heat necessary to force the rhubarb costs very little. The book is nicely bound in cloth, full of illustrations, mostly photos from real work, 130 pages. Every market-gardener should have this book, for the lessons taught indirectly, in regard to forcing other crops besides rhubarb. Publisher's price 50c.

5 | Tile Drainage, by W. I. Chamberlain..... 35

Fully illustrated, containing every thing of importance clear up to the present date.

The single chapter on digging ditches, with the illustrations given by Prof. Chamberlain, should alone make the book worth what it costs, to every one who has occasion to lay ten rods or more of tile. There is as much science in digging as in doing almost any thing else; and by following the plan directed in the book, one man will often do as much as two men without this knowledge.

5 | Tomato Culture ..... 35

In three parts. Part first.—By J. W. Day, of Crystal Springs, Miss., treats of tomato culture in the South, with some remarks by A. I. Root, adapting it to the North. Part second.—By D. Cummins, of Conneaut, O., treats of tomato culture especially for canning-factories. Part third.—By A. I. Root, treats of plant-growing for market, and high-pressure gardening in general.

3 | Vegetables under Glass, by H. A. Dreer**..... 20

3 | Vegetables in the Open Air*..... 20

This is a sort of companion book to the one above. Both books are most fully illustrated, and are exceedingly valuable, especially at the very low price at which they are sold. The author, H. A. Dreer, has a greenhouse of his own that covers one solid acre, and he is pretty well conversant with all the arrangements and plans for protecting stuff from the weather, and afterward handling to the best advantage when the weather will permit out of doors.

3 | Winter Care of Horses and Cattle..... 25

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in a book. It has 44 pages and 4 cuts.

3 | Wood's Common Objects for the Microscope**.. 47

8 | What to Do, and How to be Happy while Doing It..... 65

The above book, by A. I. Root, is a compilation of papers published in *Gleanings in Bee Culture*, in 1886, '7, and '8. It is intended to solve the problem of finding occupation for those scattered over our land out of employment. The suggestions are principally about finding employment about your own homes. The book is mainly upon market-gardening, fruit-culture, poultry-raising, etc. Illustrated, 188 pages, cloth.

8 | Same, paper covers..... 40

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Soy (or Soja) Bean; all about it.
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Sanitary Drainage.

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It was a GOOD YEAR for users of

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Another dealer used 7,250 pounds. Another dealer used 4,500 pounds. Another dealer used 4,500 pounds.
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# Gleanings in Bee Culture

## O Errant Bee!

Thou art so gay, so bright and free,
O errant Bee!
Sipping the sweets from flower to flower
So recklessly!
Could I but join thee in thy flight
And hie away
From cares that vex and griefs that cling,
For just one day!

Could I but beat the air with wings
As light as thine—
Upon the sweets of life, like thee,
At will could dine—
Then, gorged with honey, hie me home
To sleep, care free,
And awake, unknowing what morn had
In store for me!

Ah! is it knowledge that doth breed
Inward unrest?
Doth take from common daily toil
Its welcome zest?
O Nectar Gatherer, must we,
For wings, forego
The thrill which loving, human hearts
Alone can know?

Then hie thee to the clover-blooms,
O Light of Wing!
Since neither pain nor loss of love
To thee can bring
Heartache or sorrow—live thy life
Griefless, care free—
Pain is my legacy from love,
O errant Bee!

—HELEN M. RICHARDSON, in *Farm Journal.*

*Published by* **The A. I. Root Co., Medina, Ohio, U. S. A.**

Entered at the postoffice, Medina, Ohio, as Second-class Matter.

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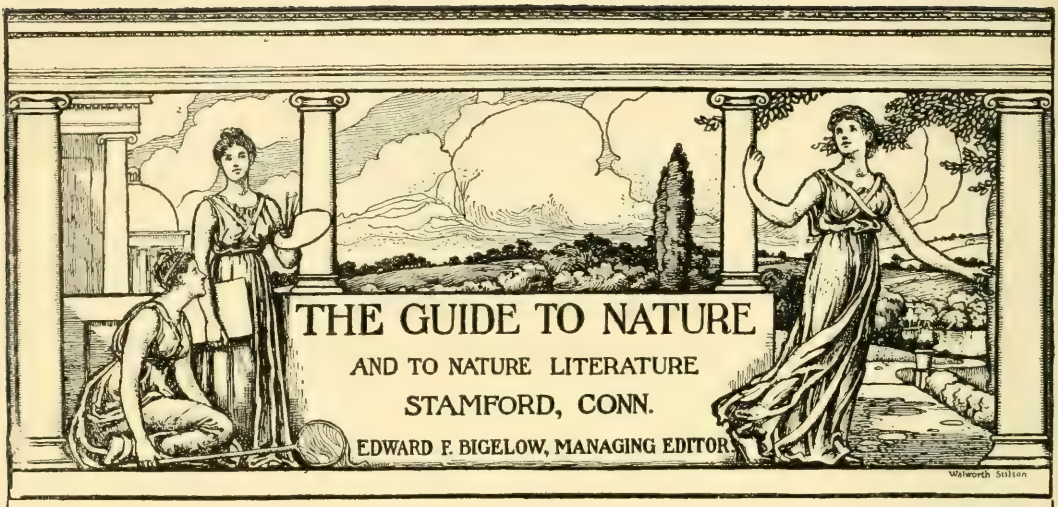


## THE SPIRIT OF "THE GUIDE TO NATURE."

It is the mission of "The Guide to Nature" to draw the reader toward an appreciation of the beauty and value of natural objects and away from artificial objects to the domain of wild nature; to arouse the listless student to activity and zeal in the study of nature.

Even to the most enthusiastic of us who study and love nature, there come times when, after we have "wandered away and away with Nature," we can sympathize with what Longfellow said of Agassiz, that

> . . . "the way seemed long
> Or his heart began to fail."

It is at such times that "The Guide" will inspire to greater efforts and encourage every student by telling of the faithfulness, zeal, and success of others. We all need good cheer from fellow-workers. Much of our inspiration is, "Omne vivum ex vivo," which freely translated means, "We are inspired and cheered by a friend." "The Guide" will be a leading, enticing, cheering, encouraging friend to students and lovers of nature.

The manufacturers of a certain "talking machine" advertise extensively that it "saves theater money." The publishers of "The Guide to Nature" can excel that by at least one point, and may well advertise that it "saves theater desire"—makes the theater expense wholly uncalled for, and that, too, in the best way, not in substitute on a small scale, but an excelling on a larger and better point of view.

There is no entertainment, no interest, no education, no resource equal to nature when rightly viewed. "The Guide to Nature" directs you to that view.

You who find entertainment and interest in honey-bees need no further argument. You are of the right mental make-up to understand all I would say if I wrote volumes on nature as a recreation. All you need to do is to send $1.50 for a year, or 15c for a single copy.

EDWARD F. BIGELOW, Editor of "Guide to Nature,"
Stamford, Connecticut.

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*Dear Sir:*—Bee-supplies to hand. Let me congratulate you on your work This is my first business with you, and I like your promptness. I find freight less and time saved by ordering from you. Enclosed find check for $2.58 to pay freight charges.

Yours truly, W. J. COPELAND, M. D.,
Fetzerton, Tenn.

*Dear Sir:*—The bee-supplies ordered from you arrived in due time, and good condition. Am well pleased.

Yours truly, CHAS. T. DOWNING,
Rt. 7, Lexington, Ky.

**WANTED.** Amber, light, and dark southern extracted honey. State quantity, style of package, and lowest price expected delivered in Cincinnati. Mail Samples.

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**CINCINNATI, .. .. .. OHIO**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

Fancy.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 White.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatoied honey to average not less than 23 pounds net per case of 24 sections.

No. 1 Light Amber.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

Indianapolis.—Jobbers are fairly well stocked, but very little honey is being offered by producers. Best grade of extracted honey is in good demand, but comb honey is finding slow sale. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 15 to 17; extracted white clover, 8 to 9; amber, in barrels, 6 to 6½. Beeswax, 28 cts. cash or 30 in exchange for merchandise. Walter S. Pouder,
May 16. Indianapolis, Ind.

Philadelphia.—The call for both comb and extracted honey has fallen off considerably in the last two weeks. Quite a few job lots on the market, which parties will sell at almost any reasonable offer. This makes the prices very unsteady. We quote: Fancy white comb honey, 17 to 18; No. 1, 15 to 16; amber, 13 to 14; extracted honey, fancy white, 8 to 9; amber, 6 to 7. We do not handle on commission. Wm. A. Selser,
April 24. 10 Vine St., Philadelphia, Pa.

Liverpool.—The market for honey and beeswax is steady and quiet. We quote honey, Chilian, 4 to 6⅓ cents; Peruvian, 3½ to 5⅓; California, 7½ to 9; Jamaican, 4 to 5⅓; Haiti, 6⅓ to 6½. Beeswax is very firm — African, 30 to 32; American, 30 to 33; West Indian, 29 to 32; Chilian, 30 to 36; Jamaican, 34 to 35. Taylor & Co.,
May 13. 7 Tithebarn St., Liverpool.

San Francisco.—The market is almost bare of first-class old-crop offerings of comb honey, and the little that has been gathered of the new crop does not appear in this market. We quote: Comb, water-white, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber and candied, 5¼ to 5¾.—*Pacific Rural Press*, May 16.

St. Louis.—The honey market is very quiet. There is absolutely no demand for comb honey. Extracted honey is also neglected, consequently the prices have declined. Quote as follows: Fancy white comb honey, 15 to 16; No. 1, white and amber, 12 to 14; broken and defective, less. Extracted white, in cans, nominal at 8 to 8½; amber, 7 to 7½; in barrels, 5½ to 6; granulated extracted honey sells at less. Beeswax, 29 for prime; impure and inferior, less. R. Hartmann Produce Co.,
May 11. St. Louis, Mo.

Zanesville.—So light is the demand for honey at the present time that it is almost useless to quote the market. Stocks are pretty well reduced, and there is a tendency to cut prices, especially on the part of one-horse dealers. While the remnant of last year's crop is moving very slowly, some revival is anticipated with the arrival of the new crop. For good quality beeswax I offer 30 cts. in exchange for bee-supplies. Wax wholesales at 40 to 45. Edmund W. Peirce,
May 18. Zanesville, O.

Buffalo.—There has been no change in the price of honey since last quoted. The demand is fair for pure white comb and good No. 1 buckwheat comb. We think that about all the honey in the market will be cleaned up before the new crop is ready. W. C. Townsend,
May 11. Buffalo, N. Y.

Cincinnati.—The market on extracted honey is light. We quote light amber in barrels at 6½; California white sage, 9½; practically no demand for comb honey. Beeswax sells at 33.
C. H. W. Weber,
May 23. Cincinnati, O.

Kansas City.—We have nothing to quote in the way of comb honey; but we quote extracted white at 7½. Beeswax, 25 to 27. C. C. Clemons & Co.,
May 9. Kansas City, Mo.

Chicago.—The honey market is without volume—no special change in price of either comb or extracted. Much of the extracted from Utah will be unsold when this year's crop is harvested unless it is sold to bakers. Beeswax is steady at 30.
R. A. Burnett & Co.,
May 9. Chicago, Ill.

Schenectady.—We have had a few calls for dark extracted honey from manufacturers, but did not have any stock on hand. Of course, they will not pay fancy prices. Nothing is doing in comb honey. Chas. MacCulloch,
May 9. Schenectady, N. Y.

Boston.—White comb honey, fancy, 17; No. 1 white comb honey, 16; white extracted honey, 10; light amber, 9; amber, 8.
Blake-Lee Co.,
April 10. 134 State St., Boston, Mass.

St. Paul.—Receipts are very light; demand moderate and prices steady. The prices below represent those obtained for shipment in small lots: Fancy white-clover comb, new, per lb., 18; fancy California, 24 combs per case, $4.00; strained, in 60-lb. cans, per lb., 10. W. H. Patton, Sec. Board of Trade,
April 22. St. Paul, Minn.

Denver.—The market on comb honey is slow, and prices are declining. We quote to our trade, No. 1 white, per case of 24 sections, $3.00; No. 1 light amber, $2.85; No. 2, $2.70; extracted, white, 8 to 9; light amber, strained, 6¾ to 7. We pay 25 cts. for clean yellow beeswax delivered here.
The Colorado Honey-producers' Association,
April 22. F. Rauchfuss, Mgr.

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**YOU know Him, and what He is to the Bee Business.**

# SEE

**DR. O. M. BLANTON**

**in a . . . . .**

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**what he has to say of it:**

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O. M. BLANTON.

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**THE MAN WHO WEARS THE VEIL!**

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MUTH BEE-VEIL BETTER THAN THE REST.

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# The Hand System

TO satisfy a number of customers we are now making hives to suit the above system, just as the inventor himself uses them. These are not listed in our regular spring catalog, and are not kept in stock at any of our agencies. All orders will be filled from Medina. If ordered early enough, however, they can be forwarded to any one of our branches for redistribution. If you are going to try a few of these hives the coming season, we earnestly urge you to order early before the rush season comes on.

PRICE LIST OF HAND DIVISIONAL HIVE AND PARTS.

We have had numerous calls for divisional hives just as Mr. Hand uses them. We will not list them in our catalog for the coming season, but will make them up to supply on special order, to those who desire to try them, at prices in table below. The outside dimensions being nearly the same as the regular Dovetailed hive, the regular covers and bottoms may be used.

| Each section is 19⅛ in. long, 5⅛ in. deep outside; upper portion of side removable with clamps to hold it in place. Sections used are 4¼x4¼x1⅛ plain, split three sides. Furnished in both eight and ten frame size. | Designating or Short Name | Nailed and Painted Each | In Flat | | |
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| Hand brood or extracting section, including the frames, springs, clamps, and full sheets comb foundation | Hand 0-8 | 1 30 | 85 | 4 00 | 38 |
| | Hand 0-10 | 1 40 | 95 | 4 50 | 43 |
| Hand comb-honey section, including section-frames, and fences; no sections or foundation starters | Hand 2-8 | 75 | 60 | 2 75 | 30 |
| | Hand 2-10 | 80 | 65 | 3 00 | 35 |
| Hand comb-honey section, including section-frames, fences, sections, and full sheets foundation | Hand 1-8 | 1 45 | 1 00 | 4 75 | 35 |
| | Hand 1-10 | 1 55 | 1 10 | 5 25 | 40 |
| Hand four-section hive including two brood and two comb-honey sections; no sections or foundation starters | HandCE8822-8 | 3 50 | 2 65 | 12 00 | 180 |
| | HandCE8822-10 | 3 75 | 2 90 | 13 25 | 190 |
| Hand four-section hive including two brood and two comb-honey sections with sections and full sheets foundation | HandCE0011-8 | 6 30 | 4 25 | 20 00 | 200 |
| | HandCE0011-10 | 6 75 | 4 70 | 22 25 | 210 |
| Hand sectional super, no inside fixtures, including clamps nails, and flat tins | Hand Super-8 | 40 | 30 | 1 25 | 22 |
| | Hand Super-10 | 43 | 32 | 1 35 | 24 |

Hand brood-frames, 4⅞x17⅝x1⅜; ends, 1⅜x$\frac{5}{16}$; top, $\frac{13}{16}$x⅜; bottom, ½x¼ ... $2.00 per 100 in flat; $18.00 per 1000
Hand section-frames, 4⅞x17⅝x1⅛; ends and top, 1½x¼; bottom, 1½x⅜..... 2.50 " " 22.00 "
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And last from 5 to 21 years

Tin 4-in. Smoke Engine 3½-inch 3-inch 2½-inch 2-inch Wonder
$1.50. $1.10. $1.00. $90c. 65c.
Per mail on receipt of price

**Bingham Smokers.**

T.F.Bingham
Farwell, Mich.

# NEW GOODS! BIG STOCK!

**New Warehouse** **Root's Goods**
**Prompt Shipment** **Low Freight**

EVERYTHING
FOR THE BEE-KEEPER AT
SAVANNAH, GA.

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
**241 BULL ST. SAVANNAH, GA.**

# NEW ENGLAND BEE-KEEPERS

WE ARE HEADQUARTERS FOR

## Bee-supplies

If you wish to secure a good harvest of surplus honey you should have your supers on hand and ready to put on the hives when the honey-flow begins We have a complete stock of Supers, Sections, and Foundation on hand, and can supply your wants promptly. Send postal for price list of

## Bees and Queens.

**W. W. CARY & SON**
**LYONSVILLE, MASS.**

# Root's Goods and Root's Prices

but *a location* hundreds of miles nearer to *New England Bee-keepers* than the Root factory. The best shipping facilities and a large assortment of hives, sections, books, tools, etc., ready for shipment.

**Geo. S. Graffam & Bro., 47 Main St., Bangor, Me.**

**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **Boston**

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**

FOR SALE.—It will pay to get our special proposition.
A. G. WOODMAN & CO., Grand Rapids, Mich.

## ROOT'S BEE-SUPPLIES

**AT SPRINGFIELD, MASS.**
New Goods. Free Catalog. 'Phone.
**F. R. DANIELS, 117 FLORENCE ST.**

# GLEANINGS IN BEE CULTURE

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### RIDPATH'S HISTORY OF THE WORLD.

Most people who like to read at all are pleased with a well-written history. It is, therefore, a pleasure for us to state that a famous historical work, "Ridpath's History of the World," is within the grasp of all readers of GLEANINGS, even those of somewhat limited means (see page 723 of this issue). Our idea is, a good many will avail themselves of the offer made by the Western Newspaper Association, even in these somewhat panicky times, and in a presidential year when political news is at a premium. Rural dwellers where books are scarce will find this set a perfect storehouse of historical information. Many a leisure hour may be profitably spent in reading them; and one who reads with care will soon possess the foundation of a liberal education at a very small cost. Any one who reads this work might pass for a person of superior education. Ridpath's is a history of great value, well written and easily understood. Nothing will more quickly broaden a man's or woman's intellect than a careful study of history, more especially world history. He or she is bound to study geography, ancient or modern, and in this way they become sympathetic with all that goes on all over the world.

### ELECTRIC HANDY WAGON.

There are few more useful things on a farm than a Handy wagon. It will stand an immense amount of wear and tear under very trying conditions; besides, it is easy to load and unload as compared with a high wagon. One of the pioneers in this line of manufacture is the Electric Wheel Co., of Quincy, Ill., doing an immense business in constructing wagons and wheels, and whose advertising has appeared in these columns for a long time without a word of complaint. They make a specialty of supplying wheels to farmers and others who desire to change over their high wagons to low-down. Being all steel these wheels are much more satisfactory than wooden ones, and it would pay many to change on account of the saving in repair-bills. Steel wheels will last a lifetime, and give the greatest of satisfaction all the while. Many steel-wheeled wagons are in use in tropical countries with a heavy rainfall, where wooden ones do not last long, and many are in use in dry arid countries such as Mexico and Egypt, and in both cases the electric steel wheel is a winner. They are made of enormous strength, so that one may literally move a house on a set of them, and, as a matter of fact, traveling houses for lodging men and other purposes do use them. To many of our readers who are users of wagons we can not do better than to ask them to write to the Electric Wheel Co., box 95, Quincy, Ill., asking for further particulars.


BANKING BY MAIL

4 Per Cent INTEREST

Compounded Twice a Year.

Assets of over one-half million and the management of prudent men of solid financial standing give this bank every element of safety.

Send to-day for particulars, explaining how you can open an account safely and conveniently by mail.

Under ordinary circumstances all or any part of your deposits may be withdrawn at will.

WRITE FOR THE BOOKLET TO-DAY.

THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

A. T. SPITZER, Pres. A. I. ROOT, Vice-pres.
E. B. SPITZER, Cashier.

# "Please Rush My Order."

The demand for goods following the cold period of early May will undoubtedly be very great. Orders will come to us with "Please rush" and "Ship immediately" following them.

## And we are going to do it.

We have four great railroad systems and three express companies to help us. They reach out in every direction. We also have the goods, an immense stock, and all "Root Quality." Send for catalog.

**M. H. HUNT & SON,**

LANSING, . . . . MICHIGAN.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department.

Washington Blvd. & Morgan St.
CHICAGO, ILL.

## HONEY WANTED.

Wanted to contract for 20 000 lbs. comb honey in shallow extracting-frames 5⅝ inches deep.

Requirements: Honey to be produced on full sheets of extra-thin super foundation, in shallow extracting-frames, not wired.

Grade: Same as first three grades in GLEANINGS grading-rules—Fancy, A No. 1, and No. 1 (all included as one grade).

Quality: Honey must be produced from clover, basswood, or raspberry.

Combs must be even and of uniform thickness—not over one inch.

Will furnish frames, shipping-cases, and carriers for re-shipping the honey.

Bee-keepers in Michigan or Ohio interested in this proposition, write, stating approximate number of frames you can furnish, and price wanted for the honey per pound, *net weight*, F. O B. Medina.

Address HONEY BUYER,
c-o GLEANINGS IN BEE CULTURE,
Medina, Ohio.

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

**HILDRETH & SEGELKEN,**

265-267 Greenwich St. 82-86 Murray St.
NEW YORK.

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NEW YORK HONEY-BUYERS.

We wish to speak a word in season in behalf of an old reliable honey-buying firm which we have known for a good many years, but which our more recent readers may not be acquainted with. We refer to the house of Hildreth & Segelken, 82 to 86 Murray St., New York, who have been buying and selling honey for a generation. They make a specialty of table honey for bottling, and sell large amounts of clover, tupelo, California sage, and other nice honeys, to the grocery trade. Being situated right in the largest honey-buying center in the world they are able to dispose of large quantities. New York is accessible to honey-shippers in all parts of the country and to the West Indies, Mexico, and South America.

WHERE SHALL WE SELL HONEY?

Many of our readers are nonplused when they attempt to sell their honey if it happens to be a little off-grade or of a kind that is not much esteemed in the local market. It is, therefore, a pleasure for us to say we have had advertising with us the National Biscuit Co., of Chicago, for some time, which is always ready to purchase just such honey at market prices. Many of our Southern friends who live far from the large manufacturing cities would find Chicago a more reliable and a more prompt market than one much nearer, but a slow buyer at low prices. We therefore cordially advise those of our readers who have any difficulty in disposing of their honey to correspond with the National Biscuit Co. You will find the complete address in their advertisement on page 673 of this issue. It is almost unnecessary to say that, financially, they are all "O. K."

THE UNIVERSITY OF MICHIGAN.

Any young man or woman who contemplates a professional career may be interested in the advertisement of the medical department of the University of Michigan at Ann Arbor. It will be found on page 712 of this issue. Some of our readers may not know that this university has enrolled in all its departments nearly 6000 students. The course of instruction is of the best, and its graduates occupy high positions all over this country. The medical school is presided over by Professor W. B. Hinsdale, M. D., a medical man of national reputation. The University of Michigan is famous for its kindly treatment of poor students making their way against odds, and, as a matter of fact, it is not a place for rich men's sons with plenty of spending money and little desire to educate themselves. For the farmer's boy it is ideal.

THE BEST LIGHT.

We do not know of any thing that adds more to the attractiveness of a modern home than a first-class light in every room. It makes day out of night, and adds very materially to the comfort of the inmates by allowing them to use the evening hours for work, reading, and recreation. Many imagine it is only the city folks who can enjoy such advantages; but as a matter of fact the rural dweller can enjoy them equally well as the citizen. Many do. The Best Light Co., of Canton, O., has solved the problem by their great lamps advertised in another column in this issue. One of these in any ordinary room will fill it with an effulgence that is elevating and cheerful. It should not be forgotten that they are not expensive, either to buy or to operate. They do not cost any more than an ordinary lamp, and are actually cheaper to maintain than kerosene lights. Write and see.

NOTICE TO QUEEN-BUYERS.

Several queen-breeders have written to say they are having trouble with some of their customers who seem to be in doubt as to what constitutes an untested queen. They somehow or other have obtained the idea that an untested queen is a virgin. This is not the case. An untested is a laying queen whose progeny have not been observed to see if they are pure-bred. Generally they are purely mated, but sometimes not, in which case the workers will be hybrids. A *tested* queen is one whose progeny are pure-bred, both worker and drone. An untested queen *may* have pure drones, and yet the workers from her are mixed. Unmated queens are seldom sent out.

BANKING MONEY BY MAIL.

Perhaps some of our readers may not be aware of the fact that the Savings Deposit Bank Company, which is one of our steady advertisers, does a business which extends from the Atlantic to the Pacific. It does not do a vast business like a city bank, but many prefer it because it is more secure. Country banks are safer because their investments are more reliable and solid; whereas stocks and bonds fluctuate very much in value. If your local bank is not very secure, or does not pay a fair interest on deposits, we think you can not do better than to correspond with the officers of the Savings Deposit Bank Company. They pay a very liberal rate on all deposits.

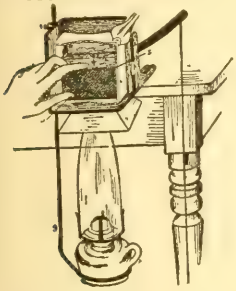
# LISTEN! DO YOU HEAR THOSE BEES WORKING?

Soon they will want room or will swarm.

Have you gotten your hives and supplies? If not, send your order at once. If you have The A. I. Root Co.'s catalog you can order from it. We sell their goods at their factory prices. We can fill your orders promptly now. Write for further information and our 40-page catalog.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTG. CO., MISSOURI.**

RAUCHFUSS PATENT COMBINED SECTION-PRESS AND FOUNDATION-FASTENER.



Used by the largest comb-honey producers.

# Successful Co-operation

means to the Bee-keeper:—The buying of the best Bee-supplies obtainable at the closest prices, and marketing of his products to the best advantage. Our association is co-operative, and organized for this purpose. We carry a large stock of high-grade goods such as:

**G.B.Lewis Co.'s** Hives and Sections — **Root's** Smokers and Extractors — **Dadant's** Comb Foundation

Send to-day for our free 48-page Illustrated Catalog.

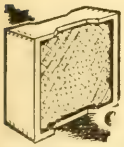
## The Colorado Honey-Producers' Ass'n

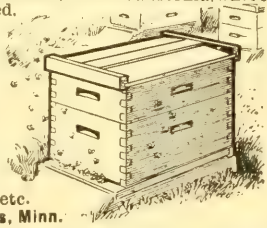
**1440-1444 Market Street .. .. Denver, Colorado**

# BEE KEEPING will be a profitable industry this season.

Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

## Get Ready Now for More Honey





**Let us send you our catalog** We are manufacturers and sell only our own make of bee-supplies. Minneapolis is the largest lumber-distributing point; the Mississippi river furnishes us power, and our organization and labor conditions are the best for economical production. **Send us an estimate of your requirements and let us give you prices** We have a large stock of standard bee-supplies on hand. Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Comb Foundation, Smokers, Extractors, Shipping-cases, etc.

**MINNESOTA BEE SUPPLY COMPANY, 23 Nicollet Island, Minneapolis, Minn.**

# This Coupon worth 25 Cents!

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

*New Subscribers Only.*

*Name*.....

*Postoffice*.....

*State*.....

**AMERICAN - BEE - JOURNAL**

A 32-page illustrated 50-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keeper. . . . Best writers.

**It will increase your Honey-money!**

If you will send us your name and address with 25 cents (stamps or coin) together with this coupon, we will send you a trial trip of our journal for 12 months. Order now, and let us begin with this month's fine number. Address

**American Bee Journal, 118 W. Jackson, Chicago, Illinois**

# THE SEASON FOR

I Hives

II Sections

III Foundation

IV Inside Fixtures

V Bees and Queens

VI Veils and Smokers

**THE A. I. ROOT COMPANY**

SYRACUSE :: :: :: NEW YORK

TO THE

## BEE-KEEPERS of CANADA.

We are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, "The best is cheapest."

**E. GRAINGER & COMPANY**

**Deer Park, Toronto, Ontario, Canada**

Canadian agents for The A. I. Root Co., Medina, O., U.S.A.

# APICULTEURS

des pays de langue Francaise
Nous vous informons que.

**L'Apiculture Nouvelle**

Revue mensuelle illustree,

est tiree de:

**Gleanings in Bee Culture**

augmentee et completee par des collaborateurs Europeens, reconnus comme Apiculteurs eminents.

L'abonnement d'un an est envoye franco pour tous pays de l'Union Postale, contre l'envoi par mandat poste de frs. 6.50 oú $1.30.

Un numero specimen, ainsi que notre catalogue francais de tous les articles de la

**A. I. ROOT CO.**

est envoye gratuitement sur simple demande, adressee a

**Emile Bondonneau,**

Agent General pour l'Europe et les Colonies

**de A. I. ROOT CO.,**

**142 Faubourg Saint Denis 142, Paris (10e), France.**

L'edition Francaise de l'A B C de l'Apiculture est egalement parue.

# THE JUNE REVIEW

Starts out with an article from Mr. Elias F. Covevou, in which he tells how to get the honey off the hives in a wholesale way, yet so manages as to

**KEEP IT WARM**

for extracting. He also illustrates and describes a most excellent uncapping-box, together with his eight-frame automatic extractor, driven by a gasoline-engine.

Mr. C. W. Dayton of California, takes up the matter of uncapping honey, handling it in a scientific matter, and describing three

**RADICALLY DIFFERENT STYLES.**

When to hold honey for higher prices, and when it is

**BETTER TO SELL**

than to wait, are vital questions, and hard to answer, but Mr. M. V. Facey, in his article this month, really furnishes the key whereby they may be solved.

Send ten cents for the June issue, and with it will be sent two other late but different issues, together with a

**SPECIAL OFFER**

showing how the Review may be obtained for this year and next at a very low price. The ten cents sent may apply on the subscription, if one is sent later.

**W. Z. HUTCHINSON, Flint, Mich.**

# And Still They Come

The following letter from one of our customers demonstrates in his own words the satisfaction our customers receive. Remember this is only one of the many thousands we receive.

*Griggs Bros., Toledo, O.:*—I received the hives and supplies to-day, which is the quickest I ever got goods after ordering. They must have come over in the Knabenshue's airship. They certainly are in fine shape—utterly impossible for any thing to have got lost.

Your shipping-clerk had them packed to perfection.

Respectfully, HUGH RICHARDSON,
Wood Co., O.

We should be pleased to list you as one of our customers if you are not one already. Bear in mind we handle ROOT'S GOODS exclusively, not the cheap shoddy stuff which others are trying to palm off under the pretense that it's "as good as ROOT'S." Try ROOT'S and you will be convinced. TOLEDO is the place to buy; we save our customers annually thousands of dollars in FREIGHT.

A complete line of Incubators and Poultry Supplies listed in our free catalog. Send for one.

Honey and Beeswax wanted in exchange for supplies.

**Special**

200 cases of 60-lb. cans, good as new, at 50 cents per can. Special prices in quantities.

**The Griggs Bros. & Nichols Co.**
**523 Monroe St. .. Toledo, Ohio**

# WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

**PITTSBURGH Headquarters for ROOT'S BEE-SUPPLIES at factory prices.**

Also Poultry and Dairy Supplies, Seeds, and Pet Stock.
Get our catalog and prices.

**Stapler's Seed Store** 412-414 Ferry St. **Pittsburgh, Pa.**

# SACKETT WRAPPERS

**(Transparent) FOR COMB HONEY**

NOW BEING USED BY LARGE PRODUCERS

Makes section look more attractive, and increases selling price. Any one can apply it and get 2 to 4 cents more per pound, and it costs you only a fraction of a cent per section.

**Price $3.25 per thousand sheets, printed with name and address.**

Samples free. Special prices on quantities.

**H. A. SACKETT, 147 W. 26th St., N. Y. City**

**Honey-cases for Sale.** Price 30 cts. per case. Two cans to the case. Both cans and cases in A-1 condition. For lots of 100 or more write us for price. **Michigan White-Clover Honey Co., Detroit, Mich.**

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLDG. CLEVELAND, OHIO.**

# Wintering Bees in Danz. Hives

FALL RIVER, MASS., April 10, 1908.

*F. Danzenbaker:*—Kindly send booklet about your smoker as per your ad. in GLEANINGS, current issue, and for which I thank you in anticipation. I had **ten hives, average good, last fall;** now I have **five that survived, and in Danzenbaker hives,** and as I write they are lugging in pollen in good shape. Yours, H. N. BRIGHTMAN, Fall River, Mass.

(The **defunct** bees were in **ten-frame Langstroth.**)

Pretty good! five Danz. lived, five L. died.

**F. DANZENBAKER, Patentee.**

# What's the Matter With Hilton?

## WHY!

He has got his new goods fresh from The A. I. Root factory, and his 1908 catalog, and wants you to send for one free—40 pages illustrating and describing Root's goods at Root's prices. Send him a list of what goods you want, and let him tell you how much they will cost you.

Cash or supplies for beeswax at all times.

**GEORGE E. HILTON**

**FREMONT, :: :: MICHIGAN**

Furnishing Bees and Supplies to Bee-keepers has been our business for 15 years.

# NEW YORK CITY

where our supply business is located, means quick shipments and low freight rates to our customers. Our prices are f. o. b. cars here.

Colony of Italian bees in an 8-frame D. T. hive, complete ..... $9.00
Italian queens ..... 1.00

*Catalog free.*

**I. J. STRINGHAM,**

Apiaries, Glen Cove, L.I. 105 Park Pl., N. Y. City.

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**

H. G. ACKLIN, MANAGER

**1024 Mississippi Street, St. Paul, Minn.**

**1884** **1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

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*By the Bee Crank.*

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# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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VOL. XXXVI JUNE 1, 1908 NO. 11

## STRAY STRAWS

DR. C. C. MILLER

STIMULATIVE feeding in Switzerland, as here, is esteemed differently, some finding it an advantage, others a damage.—*Schweiz. Btzg.*

AN AFTER-SWARM with a young queen issued before the prime swarm with the old queen in several cases at one of the Swiss stations.—*Annual Report*, 59.

INTERESTING to note that, in my watering-tub, the water covered by cork chips, on cool April and May days, many bees were on the cork where the sun shone, but not a bee on the shaded part.

SOME OF US who can not attend the National convention will have the sharp edge of our disappointment taken off upon learning that the report is to be taken by Geo. Angus, the man who has done such fine work taking reports at previous conventions.

G. M. DOOLITTLE, you say, p. 630, that nailed sections take "a little longer" to put together than one-piece. Don't they take several times as long? Why don't you get a good T super and have one-piece sections just as square and just as solid as nailed ones?

G. W. DEMAREE, years ago, gave a plan for extracted-honey men to prevent swarming, that is very much like the Coveyou plan, p. 640. Just before swarming time, put all brood above, leaving the queen below an excluder on foundation or empty combs. That's all.

H. M. JAMISON, p. 643, is very disrepectful to succeed with a three-inch space between top and bottom starters after my saying they would fail. But as others also succeed I must agree that I did not know as much as I thought I did. Now, what did Mr. Pryal do to his bees to make them be so naughty?

COMPARATIVE advantages of comb and extracted honey production are ably discussed in *Review* by R. L. Taylor and the editor. Both think that 50 per cent more of extracted than comb is about the fair estimate. But honey quotations in the same journal show the price for comb about 80 per cent higher than for extracted. Now, suppose my field furnishes 10,000 lbs. of comb for which I can get $1440. If I can get 50 per cent more extracted, that will be 15,000 lbs.; but at the difference of price named it will bring me only $1200. That difference of $240 is not balanced by the extra expense of sections, etc. Other factors are to be considered, however, and there is no doubt that, for many, extracted is decidedly more profitable.

FICKLE though it may be to do so, I must change my mind again about strengthening a weak colony by putting over a strong one. I tried two cases this year. I used wire cloth as a precaution; but when I came to lift the upper story I found the dead queen on the excluder. Unsealed brood above showed that the queen was not killed until some time after the wire cloth was removed. [The position of the queen at the time you found her would indicate that a mortal combat had taken place *through* the perforations. Queens will sometimes grab each other in deadly embrace. At such times it is possible for one to sting the other. It is rare, however, that they fight through the perforated metal, and in the case cited, therefore, we would say that it was only an exception that proved the rule.—ED.]

SOMETHING I never noted before, I learned this year, May 1. On that date we went to the Wilson apiary and watched the bees at the entrance of each hive. If they flew strong, carrying plenty of pollen, we judged them queen-right. Several did not fly well, and we opened their hives. They were strong in brood and bees, but very light in honey. They showed no sign of starvation, having enough honey for immediate use. One would have supposed they were the very ones that should have been out and hustling; but the scarcity of stores seemed to have a depressing effect. Is it possible that abundance of stores in sight encourages them to greater activity in flight, just as it is believed to encourage them to greater activity in brood-rearing? At any rate I prefer my bees should have a goodly surplus of stores on hand at all times. [If we remember correctly, reports have shown just the very thing here described. We should be glad to hear from others on this point; for if it be true that colonies on the verge of starvation will not seek nectar from the fields when it is to be had, it goes without saying that it would be good policy to give all the colonies a liberal supply of food in the fall.—ED.]

REPLYING, Mr. Editor, to your question, page 622, as to combs melting down in hives surrounded by corn and dense underbrush, I may say I know of no other untoward condition that would cause such melting down except that overhead the shade from closely planted trees was so dense that the sun never shone on the hives all day long. The first intimation I had of any thing wrong was when I saw the little stream of honey running on the ground. At that time I did not have hive-entrances as large as now, or there might have been no trouble. But there was no trouble with hives that stood out where they had the advantage of any passing breeze. [We infer, then, that the cause of melting down was due to a combination of too much underbrush close to the hive, and too small an entrance. Without

the underbrush, and with such entrance, the combs would not have melted down, you say. We should infer that, had the entrance been larger, even with the underbrush, there would have been no trouble. If that be true, it goes to prove that, with a large entrance, and an Alley trap over it, there would be no breaking-down of the combs. In this we assume that the Alley trap would be the equivalent of the underbrush. —Ed.]

Louis Scholl, replying to your question, p. 629, I never had either of the troubles from wide bottom-bars that you mention. Before the first comb is taken out, the removal of the dummy makes sufficient room so that never do "the wide bars cause the bees to be rolled over the combs of the next frames." Perhaps you use no dummy. The bottom-bars do not "stick together" "when the frames do not hang quite true" because it never happens that the frames do not hang quite true. They are exactly spaced by nail spacers, and a nail in the end-bar, 2¼ inches from the bottom, makes the spacing just as true at the bottom as top. Perhaps your bottom-bars are not thus spaced. [Day before yesterday, May 14, owing to the rush of honey from fruit-bloom we found it necessary, at an outyard, to give extra room. In the case of some strong colonies having extra wide bottom-bars, we noticed that they were stuck together with great chunks of propolis so that it was difficult to pull the frames out; and as the frames were removed, a taffy-like glue stretched out in strong strings. This attaching, however, was only by the Caucasians and the Caucasians crossed with Italian blood; and if one were to use this race and their crosses he might be compelled to use both narrow end-bars and bottom-bars, and perhaps get along without self-spacing devices.—Ed.]

"Much labor can be saved in the critical time of the honey-flow if there is a superabundance of supers and combs," *Review*, 151. Suppose I average one year with another a surplus of two supers per colony. Will that number in readiness be a plenty? But what if an extra good year comes? Suppose the best year in the past gave me five supers to the colony. I might call that an abundance to have in readiness, but it would take about another super to be a superabundance. Yes, I believe in superabundance, and, as a matter of fact, I generally have in readiness more than six supers to the colony. [If ever a bee-keeper feels like kicking himself, metaphorically speaking, it is when he has been so shortsighted as not to have a sufficient number of combs or supers ready for a good honey-flow. By the rush of orders that have been coming in, we imagine that the fruit-bloom this season took a great many by surprise. About every two or three years the supply-dealer and the manufacturer find themselves swamped with orders simply because bee-keepers do not or will not order in the fall, thus getting the benefit of a discount and the further advantage of having goods ready when needed. It may be said that the supply-dealer and manufacturer should have a large stock in readiness for rush orders. That may be true; but it would be impracticable to have warehouse capacity sufficiently large to take care of the exceptional seasons.—Ed.]

# Editorial

As we go to press we are pained to learn of the death, on May 16, of Mr. D. E. Merrill, of the W. T. Falconer Mfg. Co., Jamestown, N. Y. Particulars will be given in our next issue.

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Mr. Orel L. Hershiser, of 493 Woodward Ave., Buffalo, N. Y., has been recently elected to life membership in the Buffalo Society of Natural Science. This came unsought and entirely unexpected to our friend. It was due to certain lectures that he has given before that organization.

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### CROP REPORTS.

If we may judge by orders that have been coming in, as well as by the work of bees in our own locality, this has been a very remarkable year for fruit-bloom honey in the northern belt of States. While this honey will not reach the market, it will be the means of putting the brood-nests in fine condition for the clover flow yet to follow. The frames will be full of brood and honey, and the new flow from clover will necessarily have to be put in the supers.

The reports from other parts of the country have been quite encouraging, as a rule. Briefly, they are as follows:

ALABAMA.

Prairieville.—White clover in bloom, but weather too wet and cold.

CALIFORNIA.

San Diego.—Not very good prospects for crop along the coast. In the mountains a good crop is expected.

Surrez.—No honey, many bees dying.

Ventura.—Dry weather and frost checked the growth of sage, therefore no prospect for honey.

CANADA.

Marchurst.—Backward spring, but prospects good for clover.

ILLINOIS.

Lawrenceville.—Bees swarming early.

Royal.—Bees beginning on white clover.

INDIANA.

Madison.—Good prospects for a crop.

Huntington.—Necessary to feed to prevent starving; prospects good for white and alsike clover.

Wolcottville.—Colonies very strong.

IOWA.

Marshalltown.—Good rains; white clover everywhere; good prospects for a crop.

Kalona.—Cold weather causes great loss of field bees.

Bloomfield.—Heavy rainfall insures good white-clover bloom.

KENTUCKY.

Cornishville.—White clover abundant. Good prospect for crop.

Boyd.—Honey prospects extra good. Fine crop of alsike and white clover.

MISSOURI.

Bluffton.—Weather wet; good prospects for clover.

NEBRASKA.

Bradshaw.—Bees working in supers.

NEW JERSEY.

Frenchtown.—Weather very unfavorable for honey and brood-rearing.

NEW YORK.

Middleburg.—Weather wet, but lots of brood and young bees.

Bedford Station.—Weather cold and wet.

North Branch.—Good prospects for a crop.

OHIO.

Shanesville.—Good prospects for a crop.

Athens.—Bees swarming, and working in supers.

Belpre.—Bees swarming, and good prospects for white clover.

Akron.—Bees swarming very early.

OREGON.

Hillsboro.—Coldest spring in many years. Half the bees are dead on account of spring dwindling and starvation.

PENNSYLVANIA.

Liverpool.—Good prospects for a crop.

TEXAS.

Orange.—Good flow of excellent honey.

VIRGINIA.

Lindsays.—Good prospects for a crop.
Howardsville.—Colonies strong, but the weather is cold.

WEST VIRGINIA.

Ravenswood.—Good prospects for a crop. Bees swarming.

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### AN INJURY TO THE EDITOR'S EYE.

E. R. ROOT will be compelled to beg the indulgence of his readers for some two or three months to come, perhaps, because of an injury to the right eye. He is under orders not to read any proof or printed matter, nor manuscript, for some months to come, and to give both eyes a rest until the injured member can recover from the shock.

As a warning to others, we would say that the injury was due to looking at a strong arc light for the fraction of a second, at too close a distance. While the injury is, to a certain extent, permanent, it probably will not entirely disqualify the right eye from service after it has been given a rest. In the mean time all manuscript is read to us, and all other matter, as heretofore, is dictated. Owing to the fact that we can not use our own eyes our subscribers are requested not to pass severe judgment in case the editor should say what he does not mean, or fail to give the exact meaning he intends to convey.

But there is no great loss without some small gain. We are privileged to go outdoors, and we are now finding recreation by working with the bees, helping the boys every now and then, for the specialist does not believe that long-range vision, provided blue glasses be used, or a hasty glance over a frame of bees, will do any harm, but we must not look for eggs.

The left eye, we are very glad to report, is entirely uninjured, and is in every way all right, but the use of it might affect the other eye.

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### CAUCASIANS EXCESSIVE BREEDERS OF DRONES; WHAT THIS WILL MEAN.

ONE of our correspondents, Mr. C. W. Price, in this issue, in uttering words of praise for the Caucasians states one thing that is not very much in their favor; and that is, they are inclined to raise too large a number of drones. We find this to be emphatically true in one yard where we raise Caucasians. They run excessively to drones in spite of the fact that we are using full sheets of foundation. If the cells are slightly elongated, drones are sure to be reared in great numbers. If there happens to be any drone comb built to fill out space in worker comb removed it will be solid with drone brood.

So far as the loss of energy in rearing drones is concerned, that is a small matter. At a yard where we have mostly Caucasians and some Italians, the Caucasian colonies will rear a hundred drones to the Italians one. This simply means that the Caucasians will run out the Italians in very short order; for if there were a hundred Caucasian drones flying to one of Italian, the whole locality would run to the black strain of bees rather than to the yellow. If, therefore, one introduces Caucasians in his yard for the purpose of experiment he will have to put on drone-traps and shave off the heads of the drone brood every now and then — otherwise the yard will run to Caucasians. If they should prove to be undesirable it would be unfortunate to say the least.

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### PLANNING WORK AT A BEE-YARD; EXCHANGING BROOD AND STORES.

A STRONG flow of honey was on from fruit-bloom — so strong, in fact, that we never saw as much nectar coming in, even from basswood. Colonies which, on the opening of the bloom, were on the verge of starvation, filled their hives jammed full of honey, ready for capping, in the short space of three days. Even nuclei made a wonderful showing. The question of giving room was one that required immediate attention. We had only a limited number of supers and empty combs at the yard. It was important to give relief where it was needed the most. We accordingly watched the flight of bees at the entrances of all the hives. From all those colonies where the bees were flying the strongest we removed the upper cover, leaving the thin board super-cover on top. Then we looked at the entrances of all the hives where there seemed to be the least doing, and turned their covers catacornered. This shift of covers was for the purpose of designating the hives. We then took a hasty glance into the brood-nests of every one of the hives of both the strong-working colonies and those that showed but little indication of field work. We thus found the exact condition of the strongest flyers and of the other sets. We now proceeded not only to make the strong help the weak, but the weak to help the strong. The former were made to give up their empty combs, if they had any, to the latter, exchanging unsealed brood for hatching brood. In the case of the very strong ones, where the hives were jammed full of honey, we put on supers. This done, we had the extra strong and the weakest to a certain extent equalized, the strong being given unsealed brood and empty combs from the weak, and the weak, on the other hand, being given sealed brood and combs jammed full of honey from the strong.

We now had left unexamined only the medium colonies in the yard. Some of them were not suffering for room, and when we went across them we marked them, and from those that needed room we took combs filled with stores, and exchanged them for empty or partly filled combs from the marked ones. When we got through the yard every colony had its hive filled full of honey of nearly equal amounts. The very strong ones had mainly unsealed brood, while the weak and the very weak had mainly sealed and hatching brood.

During this process of exchanging brood and stores it was necessary to keep open some seven or eight hives at a time. During all of our work the editor's eldest son was kept busy opening and closing hives, bringing back and forth combs and brood to and from the hives.

In this connection we might remark that a comparatively inexperienced man or boy can enable one good man to do almost two men's work; for the expert can furnish brains for the muscle of two men; and the result is a harmony of plan and of execution.

"NEW LIGHT ON FOUL BROOD."

In the *British Bee Journal* for April 30 and May 1 there is a general discussion of some new investigations made by Dr. Maassen under the above caption. It probably would not be interesting to give the whole of this, but we will here give the summing-up as found in the *British Bee Journal*, pages 183 and 184.

To sum up Dr. Maassen's important work, we find: 1. That three different organisms may produce foul brood, two of which are usually associated in different phases of the disease. These are *Bacillus alvei*, Cheshire; *Bacillus Brandenburgiensis*, Maassen (syn. *B. Burri*, Burri, *B. larvæ*, White); *Streptococcus apis*, Maassen (syn. *B. Guntheri*, Burri).

2. That when the disease attacks unsealed larvæ *B. alvei* is present, and in virulent cases it is also found in sealed brood.

3. That *Streptococcus apis* of "sour brood" is usually associated with *B. alvei*.

4. That *B. Brandenburgiensis* is found in the sealed larva only just before it changes to a pupa, and is frequently associated with *B. alvei*.

5. That the two bacilli are antagonistic to each other, and are constantly struggling for supremacy, sometimes the one and sometimes the other getting the upper hand.

6. That other bacteria are sometimes associated with *Streptococcus apis* which kill its cocci, so that bees are able to remove the dead larvæ, and in some instances during a good honey-flow the disease may be held in check or the colony become for a time cured.

7. That the disease in which either or both bacilli are present is equally infectious.

The editor of our esteemed contemporary seems to take the view that some of the conclusions arrived at by our own Dr. White, of the Department of Agriculture, are incorrectly drawn. We have carefully gone over this whole discussion, but we do not see that the conclusions are so widely different from those arrived at by Dr. White. Indeed, in many respects the work of the two men runs along in parallel lines.

For example, both find in the ropy type of foul brood the same bacillus, though under different names. Dr. Maassen designates it as *Bacillus Brandenburgiensis*. Another name is *B. Burri*, after Burri, a bacteriologist of note, while Dr. White calls it *B. larvæ*. By whatever name it may be called, all three of the bacteriologists agree that it is one of the pathogenic microbes found in ropy foul brood. Dr. White makes no claim that it is the *sole* cause, while Dr. Maassen appears to share the opinion that *B. alvei* as well as *Streptococcus apis* are also present and also pathogenic—that is, they are disease-forming. There is no contradiction between them on this point.

Again, while Dr. White has found *B. alvei* in the ropy type, so far as we remember it was only in the combination of black (non-ropy) and ropy foul brood. Dr. Maassen, on the other hand, seems to hold the view that *B. alvei* and *B. Brandenburgiensis* (*B. larvæ*) are both the primal causes, the one struggling against the other for supremacy, but *B. alvei* being more predominant in the unsealed stages of the dead matter, while the other seems to be more in the supremacy after the sealing.

This, in our judgment, goes a long way to confirm the statement made by Dr. White, who finds that *B. alvei* is always present in black brood which mainly manifests itself in the unsealed stage of affected brood, while *B. larvæ* is always found in ropy foul brood, which disease shows itself mostly in the sealed brood.

Again, Dr. White finds that the *B. larvæ*, *B. Brandenburgiensis*, or *B. Burri*, or whatever we may call the microbe, will not grow in ordinary beef gelatin for pure-culture work; but that it does grow in the juices of larvæ. Dr. Maassen finds a difficulty in propagating the *same* bacillus in beef gelatin; but, like Dr. White, he does find that it will grow in larval juices, and also in a product made from brains and albumen. Here again we have a harmony of opinion.

Dr. Maassen seems to take the view that *B. alvei* is always found in the ropy type of foul brood, while Dr. White finds it only occasionally when there is a combination of the two diseases.

It is not entirely clear to us that the black brood of Europe is the same as the foul brood of this country. The difference in environment may account for the difference in findings.

The summary of the whole matter is that Dr. Maassen believes that ropy foul brood is caused primarily by three microbes, the two most prominent being *B. alvei* and *B. Brandenburgiensis*. Dr. White inclines to the view that ropy or American foul brood is caused by *B. larvæ* or, what is probably the same thing, *B. Brandenburgiensis*; that *B. alvei* is not found in normal ropy foul brood, but he does find it invariably in black brood or what the Department has differentiated as "European" foul brood.

Speaking of American and European foul brood to designate respectively the old-fashioned ropy foul brood and black brood, some regard these qualifying adjectives as very unfortunate, because European foul brood is rarely found in Europe, but is very common in some portions of the United States; while American foul brood is very common in Europe as well as in America But we regard this question of English names as unimportant. At the present time there seems to be a divergence of opinion regarding the primal causes of ropy foul brood, while Europe seems to be silent on the causes of black brood.

As the writer has been unable to go over this entire discussion on the printed page for the reasons stated elsewhere, depending on his ears only, it is possible he may not have stated correctly the views held by American and European scientists.

*Later.*—We have gone over this whole matter again; and it is increasingly evident, first, that between the bacteriologists of Europe and America there is more and more an agreement in the findings. Second, that the real black brood, such as was found in New York, apparently does not exist in Europe except in combination with the ropy type of foul brood. The descriptions of the external characteristics, so far as we have been able to find them, do not indicate a black brood such as we have in America, but a modified form. If this be true, it will be very easy to harmonize to a great extent the variations in findings of the bacteriologists. We have every reason to hope that the time will soon come when the slight confusion now existing will be cleared up.

For the benefit of our European cousins we may remark that there is a very marked difference between what we have been calling black brood and the old-fashioned ropy foul brood. The difference in the character and odor of the dead larvæ is very decided, and this is also true of the effects. It is rarely true that the one disease is supplanted by the other, or that both are in the hive at one and the same time.

# CONVERSATIONS WITH DOOLITTLE

WAX SECRETION.

"I want to ask you a question or two, Mr. Doolittle, regarding wax secretion. It is calculated that a ten-frame Langstroth hive requires about 2 lbs. of wax to fill it with comb, is it not?"

"I think that is about the estimate, and it is not far out of the way."

"Then are you prepared to say that, when swarms are building their own comb, and filling the brood-chamber with brood and honey, other and similar swarms, which were supplied with full sets of ready-made comb, would store a surplus of 50 lbs. of honey?"

"I do not know that I fully understand what you are after; but I judge that you think the estimate of the consumption of 25 lbs. of honey to produce one pound of secreted wax is too high a figure."

"Cut it down to 25 lbs. surplus from the ready-made combs, as against nothing from those that built their own comb: what do you say now?"

"The claim put forth by some that it takes 20 lbs. of honey to cause the bees to secrete a pound of wax, and that the bees would gather 5 lbs. of honey while they were manipulating the pound of wax into comb, thus making an expenditure of 25 lbs. of honey for every pound of comb built in the hive, I have always considered a fallacy."

"Do you know upon what such calculation was based?"

"Upon Huber's experiments, I think."

"Then Huber must have been a careless experimenter."

"I should hardly want to say that. I think there is no question but that the experiments of Huber, proving that it took 20 lbs. of honey to produce one pound of clean (wax) comb were correct, under the conditions by which they were tried; but it must be remembered that bees are thrown out of their normal conditions when they are confined to their hives so that they may receive no benefit from the fields; and when not in a normal condition there is no accounting for what they will do. Most of our practical apiarists of the present time have been led to believe that the real cost in honey to produce one pound of clean comb, when the bees are in a normal condition, is from 5 to 10 lbs. This being the case, the true answer to your question would be that you should secure from 10 to 20 lbs. of honey extra from a swarm hived on a full set of combs, in a Langstroth ten-frame hive."

"Then that is as you believe?"

"From my experience covering about forty years, taking an average, this difference is about right."

"Well, you and I can not agree."

"How is that?"

"There is an important part which has not as yet been touched upon at all."

"To what do you allude?"

"To the fact that bees secrete wax during any and every heavy flow of honey, whether the hives have comb in them or not. Let me tell you some of my experience. I have been extracting honey from a part of my colonies during the past four years; and when honey was coming in abundantly I have seen workers in extracting colonies that were laden with great pellets of wax scales sticking out on the under side of their abdomens. I have caught such bees, and with the point of my knife have pulled off these pellets of wax, piling the eight pellets together, when I had enough coming from one single bee to build a good part of one cell if not the whole of it."

"But that wax was probably to use in lengthening out the cells and capping the honey a second time, after you had shaved off the cappings and a part of the comb the time before, when extracting."

"Possibly some of it might have been used in that way. But I had not finished. At such times I have seen wax used to plaster on the front of the hive, to chink cracks, putting great knots or knobs of it here and there, where there seemed to be no purpose other than to get rid of it in some way. Aren't the bees silly to eat honey from which to make wax just to waste? If the cost of wax is 5, 10, or 20 lbs. of honey, it would seem to me the bees should know enough to store that away for future use when they have the combs all provided, rather than use honey to secrete wax when there is no comb to build."

"Then your idea is that the bees secrete wax during a heavy flow of honey, and do this without regard to whether there is any comb to be built or not."

"That is right. And I consider the filling of a hive with foundation, of combs already built, only a waste of the cost of the foundation, and the time and trouble of using it."

"And I think you are a little hasty in your conclusions. Listen a minute. There is an element which comes in right here that is well worth considering. Swarms hived in full ten-frame Langstroth hives, with empty frames, or those having only starters in them, are almost sure to put much of the wax you are talking about into drone comb, especially if the queens are not very vigorous; and this drone comb is against the best usefulness of such colonies for all time to come, so long as those combs are occupied by bees; and to do away with this drone-comb nuisance, a few combs to insert when the bees persist in building drone comb are a bonanza, even if they cost 50 lbs. of honey to build five of them."

"Why do you specify *five?*"

"Listen to this: Hive your swarms on five empty frames, having only starters in them, putting on a super of sections when hiving, and the bees will build out the five combs nearly if not quite all the worker size of cell, if their queen is good for any thing. Now take out your division-boards, or dummies, which have been used thus far, and fill out the hive with five nicely built worker combs, and you have things as they should be, and something which will be a pleasure to you as long as you and those combs live together."

"But you don't think all the wax will be saved in that way?"

"There will be no loss of wax when working in this way provided you have the surplus arrangement partly filled with comb foundation, as

any knobs of wax not needed below will be used in building combs in the sections. In this way we kill two birds with one stone."

# General Correspondence

## HONEY-HOUSES.

### A Description of Some of the Honey-Houses in Northern Michigan and an Outline of the Methods Used.

BY E. D. TOWNSEND.

As our yards are all located on rented ground, so that frequent moving is necessary, we build the honey-houses in sections. The floor is in halves; the sides and ends are separate, and bolted together with two bolts in each corner, and each side of the roof is built independently of the rest of the building so a half can be taken off at a time for moving.

A 32-inch door is put in one end, without screen or glass, for door-screens attract the robbers so that some of them are sure to dodge in when the door is opened. Centrally located on both sides of the building, next to the plate, window-holes are cut, and covered with wire screen nailed on the outside with lath strips to hold it down. These window-holes are boarded up with a framework which slides to one side to let in the light. As all the work at the outyards is done during warm weather, no glass is necessary.

The framework above is of 2×4 material, planed on all four sides, while that below the floor is 2×6, not planed. The siding is of single boards planed on both sides and nailed up and down; the roof-boards are the poorest of the same material. See Gleanings for Oct., 1906, page 1242.

TAR BUILDING-PAPER TO LINE BEE-PROOF HONEY-HOUSES.

To make our honey-houses bee-tight we have tried several kinds of building-paper, but have decided that tar paper is the best. We put it on with lath, being sure to have it lap well at the joints, and to fit the corners perfectly. Wherever there is likely to be a bee-space or opening we are especially careful. We have never yet been able to find a carpenter who would do the work well enough, and we believe that the bee-keeper should attend to the papering himself, therefore, whenever possible.

A honey-house papered April 1st will have lost most of the smell of tar by the time much work is done, so those who do not like the smell need not hesitate, for it is of short duration.

Bees, mice, and ants dislike tar paper, and hardly ever go near it. The mice never gnaw it and let in bees, as they will do if other kinds of paper are used. Some of our honey-houses have not had a mouse in since tar paper was used; but they make nests of the white building-paper we used to use, and some of the houses had to be repapered each year. The worst mistake we ever made was to paste on the paper. The mice seemed to follow us and eat the paste as fast as we could put it on — of course, tearing the paper meanwhile. When the house is lined with tar paper we never see any ants.

THE CHAPMAN HONEY-HOUSES.

At his home yard Mr. Chapman has a fine new honey-house and storeroom, with his bee-cellar under it. As this is his headquarters, much of his material is kept there until wanted at the outyard. While this house has all of the latest appliances to be found in most home-yard houses, I want to talk most about the one at his outyard, which is, perhaps, ten feet square. There is room only for the operator, extractor, tanks, etc., so the team is hitched to the big wagon, and the honey-cans and such other things as will be needed for extracting are hauled to this yard in the morning. The honey is taken off the hives, extracted, strained through cheese-cloth, canned up, and set out of doors until the day's work is done, when the bees will have stopped flying. The team may then be driven to the house to get the honey, for it is drawn home each night. By this plan the honey is canned as fast as extracted, so all of the aroma and best flavor are retained. Such a plan is a very good one where the outyard is so near that the honey can be drawn home every day. Some of our own yards are worked much on the same plan, although we do not have to draw *all* the honey home each night, having plenty of room at the house to store it.

Mr. Chapman, not having room in the house to store the combs after extracting, sets them out for the bees to clean up immediately. A load of the wet combs just extracted is taken out to one side of the yard, and placed criss-cross for the bees to clean. The writer happened on the scene one July day when the extracting was going on; and as the flow from raspberry had ceased, there was nothing for the bees to do but to carry in this honey from combs. While there seemed to be quite an uproar, the honey was being taken without any sign of robbing.

When the season is over, as there is no place in the extracting-house to store the tools over winter they are all drawn to the main house at the home yard, as are the empty combs after they are cleaned of the honey that is left on them after extracting.

THE COVEYOU HONEY-HOUSE.

Mr. E. E. Coveyou, like many of the outyard bee-keepers of Michigan, uses some of the abandoned lumber-camp buildings for his honey-houses. He does not try to keep the bees from entering his honey-house, but plans to do the work at a time when the robbers are not likely to bother much. The honey is taken off the hives during the day and piled up in the yard, being covered so the bees can not get to it. Then, toward night, after the sun has warmed the honey, it is taken into the honey-house and extracted with his big eight-frame automatic extractor. It does not take long to do this, and the work is done so late in the day that the robbers do not get started much before it is too late for them to fly. After all the honey that was taken off is extracted and canned the combs are piled up and covered so the bees can not get to them. The extractor and uncapping-box are also closed bee-tight. This is not a very desirable way of han-

dling a crop of honey, and is the only flaw I have been able to find in Mr. Coveyou's methods. However, I understand that he will abandon this plan next season for another one which I will describe later.

KIRKPATRICK'S HONEY-HOUSE.

Mr. Geo. H. Kirkpatrick, Rapid City, Mich., who has several yards of bees in the raspberry region, builds all his extracting-houses small, and depends on storage room elsewhere for his honey and combs. His honey-houses differ from Mr. Chapman's in that he puts the honey he uses into a large honey-tank, instead of directly into the cans. The houses are built about 12 feet square, bee-proof, and about a third of the floor space at the back end is let down three feet lower than the main floor. In this lower part are located the tank and scales, so arranged that the honey from the extractor runs directly into the tank, and from this tank into the 60-lb. can resting on the scales. The honey is all extracted after the season closes, and is in good condition to can as soon as extracted; but it is left in this large tank over night, then skimmed and drawn from the bottom. This makes very clear nice-looking honey, and handled this way it is of good quality. While Mr. Kirkpatrick is a convert to the better way of canning the honey direct from the extractor, he has not changed his outfits yet, but probably will do so during the coming season.

THE HUTCHINSON HONEY-HOUSES.

The Hutchinsons have their outyards near some of the abandoned lumber-camps, so they build over the camp-buildings for a honey-house. Usually these camp-buildings are much larger than necessary, and partitions are run across to make the bee-proof honey-room. Besides the main extracting-room, there is a small room of suitable size for heating the honey before extracting. This room is lined with paper, to retain the heat from the large oil-stove used to heat the honey. The honey is taken off with escape-boards, and stored in this room where this oil-stove is lighted the night before they intend to extract, with the result that, in the morning, the honey is in much better shape than that just from the hive. Honey just from the hive, especially on cold mornings, does not extract very clean, and requires a long turn of the extractor to get it at all.

A few times I have warmed the honey to be extracted; and if things are arranged right, there is no other way that is so satisfactory. The honey is just a little warmer than that from the hive in the hottest weather, which makes it about as thin as water, and of course it is thrown out of the combs much easier, and the combs are extracted very dry.

EXTRACTING IN THE OPEN AIR.

At one time I worked ten swarms of bees on shares, for a neighbor, and I did the extracting out of doors under a shade-tree. Every thing was kept covered up as much as possible to prevent robbing; then a smoker was kept going, and the assistant would keep the smoke where it would do the most good. This yard of bees had not been handled, and the colonies had not learned the robbing habit, so they were not very bad to commence with.

THE IDEAL HONEY-HOUSE.

The ideal honey-house for a hundred-colony bee-yard would be a building 18 × 24, lathed and plastered on the inside. It should be built at the lower edge of the bee-yard, to facilitate wheeling the honey from the yard. It would be better if the gentle slope of the ground were to the south or southeast. I would build the end of the building toward the bee-yard, with a good wide door at both ends. The ground at the back should be about six feet lower than the front, to allow a platform wagon to stand with the top on a level with the honey-floor for convenience in loading and unloading honey, supplies, etc.

Two-thirds of the floor on the end toward the front or bee-yard should be built on a level with the ground at this point for convenience in wheeling in honey; then the third toward the back end would be built two or three feet lower than the front or main floor. The front floor would be for the main workroom where the extractor, uncapping-box, and combs are kept. The lower floor would be for the honey-tank, scales, honey-cans, etc., and the distance this lower floor should be below the main floor would be determined by the height of the tank to be filled; for the extractor would be set at the edge of this upper floor, with the gate projecting over so the honey could run direct from the extractor into the tank, then from the tank to the 60-lb. can on scales. The shallower the tank, the less difference there would have to be between the two floors.

Remus, Mich.

## BEE-KEEPING AMONG THE CELTIC MONKS OF GREAT BRITAIN.

### Why Candles of Beeswax are Used for Sacramental Purposes; a Church Built by the Bees.

BY FATHER MAURUS MASSE, O. S. B.

As in the honorable mention you make of us in the January 15th issue, page 83, you do not seem quite certain whether we read GLEANINGS and the A B C, I am penning these lines to assure you that we do read them both with great interest and pleasure. What you say of European clergymen as being often ardent disciples of the bee-keeper's art is quite true, and my researches in that line lead me to conclude that it was still more so centuries ago; for then it was not only pleasure and profit but necessity that prompted them to keep bees. To mention only the Celtic monks of Great Britain, and, later, of Armorica (whither they were driven by the Saxon invaders), for whom I may be pardoned for taking a special interest as one of their race and profession, many a quaint story is related in ancient chronicles about their apicultural successes. Thus we find the following interesting account of the exchange of their products with the Parisian abbeys:

One day St. Samson, abbot and bishop of Dol (in those times abbeys very often became bishoprics) and the bishop of Paris talked together about their monasteries. St. Samson mentioned that his monks were such good managers, and so careful of their hives, that besides the honey, of which they had an abundant supply, they had more wax

than they could use in the church during the whole year; but that the country, not being fit for the growth of vines, they had a great dearth of wines. "And we, on the contrary," said St. Germain (bishop of Paris), "have vineyards in abundance, and a much greater quantity of wine than is wanted for the supply of the monastery; but we are obliged to buy wax for the church. If it pleases you we will give you every year the tenth part of our wine and you shall furnish us with wax to light our church." Samson accepted the offer, and the two monasteries mutually accommodated each other during the life of the saints.

I have gone to some length to quote this agreement, because it illustrates very well what must have been the custom in most Celtic monasteries of that period, not excepting Buckfast Abbey, as the extant records would imply; for this old abbey had a Celtic origin, and is believed to have been founded in the sixth century by the great British saint, Petrock, son of a Welsh king. St. Samson, spoken of above, was a compatriot and an intimate friend of our founder, and on his way to Armorica came to Devonshire to spend a few days with St. Petrock, when, I feel sure, the bees formed an item of their conversation, just as it happens now when two bee-keepers meet. Another British monk of the same period (sixth century) was so celebrated as a bee-keeper that popular tradition invested him with the glory of having introduced bees into Ireland. This predilection for bees went so far that in monasteries, which, by the will of their founder, were sometimes to remain without earthly possessions, yet was there an exception made in favor of bees, of which they could have an unlimited number. This should not astonish us if we bear in mind that monks like to consider their monastery as a "Holy Land" where floweth the milk and honey of spiritual graces and consolations; and the analogy is brought home to them more forcibly by the presence and taste of the material honey. Ancient writers even compare the monastic home to the bee-hive, because, as says Virgil, "Innatus apes amor urget habendi," so "the monastery was a hive of piety and industry wherein the monks gathered in abundance the richest honey of religion, literature, and science, to be freely dispensed to those around them."

But, besides such mystical considerations, there was, as I said, the reason of necessity. You are aware, no doubt, that in the Catholic Church beeswax candles are extensively used for divine services, and their liturgical meaning is to represent Christ, the light of the world. No other material could replace beeswax, which has a noble and beautiful mystical signification; for, being produced by a virgin insect, it represents the body of Christ produced by a virgin mother; hence the great consumption made of that precious substance for church purposes. It is marvelous to read what Anglo-Saxon writers tell of the splendor of divine worshjp at the times when Briton and Saxon alike flocked to St. Mary's Abbey on great festivals; of the countless waxlights that made night as bright as day; and well may we ask from what source they did draw all that beeswax. I believe it was produced in great quantities by clergymen themselves, as the instance of St. Samson mentioned above testifies. This was so well known that the ancient laws of Spain made the provision that clergymen might pay their taxes in wax instead of money if they chose to do so.

An instance somewhat similar is connected with this abbey. By a charter (of which the original is still extant) given to the monks of Buckfast in the year 1216 we learn that the (then) abbot agreed to give on the patron feast of our abbey one pound of beeswax to all our knightly benefactors in order to keep alive the memory of their gifts. The distinguished company, before signing that charter in our chapter room, had, no doubt, visited our garden and had seen a good range of bee-hives as now, and nothing, therefore, more natural than that they should suggest an annual pound of beeswax as a recognition for their liberalities. We are not left to ignore, however, that a lady disagreed to this, and, when the document was brought to her to be singed in the guest-house (for, according to monastic customs, ladies are not admitted within the enclosure), she asked to have a pair of white gloves instead of the beeswax, which request was easily granted, as Buckfast Abbey was then the great center of woolen manufactures in Devonshire. Perhaps the reason that beeswax can now be gotten so easily causes us to cultivate bees on less extensive lines. But still, even now I know of more than one Lord Abbot who does not think it below his dignity to look after these interesting little creatures, and within the last two years it has been my own privilege to help in introducing bees into two newly established monasteries.

The following is a curious example of what may be done with bees. I know of a clergyman who set twelve stocks of bees on a piece of land granted to him on lease. They prospered so well that in a remarkably short time he not only paid for the land, but also built on it a nice parochial church almost entirely with profits derived from his bees. This has set me thinking how much I wish we could do the same here, for we have just started rebuilding our old monastic church to the memory of the late Lord Abbot who perished last August in the wreck of an Italian steamer while on his way to visit our American brethren. He loved the bees so much that, on his tour to the United States two years ago, he brought us some seeds of your bee flora. This will explain why the present writer is anxious, that, in their turn, these sweet pets should contribute in some way their little quota to the erection of the monument in memory of the popular and beloved deceased. But sharing not in their capabilities the same confidence as the above-mentioned clergyman, he has deemed it more prudent to exchange temporarily the fragrant air of the apiary for the dusty studio, as illustrated in the enclosed photo.

Our apiary is beautifully situated in a valley, and a more ideal place could scarcely be found for bees. It is protected on all sides against the wind, and is, during spring and summer, like one of nature's Edens. One side of its secluded precincts is wooded with the fragrant thuja; on the west and north is a long low wall of which the stones are intermixed with *Arabis Alpina* and *Aubrictias*, which, forming a solid mass from end to end, descend to the ground like a graceful carpet, while their snow-white cross-shaped flowers

spread their chaste perfume all about. Behind and above that wall, as if to shelter the sweet fragrance from the north wind, rise the golden broom and roses with their delicate colors, while gorgeous hues of wild flowers and ferns fringe with beauty the banks and braes and streams around. Two rivulets of clear water crooning under the ferns and trickling down from stone to stone, in their gentle embrace enclose the apiary, mingling their tiny voice with the aerial hum of the busy throng, whilst hard by in the dim shadow of its woody bank a mighty river, the Dart (called for its picturesqueness the English Rhine) winds along its poetic course. A few yards further lies a placid sheet of water, beautiful beyond expression, in which monstrous salmons weighing from 15 to 20 lbs. show us their glittering silvery scales. On the northwest of the apiary, a mile away, appears the imposing cone-shaped Hembury Hill, once a Roman camp, and historically connected with St. Mary's Abbey at the time when the heroic Britons made of it their stronghold against their Saxon invaders. From its summit may be viewed a panorama of matchless beauty, especially toward the venerable abbey among whose possessions it was reckoned centuries ago. Every year in late summer our bees animate its crimson-colored crest with their thousand thanksgiving hums.

The valley of the Dart is one of the loveliest parts of lovely Devonshire, and its nameless charm casts its spell even on Americans, of whom several come every year to spend their holidays under the shadow of the old abbey.

Buckfast, England.

## THE TROUBLES OF AN AMATEUR BEE-KEEPER.

### A Fools-day Experience.

BY F. DUNDAS TODD.

[It will be remembered that Mr. Todd is the gentleman we introduced in our issue for April 15, page 496. He has written a series of articles telling the experience of an amateur. The story he tells is very interesting, and will bring many a smile from those who have "been there" too. While it is the experience of an amateur, we feel sure that even the veterans, if they will read down the first paragraph or two, will be compelled to read the whole story.—ED.]

Trouble and bee-keeping are, in my experience, synonymous terms. I bumped into trouble the very instant I bought my first hive, and have been in it more or less ever since. Any man who can not enjoy troubles, who is not happiest when he lives and sleeps with them—aye, dreams of them—has no business to be a bee-keeper. I never yet cared for a pastime that anybody could make a big success of without mental effort; and possibly it was because bee-keeping looked so simple that I passed it by when choosing a new hobby. In a way bee-keeping was thrust upon me, and it has filled up at least four hours of my day or evening ever since I got the shock.

My family have been for years big honey-eaters, consuming at least two 60-pound cans every winter, and often I would threaten to keep a bee and raise my own honey. Then I got acquainted with a bee-journal editor and subscribed to his journal just to get a general idea of what bee-keeping looked like. Then, following one of my rules, I bought a book on the subject, read it, and placed it in my book-case. Bee-keeping looked easy, and I had no desire to waste time on it.

Then the blow fell. A neighbor moved his home a thousand miles, and left his bee-hive behind him—one bought the summer before. Nobody in the village would touch the varmints at any price, and at last they were unloaded on me as being the easy mark that tackled almost any thing. Surely I was not afraid of bees? Of course, I was not. Then they ran themselves, required no care of any kind—all I had to do was to take the honey at regular intervals. The best thing to do with temptation, I have found, is to give in at once and get the matter off your mind; so I succumbed, paid the small price asked for the complete outfit, and shortly discovered that I had found a big exception to my rule. The little demons got on my mind in short order, and have been there ever since.

It was April 1 when I bought the hive. I inspected it in the yard where it had spent the winter, with practically no protection from the cold blasts that circle round Lake Michigan. A few bees were flying merrily, so I decided that night would be the best time to bring them home, since at that time all of them would be nicely tucked in their little bed and I would have no trouble—none at all. Just to make sure of them I would nail a strip of wood over the entrance, but the precaution was probably needless.

At 8 P.M. that night I set out with a wheelbarrow and a lamp for my hive. I nailed on the strip in front, and was amazed to hear an awful rumpus at the first stroke of the hammer. But I had the wild beasts safely caged, so it was all right. Carefully I swung the hive on the barrow, without mishap. For a mercy the bottom-board held, but no credit is due me, as I thought all bottom-boards were an integral part of the combination. It is not what we know that bothers us, but what we don't know. Five minutes later my ignorance brought the inevitable result; the punishment more than fitted the crime; in fact, it had enough surplus material left over to make several extra habits, including one of strong language.

In my own yard I had placed four bricks in the very worst location I could have selected—one that was open to all the cold northwest blasts for which Chicago is famous. As I was placing the hive in position, aided a little by the feeble light of a stable-lamp, carried without discretion by my boy, I heard the bottom-board drop, and then it seemed as if ten thousand needles had been suddenly thrust into the points of my fingers. A quick glance showed me an army of black smudges rushing all over the sides of the hive, so it was dropped into position and I beat a hasty retreat. It was the worst April-fool stunt that ever had come my way; but I draw a veil over the rest of that evening's doings and sayings, especially the latter.

What had I done wrong? Now I turned to my own book and the ones that came with the outfit; but, oh what an awful tangle every thing seemed to be in! even the catalog was confusion tenfold—so many different kinds of hives; but mine was unlabeled. Bit by bit I learned that bottom-boards and hive-covers are unattached

but essential parts of any well-constructed hive, and that in the case of moving they ought to be fastened thereto. As my fingers and ankles ceased throbbing I felt less vindictive toward the manufacturer, but more determined to know more about hive construction.

Day after day I studied the catalog, and carefully read through the caption "Hives" in the A B C book, and often with the catalog in hand I would put this question to the Sphinx: "What are you, anyhow—a Hoffman, a Langstroth, a story-and-a-half, or a Danzenbaker?" and, sphinxlike, it answered nothing.

What I did not know was bothering me a whole lot. At last I got some relief. One night I was called to the telephone. "Say, Todd, is it true you have a hive of bees, and that the little wretches have about laid you out?"

"Yes, and no; but where do you come in?"

"Oh! I kept bees when a boy, and I am just dying to get my hands on a hive. I know all about skeps, but have had no experience with frames."

Result, we combined our forces and investigated the inside arrangements one afternoon in the midst of a cold northwest wind. My friend thought he saw the queen, a miserable little runt he called it, but there were a few drones out and lots of drone-cells. I took his word for it in every thing. We assumed the hive was a Danzenbaker, after a study of the catalog; but I refrain from saying how often I measured the outside dimensions of that hive. My mind now got some repose, and I thought my bee troubles were all over, and so turned my attention to my cold-frames. Soon, however, I noticed each evening an awfully big heap of dead bees in front of the hive. I would lay a piece of paper on the ground, and the next night I would find a hundred or two of dead bees on it. Then drones were flying freely, and I began to suspect that something was wrong.

Back to the books again. Gentle reader, did you ever hear of "Buchan's Domestic Medicine"? It was a household work in Scotland fifty years ago, and many nervous people put in nearly every spare minute studying the symptoms of every disease so as to locate their own. One man I knew was said to be convinced that he had most of the symptoms of every disease mentioned in Buchan, including those of a condition that can not possibly occur to a member of the male sex, and I often thought of him as I burned the midnight electric light over such parts of the A B C as are devoted to diseases. Not finding the exact symptoms I proceeded to read the whole book, and at last struck "Bee Paralysis." This was the nearest I could get; but it did not properly cover the ground. One thing I was sure of—lots of my bees did stagger around on the alighting-board as if drunk or paralyzed, and were hustled off by their cruel-hearted sisters. They were black and greasy in appearance, as described in the book, but their abdomens were not swollen. And the drones got more numerous, making the welkin cheerful with their hum. Another examination of the inside of the hive showed fewer bees and more drone-cells. Verdict, hive no good; cause unknown.

Medford, Oregon.

*To be continued.*

## CAUCASIANS THAT EXCELLED ITALIANS.

### They Capped the Honey Whiter, Entered the Supers more Readily, and were Easily Distinguished from Blacks.

BY C. W. PRICE.

[The following article by Mr. Price, in praise of the Caucasians, may draw out some protests from some of our subscribers who have tried these bees, and who report they are no gentler and no better in any respect than Italians. After some of these protests had come in we held back one article praising these bees, and the writer of it felt that we were not fair in that we allowed an article to go in condemning the bees, and yet refused to publish his in praise of them, as he had found them to be eminently satisfactory. We are now publishing both articles, and will endeavor to publish any unfavorable ones as well as any that may come in praise of them.—Ed.]

I notice that the different writers are divided as to the value and importance of Caucasian bees. This being the case, I think they should be thoroughly discussed, and all of the good or bad points fully brought out.

When these bees were first brought to my attention I was at once seized with a desire to try them. Situated as I am in town with neighbors on each side, and with only a small tract of ground, I thought that, if I could get a strain combining prolificness with gentleness and good honey-gathering qualities, I could well afford to make a change. I had commenced with black bees, then I changed to Italians with some hybrids mixed in with them. I like the blacks fully as well as the Italians. They stored more honey for me, and capped it nicer than the Italians, and would enter the supers when Italians would not. The last year I had the Italians the two strongest colonies refused to go into the supers, and, try as I would, they would not and could not be induced to go above. They would cram the brood-frames with honey, and then swarm. The hybrids did better for me than the Italians. They entered the supers as readily as the blacks, and capped the honey nice and white. Then the Italians are apt to change their minds about being gentle, and surprise you when you are unprepared. I found that they could be cross on short notice.

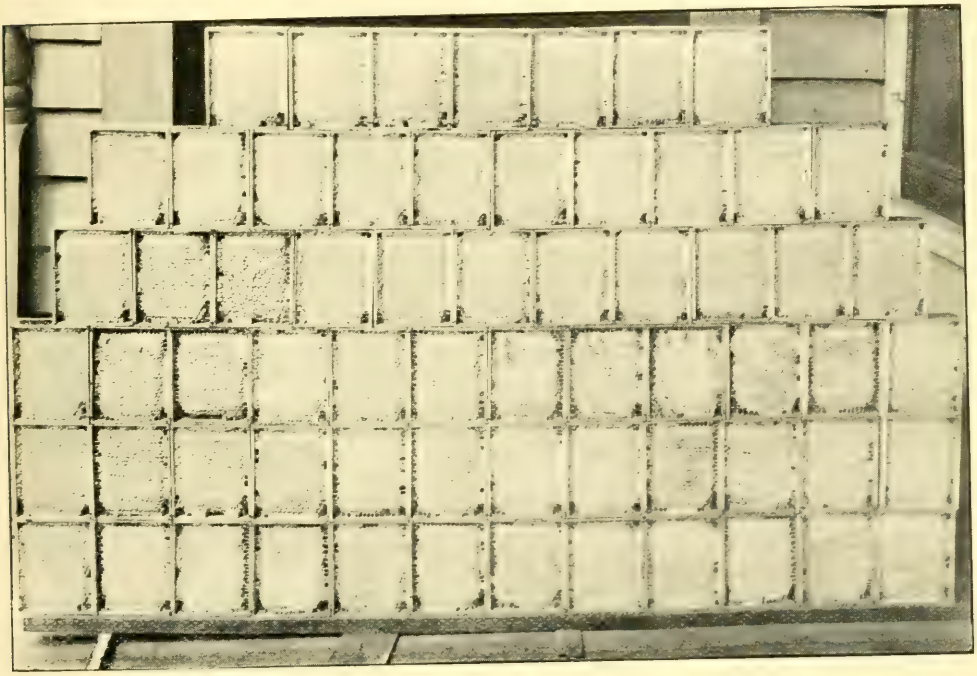
Early in the season of 1906 I procured several tested Caucasian queens from different places. Two of these queens were select breeding queens, and all of them were fine ones. During that season I raised and introduced Caucasian queens into all my hives. In the fall of that year I received an imported Caucasian queen from the Department of Agriculture at Washington, introduced her, and she proved to be a good queen.

The year 1907 is generally considered to have been a very poor one for the production of honey. This is the report brought to me from over this county, and all bee-keepers whom I have seen report the season as a poor one. Regardless of this fact, and the still further fact that I had but little time in which to look after my bees, the Caucasians gave me more honey than was obtained by my neighbors or by any one in the county so far as I am able to learn. I had more honey per colony than any one near me, and there are a number of bee-keepers here. My Caucasians beat them all. They built up very rapidly in the early summer—so fast, in fact, that I was surprised to find them so strong with bees

when the honey season opened. They swarmed about as much as the Italians had been doing, but were more gentle when being handled. When it came time to put on the comb-honey supers they were all in good condition, and I was pleased with the way they entered the supers and commenced work. If they continue to be as good honey-gatherers as they have been so far, no more of the yellow beauties for me. They capped the honey nice and white, and the work in the supers could not be surpassed by any bee. No discount on them there. The two first supers to be removed, which were a fair sample of all I obtained, were so nice that I took the 64 sections out of the supers, and had the honey photographed. I inclose a picture of the honey as it appeared then. This was not sorted over, nor any particular super selected for the purpose. It was just a fair sample of what I obtained.

There seems to be something about them that makes them all want to defend their hive when attacked. When the weather is not favorable for handling bees you will find the Caucasians about as cross as any bee you may meet. They will fight like tigers if you attempt to handle them when the weather is cool. Leave them alone then. They are are good defenders of their homes, and are seldom robbed by other bees. In handling them they will remain on the combs just like Italians, and are in some ways very much like them.

The color is enough different from the blacks so that they may be readily distinguished from them. They raise lots of drones; and, consequently, if you were to have Caucasians introduced into your yard the chances are that, with the large number of drones raised, they would be likely to remain pure Caucasians. They will



FIRST TWO SUPERS TAKEN FROM A COLONY OF CAUCASIANS IN 1907.

This shows the average quality of the sections, as no effort was made to pick out good supers.

I have found the Caucasians more gentle than the Italians, and with me they have stored more honey, capped it nicer, finished off the sections just as nice, put less propolis on the sections, and did not attach so many of the sections to the separators. This last was quite an objection to the Italians, for in some seasons they would attach so many sections to the fence separators that it was quite a loss, as more or less of them would be damaged in being removed from the supers. Now, there is quite a difference in bees in more ways than one. I have found that, while the Caucasians are gentle and easily handled when the weather is warm and they are at work, they must be left alone when it is cool and cloudy.

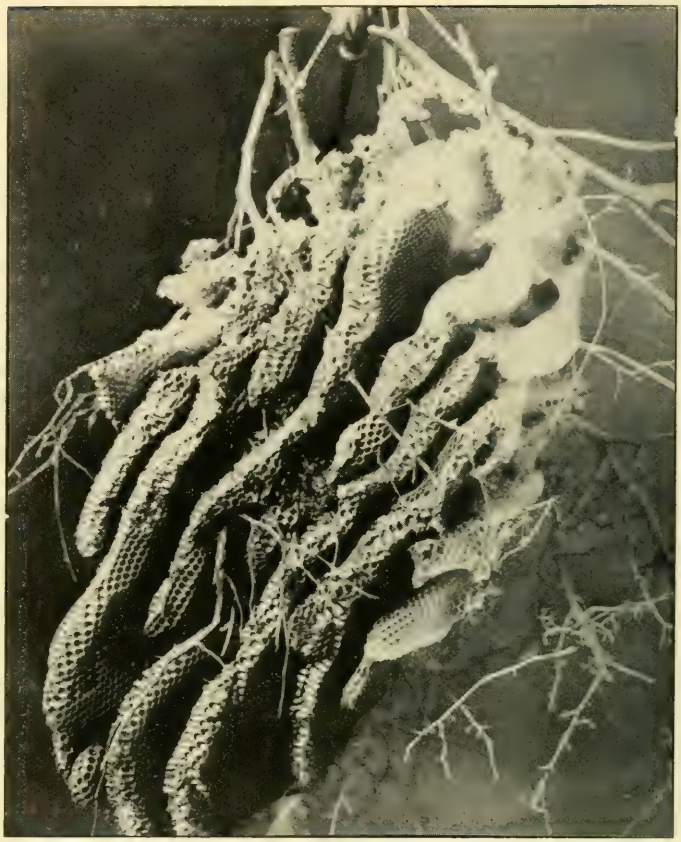
start a large number of queen-cells, and are good bees to have if you wish to raise queens, as they will care for more cells than Italians or blacks.

The one principal objection to them seems to be their habit of gathering propolis; but I think this is being greatly exaggerated. I find less propolis on the brood-frames and on sections than before I had them. It is a fact that they will gather a large amount of propolis and deposit it at the entrance to the hive in lumps as big as the end of my thumb; but this is about as good a place to have it put as I know of; in fact, this is where I want to have it left, then I can raise the hive off the bottom-board, scrape it off, and it is done with.

My advice to those who have the Caucasians is, do not be in too big a hurry to condemn them. They have proven to be all right with me, and they will do so with you if given a chance. Too many condemn them without giving them a fair trial. There are bees and bees; but you can not find the bee that will please everybody: it is impossible. If you are so situated that your bees can bother no one, then the gentleness of the Caucasians will not appeal to you so much. Those who are living in town, and are timid about handling bees will find the Caucasians very satisfactory.

Spirit Lake, Iowa.

[Our correspondent believes that the Caucasians are enough different in their markings to be readily distinguished from black bees. Some may differ with him in this. It will be remembered that one of our correspondents, some time ago, sent by mail some cages containing samples of Caucasians, blacks, and Carniolans to some of the expert queen-breeders. They were unable, by the markings of the bees, to name them. There *is* a difference, but it is so slight that the great majority would not be able to distinguish one type from the other. In point of behavior there is a marked difference between blacks and Caucasians. The difference in markings between Carniolans and Caucasians is more distinct than between Caucasian and black bees. The Carniolans are slightly larger than either, with a bluish-black cast, while the Caucasian and German bees are of a grayish black; but the Caucasians are a little brighter, the fuzz-rings showing more distinctly.—Ed.]



OUTDOOR COLONY FOUND ON SUGARLOAF MOUNTAIN, NEAR BOULDER, COLORADO.

A WHOLE APIARY TO BE CAUCASIANIZED; ONE-THIRD MORE HONEY FROM CAUCASIANS THAN ITALIANS.

On page 42 Mr. F. R. C. Campbell writes that he has two Caucasian colonies from Washington that did not gather as much honey as Italians and hybrids, but that they plastered fences and sections with propolis.

I wish to report that we have 35 colonies, also from Washington, D. C., that put up 160 lbs. of fine section honey per colony the past season, besides filling 75 lbs. in the brood-chamber at the close of the season, which was one-third more in every case than the best Italians did. Eighty stocks of Italians are in the same yard with them. Our Caucasians filled the entrances with propolis at the close of the honey-flow, but carried none into supers. The sections and fences came off as white and clean as when put on, needing no scraping.

Veil and smoker were a necessity with Italians all the season, and stings were frequent and severe. With Caucasians no veil, smoker, or hat was used, and no stings received; so we have concluded to Caucasianize all our apiary.

E. A. Morgan.

Vermillion, S. D., Jan. 11.

## A LARGE OUTDOOR COLONY.

BY C. H. HOWARD.

In a store here are several combs built on a bough of a tree. It is the largest outdoor work of bees that I ever saw, for it would accommodate quite a large colony. The store-keeper let me have them to get a photograph made, as shown herewith. He informed me that it was found last year on Sugarloaf Mountain, which is about 17 miles from here.

Boulder, Col., Feb. 14, 1908.

## QUEEN-REARING FOR WOMEN.

### Many Queens Lost at the Second Introduction in Baby Nuclei.

BY MRS. J. W. BACON.

I have been rearing queens for the last ten years, at first for my own use and then selling a few. About three years ago I sent for the book "Modern Queen-rearing," and a queen-rearing outfit, and have raised and sold some very nice queens. The small nuclei boxes that are seen on the fences are home-made, each holding two Danzenbaker sections fastened to the cover. We always have some partly filled sections that we can use in this way. This saves the time, trouble, and expense of having the small frames filled by the bees. It does not pay to try to start these small boxes too early or before there is a honey-flow; and a good teacupful of bees should be used in each one. I have some of these boxes hung in a hedge. Of the first lot of queens introduced I lose very few. It is not so easy to introduce the second queen.

The plan of caging a virgin queen for a few days in the nucleus before taking the laying queen away is but a beautiful romance. How I do wish it would work! but I find her dead nine times out of ten. I have the best luck with the ripe cells put in a few hours after taking the laying queen away; but I use what I have at the time. If I have virgin queens in the nursery cages I put them in just at night of the day I take the queen away.

However, I introduce the second queen to these little boxes; and when I take these out I let these boxes go for the season, as they will all be robbed out as soon as the honey-flow ceases. I have always lost about half of this second lot. They may be too near the old hives; but it is a very handy place to have them. We have a number of dovetailed hive-bodies with a division-board in the center, and an opening at the back of one side. This makes two three-frame nuclei. I hardly ever lose a queen from these. They are the best for early and late queens.

I hear some one ask if it pays. If you count the satisfaction of being master of the situation, the benefit of outdoor exercise, and if you love to work with your bees, it pays well; but if you are looking only for the dollars and cents you had better let some one else raise the queens, and run your bees for honey.

Waterloo, N. Y.

## EXTRACTED-HONEY PRODUCTION.

### Getting the Honey off the Hives; the Locality and Method Whereby Large Quantities of a Superior Article May be Secured in a Leisurely Fashion at a Low Cost.

BY W. Z. HUTCHINSON.

*Continued from last issue.*

I have already mentioned the use of escapes in the removal of the honey; but when ten-frame Langstroth hives are piled up four and five high, the putting-in of the escape-boards is no light task, especially for one man; and I have tried to plan all of my work so that one man can go to an outyard, all alone, go on a wheel or in a trolley car, or in some such manner, and go on and do the work to advantage without any assistance. I would have a honey-house and full complement of tools and appliances at each yard; then, during the working season, all that has to be carried from one yard to another is simply the man himself. But, to return to the insertion of the es-

MRS. J. W. BACON'S QUEEN-REARING YARD, WATERLOO, N. Y.

cape-boards. Of course, one end of a super can be raised up slightly, the board shoved in as far as possible, then the super lowered and the board and super shoved along until both are in their proper places; but this is difficult and unpleasant both for the operator and for the bees. A hive-lifter could be used for this purpose, but I have an arrangement that is more easily and quickly put in place and used than would be the case with a hive-lifter. This is simply an iron lever a foot and a half long, with one end widened out or split into two sharp prongs that can be thrust into the hand-hole of the upper hive; then, back about four inches from the pronged end, is an iron support hinged to the lever, and the lower end of this support is also split into two prongs that can be thrust into the hand-hole of the lower hive. When the end of the lever is depressed, the upper hive is raised. The depression is continued until the lever and its support are parallel, when a wooden pin is thrust through two holes that come opposite each other; thus the levers are held in position, the upper hive being elevated about an inch and a half above the lower hive. That is, the hive is raised that much upon *one* side, when I go around to the other side and put in a lifter on *that* side, when the upper hive is held an inch and a half above the lower one, and it is an easy matter to slip in an escape-board and then lower the upper hive into place. In order that the wooden pin may not be dropped or lost it is tied to the end of a string fastened to one of the levers. It is also possible to use these levers when putting queen-excluders in place.

From the description of the levers and their manipulation, it may seem like a rather slow and tedious operation to put them into use; but actual practice shows it to be the opposite. If the weather is warm and the propolis soft, the levers alone can be depended upon to loosen the hive; but if the weather is cool, the hive had better be loosened first with a screwdriver. First, raise the hive a little bit—not quite enough to let out the bees; then drive smoke into this crack, and the bees will be out of the way when the hive is raised.

After the escape-boards are in place I go over every hive carefully, *carefully*, CAREFULLY, to see that there are no cracks that will let bees into the super after the inmates have gone down through the escape. One who has never used escapes will be surprised how small a crack will let in a bee. The best of any thing that I have ever found to stop up these cracks is soft clay. Find some stiff clay, just about such as would be used for making bricks; moisten it, stir it, and work it until it is of just about the consistency of putty. Take a ball of this in the hands and go around and examine all the hives, plastering some of the clay putty into every crack. I never knew the bees to try to dig out the mud, and it soon hardens down as hard as a marble.

At each one of our apiaries we have a place to sleep and cook, even if it is only a tent, and we can go the day before we are to begin extracting, and put a bee-escape under the top super of every hive. The next morning most of the supers will be free from bees, and we can begin taking them off and putting the escapes in under the next story. As we begin taking off the honey we also begin warming it up, and, when warm enough, we begin extracting. You will notice that there are really four operations: Putting the escapes in place; wheeling the honey into the honey-house; warming up the honey and then extracting it; and, once the work is begun, it is easy to follow out a sort of routine in the work.

LEVERS FOR LIFTING HIVES WHEN PUTTING BEE-ESCAPES IN PLACE.
The hive at the left shows the lever in place. The one at the right shows the handle of the lever depressed and the pin in place.

I wonder if I might be pardoned a few words of comparison with the ordinary method of extracting. The hardest and most disagreeable part of the work is that of getting the bees off the combs. At best it is unpleasant for both the bees and the operator. The weather is almost always hot; and the smoking and brushing, especially the latter, make the bees cross; and between the heat and the stings and the mussy character of the work the poor bee-keeper has any thing but a good time. It is not so bad when honey is coming in; but there is always some of this work to be done at the close of the season, when there is robbing to contend with. The use of the bee-escape cuts out all of these unpleasant features. Instead of several men working all day in a sort of mild torment (and sometimes it isn't so very mild) to get the bees off 5000 pounds of honey, one man can put on the bee-escapes in half a day, and really enjoy the work if he uses some lifting-arrangement such as I have described. Don't you see how these two things, plenty of empty combs and the use of bee-escapes, can change the whole aspect of extracted-honey production? They do away entirely with the hurly-burly of hurried extracting in hot weather. Not only this, but this plan allows one man to care for several apiaries all alone. It is a very short job to put on empty supers or supers of empty combs; and it is not necessary to wait until the very minute they are needed before putting them on the hives. By careful watching, and keeping slightly in advance of the work, it is an easy matter always to have abundant room on the hives, even though there are several apiaries to care for. Then when it comes time for extracting there is no special hurry about it; the work at one apiary can be finished up, then taken up at another, and so on, going from one yard to another until the work is all done, no matter if a month or six weeks are consumed in the work.

WARMING UP THE HONEY.

The first year we warmed up the honey with a base-burner hard-coal stove. This gives a very even, steady, desirable heat; but it is too expensive, and not very practical, to have a hard-coal stove at each apiary in the woods of Northern Michigan; so, last year, we used a Perfection oil-heater, costing about $5.00, capable of burning a gallon of oil in about eight hours, although much less can be burned. This is the first oil-burning stove, using a wick, that I ever saw that could not be made to smoke. It has a cylindrical wick, and just above the wick is a round plate of iron called the "flame-spreader," and the wick is turned up until it strikes this spreader, when it can go no higher, and it won't smoke, and can't be made to do so.

One end of the honey-house or cellar is partitioned off, making an "oven," as we call it, large enough to hold 50 or 60 supers. We fill this up at night, for instance; light the stove before we go to bed, turning the wick up part way so that the temperature in the upper part of the room will stand at about 100 degrees. In the morning we refill the stove, turn it on full blast, and go to extracting, taking the first supers from the top of the room. As some of the piles are lowered, more supers are taken from other piles and added to these, thus bringing more honey up into the heated "zone." As fast as there is vacant room, more supers are brought in; and a sort of routine is followed whereby one always has hot honey to work on while more is heating.

So far as results are concerned, this plan of heating is satisfactory, but there is one decided objection; and that is, the handling of heavy supers of honey in a hot room; and we have in view the adoption, this season, of a different plan that was suggested by Mr. Elias E. Coveyou, of Petoskey, Michigan. Part of the room will *not* be partitioned off, as before; but, instead, a box, or sort of "well," will be made below the floor, at one end of the honey-house or cellar, in which to set the stove. Across the honey-house, upon the floor, just above the "well" containing the stove, will be built a box, several inches deep, as wide as the length of a hive, and extending clear across the room. Side by side, along the upper surface of this box, are to be openings nearly as large as the bottom of a hive or super. When the fire is lighted in the stove the heat will rise up into this long box and pass along its entire length; and if the openings were left uncovered it would pass out of them into the room; but over each opening is to be stacked up a pile of supers of honey, perhaps four or five supers high, with a cover on the top of each pile. The heat will rise into these piles of supers, and be retained there, warming up the honey—the upper super becoming the warmest first. As the upper super is taken off to extract, the cover will be placed on top of the next lower, which thus becomes the topmost super, and will receive the greatest amount of heat. In this way there will be no lifting and piling about of supers. Once they are stacked up over these openings, they will not be moved till taken away to be extracted, the top one always being the hottest, even though it may be the only one left over the opening. When heating honey in

G. F. JONES' APIARY IN NORTH CAROLINA.

The hives are set up on high foundations to prevent the toads from eating the bees at night.

a room, the great difficulty is that the heat rises to the top of the room, perhaps also melting the combs in the upper tier of supers, while those next to the floor are quite cool—too much so to extract—and there is no way of heating them except to raise them to the top of the room. It is evident that Mr. Coveyou has solved the problem of heating the honey without heating a room, and without piling the supers over after they are once in place.

*To be continued.*

## BEE-KEEPING IN NORTH CAROLINA

### Why Bees Rob During a Honey-Flow.

BY G. F. JONES.

We had a fine honey-flow here last season. Our principal flow is sourwood, which gives a very fine-flavored honey, water-white. The flow lasted 27 days. We have two robbing seasons—one in the early spring and one in the fall. On the 23d of September last we had a fine honey-flow, but my bees were robbing the worst I had ever seen them. I should like some of your experienced bee-men to tell me why the bees rob during a fine flow. Our fall flow is from the frostweed, which is the last to bloom here.

I am sending you a view of the home of my bees. I have 16 colonies, which gave me an average of 70 lbs. One of my colonies gave me 140 lbs., which I sold at 17 cts., or $23.80, from one queen. I have my hives on foundations 8 in. high, and just the width of the hive, and sloping, as you will see in the picture. I arrange them this way so the toads and frogs, which are very numerous here, can't pick up my bees at night. I notice them trying to catch the bees at night; but when they make a dive they turn a somersault every time.

I have been keeping bees for three years. I started with one colony, and have built up to 16. I have had several reverses and many gloomy days with my bees, but I just consult my old standby, GLEANINGS, and it always pulls me through.

Elkin, N. C., Oct. 9.

[You say you were having a "fine honey-flow." We can hardly believe this was possible. It would be our opinion that there was some honey coming in, but not enough to keep all the bees busy. Sometimes during a light honey-flow some colonies will be busy while others will be robbing; but during a honey-flow, if at all strong, all bees will be engaged in gathering honey.—ED.]

## MICE IN CHAFF CUSHIONS.

### Colonies Prepared by Placing Large Boxes over Paper-wrapped Hives.

BY SARAH B. LEEDS.

These pictures are of bees kept by two young women in Pennsylvania. In order to shelter the colonies for the winter, last year we put a super on each hive with a bag of chaff inside, then tacked builder's paper around the hive, and over all placed a large packing-box—Fig. 1.

The bees were in good condition in the spring, but we found the field-mice had made nests for themselves on top of the hives, and had gnawed off a good deal of the paper under the box, as shown in Fig. 2. Several weeks later we looked into the hives to see how the bees were getting along, and found a large nest inside of one of the

hives, with the mother-mouse and several little ones, the combs having been badly eaten to make room for the nest—Fig. 3. Perhaps this might not have happened in a stronger colony, but the queen had died and the bees dwindled and seemed discouraged.

West Chester, Pa.

## PREVENTION BETTER THAN CURE.

### Painting Cracks and Entrances to Prevent Robbing.

BY R. M. SPENCER.

I notice an article in the Sept. 1st issue, page 1131, in regard to the robber-trap invented by J. F. McIntyre, who resides only fifteen miles from me. Being a good friend of Mr. McIntyre, and claiming his way of stopping robbers by use of the trap is good, I wish to write only on the subject of the prevention of robbing, which will do away with the use of any trap.

A few years ago I saw a short article in one of the journals in regard to the use of fresh paint as a preventive of robbing. The idea looking good to me I tried it; and to say it was a success is putting it mildly. The directions were to use paint the same color as the hive, but I add a small amount of turpentine. In beginning to open colonies of bees when they are inclined to rob they will show signs of robbing after you have opened a few; and as soon as these signs show I get my paint and brush, and paint all cracks under the cover and between the super and brood-body on all colonies that I have looked into. To see these bees pounce on the cracks of hives they have started on is amusing, because, as soon as they do so, they alight on this fresh paint and get off from it at once; hence they will not hang on any hive in clusters or in long strings as they do when they begin the robbing. This, then, confines the robbers to the hive that you are working with; but as soon as you close it, and paint all cracks, they will bother it no more, and you can look over a yard of bees by using this method, and have little trouble, and also be painting part of your hives. But if robbing is so bad that the bees begin to get in the entrances I do not close them, but paint all the alighting-boards and about two inches above on the hive-body, as the robbers always alight either on the alighting-board several inches back and crawl

FIG. 2.—OUTSIDE BOX REMOVED TO SHOW THE PAPER. WHEN THE HIVES WERE EXAMINED IN THE SPRING, MOUSE-NESTS WERE FOUND.

FIG. 1.—COLONIES PREPARED FOR WINTER.

A super containing a chaff cushion was placed over each hive, and building-paper wrapped around it. Finally a large box was placed over all.

FIG. 3.—COMBS EATEN BY MICE IN THE SPRING.
*See preceding page.*

into the hive, doing the same above on the hive-body. But any of the bees of the hive being robbed, in returning make a straight dive and go into the entrance clear of the paint, and in a short time every thing will be quiet. I know I have saved a great many colonies by this method on my territory; and I think it will work elsewhere as well.

Nordhoff, Cal.

[Prof. H. A. Surface, zoologist, in the employ of the Agricultural Department of Pennsylvania, conducted some experiments in the use of paint to discourage robbers that were hanging around the hives, and his experience was about the same as yours. We may say that plain turpentine will answer almost as well; and a solution of carbolic acid and water painted on would also be nearly as effective. There would be one objection to the use of paint; and that is, that the cracks of the hive might get too many coats, giving it a rather bad appearance.

It may be said that robbers should not be allowed to pry around the cracks of a hive; or, rather, we should say they should not be permitted to get into this bad habit. Where robbing is rampant, hives should be opened only while it is rainy or growing dark; or, better still, the operator should get inside of a cage to handle the hive during the day. If hive after hive is opened during the robbing season, and two or three hundred bees are allowed to pounce down on the combs while the colony is opened up, conditions will get so bad as to make work intolerable, with the result that there will be hundreds if not thou-

# FOR WHICH WILL YOU VOTE ON ELECTION DAY?

Whoso shall offend one of these little ones which believe in me, it were better for him that a millstone were hanged about his neck, and that he were drowned in the depth of the sea.—Matt. 18: 6.

VOTE AS YOU WOULD HAVE YOUR BOY BECOME.

You may vote to license saloons to make a drunkard of *my* boy, but I will never vote to license saloons to make a drunkard of *your* boy.

THE MILLS THAT GRIND.

The ginmill can no more run without boys than a sawmill can run without logs or a flouring-mill without grain. The only question is, whose boy shall it be, your boy or mine, our boy or our neighbor's.—*See Temperance Column.*

sands of robbers that will be continually prying around the cracks of the hives and the entrances of weak colonies. There is no advantage in working in this way. The hives should be opened early in the morning or late at night, or by moonlight. One can do very fair work providing an attendant holds a lantern. In a word we may say, be careful to avoid the robbing habit; for when it is once started in a yard it is likely to continue throughout the season, causing no end of annoyance and loss of bees, and a continuous uproar in the yard.—ED.]

## IS THERE A PERFECT LOCATION?

### Some Observations from a Bee-keeper Who has Traveled all Over the United States and Cuba.

BY LESLIE BURR.

I have been in almost every section of the United States that has the reputation of being a good honey-producing country, and I spent the greater portion of four years in Cuba. While there I visited all of the provinces and worked bees in half of them. What I intend to do now is to show what the conditions are in various parts of the country.

First we will go to California and take a look at conditions there. The bee industry is of such importance that you can hear the prospects of a honey crop the coming season discussed at the hotels in the cities, or at the corner groceries in the small towns.

And then when you see the sage-covered hills, with not a foot of them under cultivation, you say, this is surely a bee-keeper's paradise, and so it would be if the sage yielded every year. But it does not, and the bee-keepers often think they could improve their condition by making a move, and wish that they were in Arizona or some other place where fog is unknown.

In Arizona and New Mexico conditions are much the same, for you are not always sure of a honey crop. Since there is no rain, the bee-keeper has to go where there is irrigation, and he has but one thing to depend upon for his surplus honey, alfalfa. And if you think that an alfalfa region is a bee-keeper's paradise, divest yourself of the thought; for, while there are several crops of hay cut each season, the period of bloom is so short that it takes several months to get as much honey as would be obtained in the same number of weeks in the North.

Then there is that great State, Texas, where you can get any thing you want in the line of climate, where you can travel in a direct line as far as from Chicago to New Orleans, and still be inside of the State lines, where you can spend the winter at Corpus Christi out of doors and then go into the pan-handle region in May and find a blizzard raging.

But, to come back to the question of bee locations. Texas has her share; but do not expect to find them everywhere. There are parts of Texas as large as the average Eastern States where it would be impossible for bees to live, let alone gathering any surplus. And Texas is the same as the previously mentioned localities. You are not certain of getting a crop. The mesquite is a freak, like the sage of California or or the black mangrove of Florida, in that it yields only when conditions are right.

Possibly, now, your thoughts have strayed to Colorado, and in your mind you have pictured the great alfalfa-fields, with the mass of sweet clover growing along the irrigation-ditches and road-sides. What you will generally find is that a great portion of the alfalfa is cut before coming into bloom. But you argue that it has been proved that it is a loss to cut alfalfa at such early periods, and it is only a question of a short time until the farmers will let it bloom as in years gone by. But such reasoning is mostly "hot air," for, as a rule, where the early cutting of alfalfa is practiced the hay is used for feeding sheep, and alfalfa for sheep has to be cut before coming into bloom.

Then there is such a thing, in parts of Colorado, as overstocking. I know of one crossroads where there are three apiaries almost within a stone's throw of each other. Each of these apiaries belongs to a well-known bee-keeper. There is another section of the State where there are ten thousand colonies within a space of twenty miles square, and the size of the apiaries is such that a Californian or a Cuban would hardly feel justified in calling them an apiary.

So much for various parts of the country. But do not think that I mean it is impossible for one, no matter where he is, to be able to benefit himself by a change of location. Not a bit of it. I believe that, to make a success of bee-keeping, one must have a good location, and that the man and hives are secondary. But what I do want to say is, that nowhere is there a great bee paradise which one can find by moving one or two thousand miles; and that he who wishes to better himself can most likely do so just as well by moving fifty or sixty miles as a thousand; for, from my own observations, there are still a number of good locations in the North that are not overstocked. The old Spanish explorers sought for their visionary Eldorado, but it was never found; and so it is with the bee-keeper who thinks that somewhere there is a perfect bee country. It does not exist.

Valparaiso, Ind.

## PERFECTION IN BROOD - COMBS WITHOUT WIRE OR SPLINTS.

BY WALTER S. POUDER.

Having received many inquiries about wiring, and using splints in brood-frames, and as many of these inquiries are from readers of GLEANINGS, I should like to explain the method which I have found most satisfactory. In short, I use neither wire nor splints; but having my combs perfect is one of the hundred things that I am "cranky" about. I have had considerable experience in extracting and in shipping bees, and once thought that wiring was absolutely necessary; but with horizontal wiring I found bulged combs, and in vertical wiring the wires along the top-bar were very unsightly to me, and the bees seemed to want to store propolis along these wires, and to me the work of wiring always seemed very tedi-

ous. I use full sheets of medium brood foundation, but I cut it down so that it does not reach the end-bars by half an inch, or the bottom-bar by ¾ inch. The whole secret seems to be in giving these full sheets to the bees, and I do this by inserting one frame at a time in the center of my hives, allowing the bees to have an equal force on both sides of the foundation at the same time. If foundation should touch the end-bars the bees would proceed to fasten it before it could hang plumb.

Some one may ask, "How about extracting from such combs?" I would not extract from them at all, but would work new combs into the brood-chamber and always extract from combs that had been used for brood at least one season. In shipping nuclei I select such combs as have seen at least one year's service, and I have never had reported a single instance of a comb breaking down.

I have also considered it desirable to have my combs built to the bottom-bars. To accomplish this I cut a good comb lengthwise into strips about ⅞ inch wide, using a sharp thin-bladed knife. I then lay a comb on its side and trim off about ¼ inch from the bottom, and then insert one of the strips and place it in the second story of the hive during a honey-flow, and within 24 hours the work is completed. On this plan I have a stock of combs that are more beautiful than any wired combs I have ever seen.

Indianapolis, Ind., April 25, 1908.

## THE IMPORTANCE OF HAVING QUEEN-CELLS FINISHED BY STRONG COLONIES.

BY JOHN M. DAVIS.

I do not wish to pose as a critic; but I beg to call attention to Mr. Wm. W. Case's method of keeping "the apiary supplied with a class of queens having no superior on earth," page 363. His selection of breeding stock is good, but the after-manipulation is ruinous. He says, "When they swarm, remove to a new stand the hive from which the swarm issued. Hive the swarm on the old stand, giving it, say, three combs of brood from the old stock." First, if I were going to use the queen-cells (swarming-cells) from a hive from which a swarm had issued I would add bees to it rather than move it off the old stand and thus deprive it of the field bees that should return to it. Not satisfied with thus depopulating the cell-building colony, Mr. C. takes three combs of brood from them and gives to the new swarm, and does not even tell us to shake all the bees from these combs back into the parent hive. Not satisfied with this second depletion of the cell-builders' force, he then divides the remainder into three nuclei and keeps them building queen-cells for the next seven days. I would not use a queen-cell from a hive thus moved from the old stand and weakened after swarming, to say nothing of dividing it up, as does Mr. C., and allowing these small nuclei, in their weakened state, to care for queen-cells seven or any number of days. If you desire to use such cells, do not fail to keep the old hive full of bees, and do not divide it into nuclei until seven or eight days after swarming; then you will have queens that are serviceable, and developed under favorable conditions. These surplus cells can then be removed safely and given to other nuclei, as they will be (as a queen-breeder would say) ripe. In this condition they can be handled with much less damage to the inmates. The owner of half a dozen colonies can use this method as well as the extensive breeder. The latter, however, necessarily does not depend on swarming-cells. An *unripe queen-cell* should never be placed in a nucleus. I often have the young queens emerging from cells while distributing them to nuclei. These queens have had the benefit of very strong colonies from start to finish. Long experience has taught me that this method develops the best queens.

### CLIPPING QUEENS' WINGS.

Lean the comb against the hive; catch the queen's wing between the thumb and index finger of the left hand; place the point of the scissors against the index finger, with the wing between the blades, and cut. The queen clings to the comb, and there is no danger of amputating the leg.

### TWO QUEENS IN A TEN-FRAME HIVE WITH A SOLID DIVISION-BOARD, PAGE 372.

For many years I have used a thin division-board in ten-frame hives in early spring to secure an abundance of nurse bees for building queen-cells. A zinc excluder is fastened to the top of the division-board by small bent wire nails so it can be removed at will, and brood from the brood-chamber exchanged for combs from which the brood has mostly hatched in the super. This gives practically ten combs for each queen, and at the same time keeps the increase in one two-story hive, giving the best conditions for cell-building in a super *a la* Doolittle. After the season is so far advanced that one queen and her bees can keep the proper strength for this work, one queen and the division-board are removed. I have lost but one queen by this method, and this was from a defect in the division-board. When first prepared I place one sheet of newspaper on the excluder; punch a few small holes through it so that a few bees can come up from either side of the division-board. Next I select good worker combs partly filled with honey; bruise some of the cappings and place them in the super. The bees will remove the honey from the bruised combs to the lower chamber, working peacefully together. The paper will soon be cut away by the bees, and it will be practically one colony of bees, and the exchange of combs can be commenced and queen-cells given them, after having been started by either of the methods practiced by queen-breeders. I can see no reason for wishing to keep two or more queens in a ten-frame hive after the season has so far advanced that colonies should be practically strong, unless it should be that there were some colonies too weak to work in supers. In that case the two queens can remain, and their progeny store honey in the same super. Any queen unable to keep a ten-frame hive full of brood should have her head pinched.

Spring Hill, Tenn.

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### YOUNG BEES NOT ABLE TO FIND THEIR WAY BACK TO THE HIVES.

[In our Feb. 15th issue there arose a little discussion between Dr. Miller and the editor. The question came up over the use of the Miller bee-escape placed on a pile of supers that had been removed from their respective hives with the bees in them, with a bee-escape on top. We took the position that, when such supers were remote from their hives, there would be young bees that could not fly and would be lost. Dr. Miller raised the point whether such young bees would ever desert the brood and go above. At any rate he had practiced the plan much, and had experienced no such loss. Not being entirely sure of our ground we called for reports. The only one we have received sustains the editor, and here it is.—ED.]

In your note on page 200 of Feb. 15th you ask for an expression from subscribers in regard to bees being lost from supers when taken away from the hives before bees are out. Last summer I took two supers off before the bees had all gone down; and, it being time to go to work, I took them to my shop, about ten rods away, where I placed them on an escape-board, gave them a little smoke to start them, and left them just outside. The bees came out and flew around as if lost, and finally settled down in little bunches; and those that I did not carry back died. I think that all the old bees had gone down through the escape before I took the supers from the hive; and as the young ones had never located the hive they were lost. ALBERT I. MILLS.

Ignacio, Colo.

[One swallow doesn't make a summer, and we should be glad to hear from others. The question is important; for if Dr. Miller's way is wasteful of bee life we should know it. If it is not, it is a convenient method to use at times. In the multitude of counselors there is wisdom. So, bee-keeping friends, especially those who know, we should like to hear from you. The editor is not particularly anxious to be "vindicated" at the expense of truth; but if he is right he would like the satisfaction of telling Dr. Miller, "I told you so."—ED.]

### REMOVING BEES FROM BUILDINGS WITHOUT DOING ANY CUTTING.

My near neighbor had some bees in his house for several years. They entered over the front porch, where the "L" joins the main part of the house. I thought I would give them a trial last spring, so I stopped all places of entrance except one. Over that I put a bee-escape. Up against this, on May 8, I put a hive with one frame containing some brood, larvæ, and eggs. May 11th I took the hive home, about 200 feet, and removed the bee-escape. A few of the bees returned, but enough stood by the hive to build up into a strong colony. May 16th I put a second hive up against the bee-escapes, and captured a much larger swarm which I removed May 31. June 8th I put on the escape again, and put up the third hive, captured another good swarm, which I took off July 1 and moved them three miles out of town. These three swarms have all built up strong, and the last two made some surplus honey.

All three swarms had two frames of comb, and only starters in the other six frames. In each hive the combs have all been drawn out and filled with stores for winter.

But the end was not reached yet. There were still some bees left in the house. July 8th I put on the bee-escape, set hive No. 4, and soon had a lot of bees, and they drew out the comb and filled it with brood and honey. I left the bee-escape on for seven weeks. I thought I would get them all this time. I then took it off and left the hive so that the bees could go in and bring out the honey if there was any in the house.

After awhile something happened up there. A war was on, and in a few days I found the hive did not contain half the bees. I could not find a queen, and brood was wanting. I think there was 30 to 40 lbs. of honey in the hive. I ordered a queen to put in, and on going to the hive about a week after I found the bees nearly all gone, and the honey all transferred to some other place. It is possible they went back into the house. If so I will give them another trial this spring. GEO. H. EASTMAN.

Storm Lake, Iowa.

[Our correspondent should have trapped the bees out into one hive, or, at most, two. Using so many different hives entailed a large amount of work, which apparently did not succeed in the end in accomplishing the main object—to get all the bees out of the house. It is very evident that the bees from the last hive went back to their old quarters. If this hive had been removed to a location two miles away there would have been no returning.—ED.]

### EARLY OR LATE TAKING OF BEES OUT OF THE CELLAR; SOME INTERESTING FACTS THAT SPEAK FOR THEMSELVES.

Last Thursday, April 23d, was cold in the morning (about 35), and it got warm rapidly. At noon the thermometer stood at 70, and I said to myself, "I almost know Mr. Kinyon will be working with his bees, and after dinner I will go up and see him."

After dinner I got into the auto, and in about twenty minutes I was at his place, and, sure enough, he was working with the bees with his brother. He halloed to me and said:

"I will be through with this hive in a few moments."

He said he had just begun working with them, and added that he would get me a veil. He tied one around my hat, and then we sallied forth to see what condition the bees were in. He said, "Here, take this cover for a seat." He then opened a hive, remarking as he did so, "These bees, the first two rows, were taken out of the cellar March 16th. After we go through these we will go through two rows that were taken out April 16th, and I want you to note the difference."

The first hive opened had considerable brood, and was doing nicely. Hive after hive was opened, and we found them in pretty good condition so far as brood, strength, and honey on hand were concerned. We soon got over the two rows. "Now we will look over those taken out April 16th."

We opened the first hive, and I immediately remarked, "Why, they haven't any brood."

Mr. Kinyon said, "I guess they are queenless. No, here is a small patch."

We kept on through these two rows and found each colony had a very small lot of brood. Most of them had no sealed brood.

"Well," I said, "it looks as though the first lot of bees were a good lot ahead of the April 16th lot. Those last set out *may* go ahead of those taken out March 16th."

"Not so," said Mr. Kinyon. "The early lot has brood hatching, and in the course of two or three weeks will be very strong. Those taken out April 16th will, on the contrary, get weaker for the next two or three weeks."

"You are correct in this," said I, "and it will be best to conclude that bees taken out by April 1st will do the best."

Mr. Kinyon then said, "Make it the last week in March."

I said, "Yes, we will say the last week in March if the weather is right."

He then told me that he had worked for Mr. P. H. Elwood, and he made a practice of taking out some early and some late, and found after a course of a few years that those taken out early did the best. Mr. Elwood now takes out his bees as early as possible. In this I think he is correct after being with Mr. Kinyon and seeing the difference in the amount of brood in the different lots. F. A. Salisbury.

Syracuse, N. Y., April 27, 1908.

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### BEES THAT CAP THE COMBS "WATERY" ARE HUSTLERS; SHALL WE PINCH THE HEADS OF QUEENS PRODUCING SUCH BEES?

I read with no little interest the article from the pen of Mr. J. A. Crane, page 429, on breeding of queens; and, as you request expression of opinion of your readers regarding a particular point raised by him, I wish to say that I do not think I could have expressed my own ideas on the entire subject better than he has done—especially that regarding "greasy" sections, to which you refer. I have written up the matter of greasy or watery sections, as they are sometimes called, several times since my bee-keeping experience began; and but few of the "old heads" in the business seemed to take kindly to my theory. It is gratifying to me to read an article from one who has had long experience in the business coinciding with me in this matter. I have had several queens whose bees capped their honey "greasy," and they were all hustlers. The hive during the busy season was kept full of workers, and hot. Such a queen is always a prolific one. When the question of disposing of such a queen has been considered, and advice has been given to "pinch her head," I have said, "No, do not do that, but send her to me. She is probably the best queen in the yard."

Evanston, Ill. Wm. W. Whitney.

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### PROPER WEIGHT OF FOUNDATION FOR THE SPLIT-SECTION PLAN.

I have received several inquiries from bee-keepers who wish to try my method of putting foundation in sections, asking what weight to use. Perhaps I can best answer the question by telling them what *not* to use, since I have as yet used only the extra thin in sections; however, owing to the trouble I have had with it for the past two or three seasons, I shall not use it again. I don't yet know whether I shall prefer the thin or the medium brood.

The trouble with the extra thin seems to be that there is not enough side wall, and the bees will often remove what little there is, leaving a smooth sheet of wax; and I find an occasional section with one side full of honey and only a plain sheet of wax on the other.

Since I do not find this in frames where heavier foundation is used in the same super, I lay it to the foundation; therefore I would advise beginners to use nothing lighter than thin in full sheets. J. E. Hand.

Birmingham, Ohio.

[Medium or even light-brood foundation would, in our judgment, be altogether too heavy for use in sections. Nothing heavier than thin super should be used. We would urge the use of extra thin as being not only cheaper, but causing less of midrib in the comb. Mr. Hand's experience, to the effect that the bees will remove the side wall of this light weight, would seem to be very unusual, or at least we do not remember to have read of any reports of it before. We should be glad to hear briefly from a large number of our subscribers on this point.

Objection on the part of consumers has been raised, that comb honey of to-day has too much of midrib or "gob," and we believe that bee-keepers should, so far as possible, use the extra thin. This is an important subject that will bear discussion.—Ed.]

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### THE MASSACHUSETTS SOCIETY OF BEE-KEEPERS; WHY ONE SHOULD REAR HIS QUEENS.

The fifth regular meeting of the Massachusetts Society of Bee-keepers was held in the Ford Building, March 7, with 43 members present. Our speaker was Mr. Chas. S. Blake, of Ashby, Mass. He gave a very instructive paper on queen-raising among small bee-keepers. He laid particular stress upon the fact that, by great care in selecting, the stock can be better controlled than by introducing queens from abroad. He considered that a person with only ten colonies could raise his own queens with profit. Various devices were shown us, by means of which at slight expense the queen-cells could be arranged, and nursery-cages used; also by which an ordinary eight-frame hive could be divided into four compartments for nuclei.

Mr. Blake announced to us that foul brood had made its appearance in Brookfield, Marlboro, and Leominster, and warned us to be on the lookout.

The death of Mr. Henry Alley, of Wenham, Mass., a veteran bee-keeper, and breeder of the Adel queens, and an authority on the subject of bees, was announced. The meeting closed at 4:15 P.M.

Belmont, Mass. X. A. Reed.

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### SPLIT SECTIONS USED AND NOT LIKED; CARTONS FOR COMB HONEY; BEES ROBBING OR HELPING EACH OTHER.

I have used split sections, and the editor, in his comments some time ago on such sections, spoke for me. The split section is all right until taken from the hive. I have but one life to live, and I do not want to take part of that in explaining to people why I took that nice white polish-

ed section and made that ungainly saw-cut through it, and then plastered the crack up with beeswax.

The proper covering for a section of honey is the pasteboard carton; and if this has a sheet of mica (isinglass) in the front it renders it transparent enough to show the honey and its grade to good advantage.

On page 228 our German friend says, "If a strong colony stands next to a weak one during a rich honey-flow, and succeeds in filling its own chamber to overflowing, it happens now and then that the strong colony, having no further room, will help to fill the hive of the weak one in the most peaceful way." Bees may do that way in Germany, and perhaps some of your readers may be able to vouch for the same thing here, but I can not. I have handled bees for 25 years, and find them more prone to rob each other than to help. I wish we *did* have a race of bees that would equalize the stores of the whole apiary. It would save lots of work on the apiarist's part, as we would then know the condition of each colony as regards stores without having to look it over. BERTHA M. TIMONEY.

Smyrna, Me.

HOW TO LABEL HONEY PRODUCED FROM TWO OR MORE SOURCES.

Will you please give me your opinion whether we should lay ourselves open to infringing the pure-food laws by marking our shipping-cases "Pure alfalfa comb honey" when only a portion of the honey is from alfalfa, and by far the larger part from melilotus. H. F. HART.

Allenville, Ala.

[Under the law you would have to label the honey "Pure alfalfa and melilotus honey." If, on the other hand, the honey was largely alfalfa, enough so to give distinctly the alfalfa taste, we would see no objection to calling it alfalfa. It is the *spirit* of the law, not the exact letter of it, that should be observed. If a honey contained white clover, sweet clover, and alfalfa, it would be proper to call it a "clover" because all three are clovers. So long as we do not misrepresent on the labels we do not violate the national law. —ED.]

MATURE BEES DYING IN THE SPRING.

I have nearly 200 hives of bees, and have always had good luck until this spring. About ten days ago one hive became diseased. The bees would drag a great many out. It seems they are paralyzed. Now, I have about seven hives affected. What can or should I do to prevent spreading? Inside the hive seems healthy; they have a good queen and brood, but, of course, they will soon dwindle away.

Dover, Ky. D. F. WEAVER.

[This case may be similar to the one described by A. L. Youngman on page 1568, 1907. Although the trouble in the two instances was not noticed at the same time of the year, possibly the other conditions might be enough alike to bring about the same result. On page 233, this year, Mr. Wm. McEvoy lays the blame on the honey, and it is just possible that the honey is to blame in this case. If any spraying has been done during fruit-bloom in the locality it would look like a clear case of poisoning. At the last convention of the Northern Michigan Bee-keepers' Association quite a number reported cases somewhat like this, and there seemed to be no explanation for it. Since the mature bees only are affected, it would seem that the trouble must be similar to some such disease as bee-paralysis, dysentery, or poisoning. Who has had experience that will throw some light on the matter? See the following from Mr. Allen:—ED.]

PARALYSIS OR DYSENTERY.

In the Dec 15th issue is a letter from Mr. A. L. Youngman, headed "Paralysis or Dysentery." I had the same trouble start in on three of my hives here last fall. I started in to feed them, Sept. 7, after I had all supers off. By the 14th I was through feeding. I closed the entrance to about 6 inches by ⅜, and then the bees commenced to die. They would crawl out on the board, bloated as if they were ready to burst open. This kept up for about two weeks, and half of the workers from three of the strongest hives I had were dead. On opening some of them there was a thick brown paste, and near the body there would be a little water. I had these hives covered over with paper and carpet. I thought my bees were too warm, so I removed all carpet and paper, and opened up the full entrance, making it ⅜ by the width of the ten-frame hive. Three days after, there were no more bloated bees on the board.

As Mr. Youngman stated in his letter that, about the time of his trouble, there was a spell of two weeks of bad weather, it may have been very wet and warm in the hives, and that started the trouble. He did not state if he had ⅜ or ⅞ entrance GEO. H. ALLEN.

South Boston, Mass.

GOOD YIELDS WITH RAPID INCREASE, BY AN AMATEUR.

In 1903 we started with 11 colonies in Dovetailed hives. We increased to 27, and our surplus was 136 lbs. per colony. In 1904 we increased to 62, and surplus was 127 lbs. per colony. In 1905 we started in the spring with 51 colonies, having lost 11 during the winter. We increased to 135, and our surplus was 66⅔ lbs. per colony. In 1906 we increased to 252, and our surplus was 62 lbs. per colony. In 1907, the season just passed, we increased to 300, and our surplus was 88 lbs. per colony. We raise all our own queens. When I say *we* I mean my wife and three daughters, ranging in age from 7 to 17, and myself, we doing all the work. The 1907 crop brought $1742. Our expenses were $635.00, leaving a profit of $1107.00. We do not expect to do so well every year, as that was a favorable season.

Maxwell, Texas. M. E. VAN EVERY.

THE HONEY-FLOW IN MANATEE CO., FLORIDA.

We have been having the heaviest honey-flow from palmetto for ten years. One colony on scales brought in 50 lbs. in four days, and 80 lbs. in ten days. I expect 20,000 to 30,000 lbs. I have extracted 13,000 lbs. now, and am just starting on another round. E. B. ROOD.

Bradentown, Fla., May 15.

# Notes of Travel

By A. I. Root

At the close of our Thursday-evening prayer-meeting somebody nominated A. I. Root as delegate to the Congregational conference in the neighboring town of Wellington. Well, we have been having a lot of rainy days. We bee-keepers notice it because we are so anxious to have favorable weather for the bees to work on fruit-bloom. By the way, if there is any one season of the year more than another that gives me animation and inspiration it is the time of fruit-bloom.

While the conference was held only twenty miles away, to go by rail would necessitate a roundabout trip. Owing to the bad roads my automobile had not once been out of town; and when Ernest learned that I was going to take my chances with my auto he protested that I would get stuck in the mud, and have breakdowns, etc. Instead of arguing the case with him, however, I slipped off without his knowing it. Truly the roads *were* bad. Had the machine not been overhauled, every thing screwed up tight, and prepared for the rough-and-tumble trip, it would not have stood the racket. Another thing, when I undertake a difficult trip like this I take off the top, the mud-guards, back seat, and, in fact, get rid of every pound of superfluous weight. Had the roads been good I would have taken our pastor along; but as it had rained the day before, I told him he had better not risk my kind of transportation. As it was, I found several places where the roads were so soft that, had I not managed skillfully, my machine would have gone down to the hubs; but by backing up, and then going ahead, and repeating the operation several times, I managed to get up momentum enough to climb out of the mire on top of the partly dried crust. I allowed two hours for the twenty miles under the circumstances. I got up to the church just about fifteen minutes before the opening of the meeting. I can not take space here to tell you of the excellent addresses we had. Notwithstanding I was intensely interested in all of them, I found it a rather severe task on my strength to listen to five good addresses, one after another, without any intermission. I am afraid I actually longed to get back into that automobile, notwithstanding the bad and muddy roads.

I found by the program that the session did not open on the second day before ten o'clock. I also knew there was one of the finest poultry-farms in Ohio not many miles away; and so between three and four o'clock next morning, just as soon as there was a glimpse of daylight, I was off with my automobile again. By the way, I have always enjoyed getting up in the morning in springtime, before anybody else is in sight. At such times I feel something like Robinson Crusoe in the old poem:

> I am monarch of all I survey,
> My right there is none to dispute
> From the center around to the sea
> I am lord of the fowl and the brute.

Yes, I used to enjoy taking a walk on foot, hours before anybody else was stirring. Later I told you about my early morning bicycle rides; but I have never found any thing to compare with an automobile ride early in the morning, when the fruit-trees are just coming into bloom. There is one wonderful advantage; the roads are clear of all vehicles; and this is especially important when there is only a narrow track of good road. On this morning especially I let the little Olds auto go like a young colt; in fact, I became so intoxicated with the surroundings and the beautiful workings of the machine that I forgot to watch the glass cup containing the lubricating oil. The oil gave out before I knew it, and the water in the tank was boiling furiously as a consequence. I had to walk quite a piece to a farmer's to get a pail of water. When I went to fill up the oil-cup I found the little pump that we use for filling it had been left at home. How much trouble a little forgetfulness on the part of elderly people like myself sometimes occasions!

Not long after my mishap with the automobile I happened to glance at a farmer's home just ahead of me, and was astonished to see several long rows of chaff hives—perhaps over a hundred in all. I said to myself, "Why, how in the world does it happen that here is a bee-keeper with all these nice hives in this locality, and I did not know any thing about it?" And then as I began to take in the surroundings, things began to look familiar, and I said, "Why, this is Dan White's place as sure as I live." It was still early in the morning, and Mrs. White informed me that "Dan" was somewhere in the back yard. When I explained that my time was very limited, and that I would have to hurry off, friend White said, "Now, Mr. Root, you certainly must stop long enough to go and see my strawberry-patch."

"And are you still growing Gandies, as you used to do?"

"Come and see."

He was soon by my side, and we ran down along the railroad for perhaps a quarter of a mile, and then got over into a field, across a beautiful patch of clover indicating the fertility of the soil; and then we found the Gandy strawberries just showing their beautiful green leaves through the straw mulching. There were two acres in the field, and another field nearly as large right alongside had been carefully prepared and marked out for setting out plants. The straw mulching was not yet disturbed except what disturbance the wind had made during the winter. In some places there was a little too much straw, and in others not quite enough. Mr. White said he would have to get right at it and go over the field carefully.

"Friend W., have you got a man in your employ who will take off just enough straw and not too much, and put on just enough where it is needed somewhere else, and not too much?"

"No, Mr. Root, I have not got such a man, and I do not know where to find one. I am going over that two-acre field, and do every bit of it myself."

Some years ago the folks at our Ohio experiment station at Wooster told me the Gandy strawberry was all right, and that it was about the handsomest and best-flavored strawberry in the world, but they added that it did not bear enough berries. Now, Dan White, after years of experience, has got hold of the secret of making it bear enough berries to pay. He sold his

whole crop last season to Chandler & Rudd, of Cleveland, at an average price of 15 cents per quart, and this at a time when ordinary berries were bringing only from 8 to 10. To do this he has carefully trained pickers. The berries are all assorted; but he says the small quantity of culls cuts a very small figure. He sells those around home for what he can get. Now, that two-acre field was as free from weeds as the small patch in your garden. If I am correct, the ground is well underdrained. Besides this, I judged by the looks of the creek that ran along adjoining the ground that there is a gravelly subsoil there. This piece of ground was originally too wet for strawberries or for any thing else. Friend White had, at considerable expense, had the stream straightened and cut down low enough to get ample and perfect drainage for his strawberry-garden. In years past he grew a great many red raspberries; but now he has concentrated his attention on Gandy strawberries and almost nothing else; in fact, he said that one reason why so many of those nice-looking chaff hives had no bees in them at present was because he was putting so much of his energy into the strawberries. There you see it again, friends. Where a man settles right down on one thing, and gives it his undivided attention, he is enabled to astonish the neighbors and perhaps the outside world with the possibilities along that line, even if it should be so simple a thing as strawberries, and just one perfect variety, the Gandy. If I am correct, he has no other strawberry at present on his farm.

I had planned to get back in time for the opening of the conference; but letting the oil get out hindered me nearly an hour; and letting the machine get almost redhot necessitated going to a repair-shop. This took more time; but while I was giving directions for repairs somebody put his hand on my shoulder. It was my good friend Charles McClave, proprietor of the Linwood poultry-yard. Now let me digress a little:

I have been many times greatly disappointed when visiting poultry establishments. Yes, some of them costing many thousands of dollars were not, to my mind, pleasant to look at. I suppose it is almost impossible to keep poultry-houses tidy and attractive at all times. Chickens of all ages are fearfully heedless and careless of appearances. By the way, I am wondering if somebody will not eventually give us a poultry-house that will cost us so little we can afford to burn it up every little while and get a new one; and I think we might at least have hens' *nests* that we can burn up say once a month or two, and get new ones in their place. Well, perhaps poultry-*houses* can not be kept as tidy as Mrs. Root keeps her kitchen, for instance; but I am sure there is no need of having poultry-*yards* destitute of every thing green, and looking so untidy that you want to get away from them as soon as possible.

Now, keeping this in mind let me tell you that the Linwood poultry-farm, containing 165 acres, satisfied me in one respect at least. The numerous yards were all covered with beautiful green grass. The number of fowls, if I remember correctly, was not too great in any one yard to keep the grass down. Now, this may be rather expensive business; but Mr. McClave has, perhaps, some of the highest-scoring birds in the world; and his stock is worth so much money that it would be ridiculous to keep it in cramped quarters. I was so much pleased with the grassy runs that I wrote and asked him about it. Here is what he says:

> The grass in our poultry-yards is blue grass and timothy mixed. Regarding the number of fowls that can be kept on an acre, I will state that, if well seeded before the fowls are penned, I think we could keep 100. It might be necessary to keep them off early in the spring until the ground settles, as they dig it over pretty thoroughly hunting angleworms, which would destroy the grass. We have always endeavored to keep all our yards covered with grass at all times. It is much better for the fowls, and gives the yards a better appearance. Growing vegetation also takes up any decomposed matter which may be scattered over the ground. CHAS. McCLAVE.
>
> New London, Ohio, May 5.

I did not have time to look over all the different breeds of fowls. I believe he endeavors to keep almost every thing that is called for. What interested me most just then was the ducks, geese, and turkeys; and I confess I was not aware before that the wild geese and wild ducks of America were kept anywhere in a state of domestication. I have all my life been curious in regard to the wild geese that fly over our heads; and when we went to the back part of the farm where he has such a poultry-yard, comprising about *forty acres* of timber kept mainly for this flock of wild geese, I was delighted you may be sure. If these American wild geese are not the handsomest fowls in the world they were to me just then the most interesting. The yard is surrounded by a very high wire fence, and the wild geese have the last joint of one wing clipped off while they are young. This prevents them from getting over the fence, but in no way impairs their beauty. These beautiful fowls, like the human family (or at least most of our own race) object to polygamy. Each gander chooses his own particular goose, and, if I am correct, sticks to her through life. I hope so, any way. When we came near them the gander uttered a peculiar note of protest. I did not understand the language, but I took it that he and his good wife were not particularly glad to see us. I think friend McClave says he has kept wild geese for about thirty years. The first one he got was wounded in the wing by a hunter; then by advertising he found a mate for this goose and succeeded in raising some goslings. Then he advertised for wild geese caught alive, and finally got quite a flock. He is buying and selling wild geese all the time. Said I, "Now, friend McClave, I want you to tell me how many eggs these native wild geese and ducks lay, compared with our modern improved breeds. Do the wild fowls ever come anywhere near 200 eggs a year?"

"Oh! no, no, Mr. Root; nothing like it. Why, if I get two or more settings in a year from a pair of wild geese I do exceedingly well."

In the first place, the goose lays only five or six eggs when she wants to sit; and one has to be extremely careful about meddling with the eggs or nest, or the fowls will be frightened away and the hatch be lost.

"Just a few days ago some schoolchildren got over where I keep my flock of wild geese," Mr. M. continued, "and carried away seven eggs that were about ready to hatch. Those eggs were worth more than a dollar apiece to me, and yet they were of no kind of use to those schoolchildren."

Perhaps I should add that that patch of forty

acres has a little flock of valuable sheep on it, as they do not interfere with the geese. He had also a very pretty flock of buff Orpingtons in the same yard. The wild ducks were also especially pleasing to me; but I was in such a hurry to get back to the conference that I did not see them as much as I would have liked. If I remember correctly, they are allowed to fly; but they have been so well trained to come back to their regular feeding-place that they seldom get lost. Besides the wild ducks and geese there are geese and ducks and turkeys from all over the world; and not only are full-grown fowls offered for sale, but eggs for hatching. Instead of an hour or two one ought to have a whole day to look over the wonderful things to be seen at the Linwood poultry-yards, New London, Ohio.

I told the man who repaired my machine that, inasmuch as I was a delegate to the Wellington conference, I would have to have the auto at a certain hour, and it was already time for me to start out when I got around. By the way, it seems to me there is a great opening for bright young mechanics in the way of repairing automobiles. When I told this man, Mr. Chas. Hartman, of New London, that my time was quite limited he at once got right down under the machine, in the dust and dirt; and before he got through, it was not only dust and dirt but dirty water that got almost all over him, for he had to remove the rubber tubing attached to the coils. His charge for doing this work was only 40 cents an hour. He did not get in any thing for "extras," and he did not make any part of the machine *worse* instead of better; in fact, I think it never ran nicer as it "galloped" up hill and down toward my Medina home.

I suppose I ought not to tell it; but after all of Ernest's caution to *me* he took his larger machine (and *heavier*) and followed me, and had to get some farmers to bring rails and pry his machine out of the mud where I got through safely the day before. This is one of the advantages of a light machine after it has been stripped of all extras, and I think it is a *little* advantage too to have a man in the seat who has run the machine more than ten thousand miles, even if he *is* almost 70 years old. Just one thing more:

The man of age and experience, especially if he is a Christian man, is not so likely to annoy or interrupt the regular and legitimate traffic of horse vehicles on our nation's great highways.

# TEMPERANCE

Whoso shall offend one of these little ones which believe in me, it were better for him that a millstone were hanged about his neck, and that he were drowned in the depth of the sea.—MATT. 18:6.

More than six months ago, when glancing over the anti-saloon periodicals from different States my eye caught on to a picture of some boys, in the *Missouri Issue* for Sept. 6, 1907. I looked at the picture and read the matter above it and then the matter under the two pictures, and meditated over the matter for a Home paper in our journal. The paper got covered up, however, with others and got out of sight, and so I rather forgot about it. A few days ago, one morning while at breakfast, while reading our daily Bible lesson my eye struck on the words of our text at the head of this talk, and I recalled the picture that was still lying on my desk somewhere; and for the first time it occurred to me that this text had direct reference to the liquor-traffic, the traffic in cigarettes, or any other business that will lead our people down to death and ruin instead of up toward righteousness and heaven. I hunted up that old scrap in the *Missouri Issue*, and now take pleasure in submitting to you (p. 698) two pictures. What do you think of them? And what do you think of the men who would deliberately teach these boys to drink and swear, and to smoke cigarettes? There is no exaggeration about this, friends. These pictures are of just such boys as you have in your own neighborhood and in your own home. One part of the group is made up, evidently, of the children of well-to-do families. The other group shows some boys who, perhaps, are not so fortunate, or are so considered by the world; but if you had lived as long as I have, and kept your eyes open, you would have found out that the nicely dressed boys are no safer from Satan's wiles than the other ones—sometimes I think they are not as safe; for the boys who have to work for every nickel they have to spend are less likely, as a rule, to use it foolishly. The boys who have plenty of money, and not much to do, are the ones who get into bad habits. Just recall what has happened to some of the boys whose fathers are millionaires. Carnegie says it is a disgrace to *die* rich; and I begin to think it is a misfortune to be *born* rich. The great men of the present day came, as a rule, from the class on the right-hand picture that lies before you.

The brewers and saloon-keepers are already getting desperate because their trade is suffering. They must have constant recruits or their business can not hold up and prosper. Dear me! What an *awful* piece of sarcasm to talk about "prosperity" in connection with any business designed to educate and train those innocent, unsuspecting little chaps in the course that leads down to hell! Boys are full of mischief. Your boys and my boys were and are. If they were not full of mischief, and constantly looking about for fun, and inquiring into the whys and wherefores of things, they would not be "much good." Their little minds are ready to be molded and fashioned. They are ready to take up with any thing that comes along; and when they get started they are, as a rule, full of enthusiasm and push. You may get them interested in bees or chickens, or in a printing-press or a garden, and a thousand other things; but if you do not keep a careful eye on them, and look out, somebody else will get them interested in smoking cigarettes, drinking beer, gambling, and things of that sort. May God be praised that I shall always have the mothers on my side, even if I do not get hold of the fathers. May God hasten the day when our mothers shall have a little more to say in regard to the environments of the home. There may be some fathers, but I trust not many mothers, who will say they can take care of their own children, and other fathers and mothers can take care of theirs. In other words, *whose* boys shall keep the ginmills running, your boy or mine?

While GLEANINGS has had many encouraging words in regard to the stand it has taken in the

temperance crusade, once in a while it gets something from the other side. I suppose you are well aware that we send a printed statement to all of our subscribers when their time runs out, asking them to remit if they wish their journal continued. I am now going to give you a brief letter from one of our subscribers who is not exactly pleased, evidently, with the course GLEANINGS has taken. I will give only the initials of the writer and the name of his State, for I do not wish to be personal:

The d—d local-option law has knocked us out of business, and so we have to cut down expenses. J. H. H.
Illinois, April 24.

Although this friend asked to have his journal stopped, I am going to mail him one more number, and I want him to look at these pictures. And permit me to say to him, and others who may have their revenue cut off by the recent crusade, something as follows:

"Dear brothers, when you take a look at the picture of those boys, and realize that it is in your power to influence them either in the downward path that leads to ruin or in the straight and narrow path that leads to heaven, can you for a moment think of doing any thing, no matter how much money you may get out of it, that would lead them astray? Are not the words of our opening text the words spoken by God's holy Son — words that bear the stamp of having come from heaven rather than earth? You may get money, it is true; but more than one millionaire has found his money to be a veritable millstone hung about his neck."

Just a few days before I left Florida a wealthy man in our own neighborhood, who got his money in the liquor business, made one of his employees a Christmas present of a jug of whisky. Just think of it! a *jug of whisky* for a *Christmas present!* Well, this employee, although he had not been much in the habit of attending our Sunday-school at Osprey, on that special Christmas eve he took his wife to the Christmas-tree in that little chapel I have told you about. The poor woman had suffered from sickness and other trials, and was just getting able once more to care for her little family of two. After the Christmas celebration was over, when this man and his family were sound asleep, perhaps a little after midnight, two other drinking men roused them up and demanded the jug of whisky or what remained of it. In the altercation which ensued, the man who received the whisky was shot, and his poor innocent wife was so prostrated by the tragedy on that Christmas morning that she went insane and is now in the asylum, and in a few days later the man of wealth, who presented that jug of whisky to the murdered man, himself committed suicide. That is the sort of Christmas present that that jug of whisky proved to be.

Dear friends, if your former occupation is gone, and you are obliged to turn to something else for a livelihood, can you not thank God for having blocked the way so that you can now engage in something that will be useful to humanity?

Now I want you all to take a look at that picture of the boys once more. Think of teaching these little fellows to smoke cigarettes when the whole wide world agrees in regard to the terrible damage the habit does to the boys physically as well as mentally. The teachers in our schools are a unit, and I may almost say the same thing of our fathers and mothers, and yet this traffic goes on. Seven States have already prohibited their manufacture and sale. These States are Tennessee, Oklahoma, Indiana, Wisconsin, Nebraska, Washington, and Arkansas. Ohio has once more been defeated in her effort to banish cigarettes. Just one little woman, Miss Lucy Page Gaston, is leading the fight. If you want to write to her, address her at 1119 Woman s Temple, Chicago, Ill.

In a recent letter she sends me the following newspaper clipping:

Probate Judge Samuel L. Black gave the anti-cigarette crusade movement a great impetus Sunday afternoon in a forceful and pointed address delivered at the mass meeting held in the Central Presbyterian church, Columbus. After denouncing the cigarette as the means of ruining more boys than the open saloon, he declared that, if the pending juvenile-court bill passes the legislature, he would at once commence handing out heavy fines and workhouse sentences to the hundreds of Columbus druggists, and poolroom and tobacco-store proprietors, who persist in supplying the young boys with the nefarious "coffin-nails."

"The evil of the cigarette curse lies mainly in the ease with which any youngster in Columbus can secure all the cigarettes he can smoke," said Judge Black. "Very few saloonists will sell liquor to a lad under sixteen. They are afraid to. But youngsters of even the most tender years can purchase their tobacco supply almost anywhere. The resulting havoc is evidenced in our juvenile-court records. It is not fair to punish the boy for smoking. The adult who furnishes the obnoxious weed, and derives a lucrative revenue, is the real culprit. He is the man who is filling our prisons and public institutions. If a good prohibitory measure were passed in Ohio it would not be necessary for a Columbus police judge to parole fifty or a hundred prisoners in order that room may be made for the constantly increasing throng."

Judge Black forcibly illustrated his talk with incidents that came under his notice in the juvenile court and the graver cases brought to his notice as probate judge.

Just think of that, friends. These cigarette manufacturers and venders say in substance, "We do not care a —— what becomes of your boys. We are going to have their nickels, if we can get them, as long as the boys have any." If the above are not the exact words they use, it certainly is the spirit of what their actions manifest, and all for a little money. By the way, is it not true that there are a good many of us, and some mothers, perhaps, as well as fathers, who are straining every nerve for nickels and dollars? and yet when we come to die, of what use then is this money or property? And sometimes, even before we come to die, we begin to realize that *money* does not purchase peace of mind or happiness. I have exhorted you many times lately about laying up treasures in heaven instead of here on earth. Now, is there any other way in this world by which we can more *surely* lay up treasures in *heaven* than by keeping a careful and loving eye over these young boys and girls just growing up, no matter whether they are your children or those of your neighbor? They are God's children, and the responsibility rests on us to look after them and protect them by law as well as lies in our power. See that they are brought into the Sunday-school; that they are taught these precious and wonderful texts out of God's word; that they are properly protected from these demons in human form who would blast their young lives just to obtain a few nickels. In closing I wish to give you one more text:

And whosoever shall give to drink unto one of these little ones a cup of cold water only, in the name of a disciple, verily I say unto you he shall in no wise lose his reward.—MATT. 10:42

"REJOICE AND BE GLAD."

One of the friends adds, by way of postscript to a kind letter, something that reads as follows. It occurred to me that it would follow nicely the thought expressed in my temperance talk for this issue.

And now let me tell you why I am so exceedingly happy tonight that I can hardly write straight. Our city of about 80,000 inhabitants, after eleven years of rum rule and unbridled license, debauchery, drunkenness, and high-handed deviltry that would rival Sodom and Gomorrah in brazen defiance of morality and decency, has gone *no license* by 1678 majority — a flop of 3000 from last year. I feel like throwing up my hat with a baseball yell that would startle the ashes of old Father Matthew. I am sure (and this will interest *you*) that every Methodist bell in town was rung last night for all it would stand without cracking. Rejoice with us. Next May will see all the snake-factories closed down tight, thanks to Providence, through the Lynn No-license League. We think there are brains and money and push enough behind this movement to make it permanent, and especially hot for law-breakers in the business of wet goods. The city of Worcester ditto. The business of the country is waking up to the fact that drunkenness is an unreliable factor in the marts of trade. H. Q. STAPLES.

Lynn, Mass., Dec. 14.

# HEALTH NOTES

"DULL AND SLUGGISH."

From T. B. Terry's Health Talk in the *Practical Farmer* for April 25 I clip the following:

Alfred Vieweger, Estellville, N. J., writes: "I am 26 years old, 5 ft. 7 in. tall, and weigh 145. Every week day I have hard work to do for six hours. Dr. Wiley is quoted as saying that a man needs daily on an average an amount of solid food equal to one per cent of his weight. I am perplexed over this. My experience seems to contradict it. According to the doctor I should need about 23 ounces of solid food a day. But I have lived for a week on 9 ounces a day of wheat and butter, and never felt so strong and active before; and then when I tried to come somewhere near what the doctor advised I found myself dull and sluggish—just able to plod along." This report from a young man who is seeking the truth is very pleasing. There are few people who have yet learned just why they feel dull and have a lack of energy at times. By all means, my young friend, follow your own plain experience, but with care to eat proper food, and never mind what Dr. Wiley may or may not have said. If he said it he was wrong for you and for me. For perfect results, eat just as little as you can and hold your normal weight and always feel well, strong, and active. If you eat more, a part of your energy must be used up in taking care of extra food which you did not need, and which partially clogs the fire of life.

Now, friends, the above statement from Mr. Vieweger takes a mighty hold on me, because for the past few years that "dull and sluggish" feeling that he speaks of has been the greatest trial of my life. If I sit down to read a book or paper, and undertake to read a little too long, it comes over me almost overpoweringly; and I have not found any thing but brisk hard work in the open air that will ward it off. Sometimes I think it is the natural outcome of old age; but I hardly think this can be true, because other people keep up their strength and vigor not only up to 70 but sometimes even to 80 years of age. And another thing: I sometimes have spells lasting for several days when I feel almost as well as when I was young. Is it possible that tempting articles of food that I do not need at all are responsible for this feeling of being "just able to plod along," as friend V. expresses it? I have tried taking a light breakfast of some of the breakfast foods, especially the uncooked ones, and I have thought several times I had found out where the trouble was; but after my light breakfast I often get so ravenously hungry by dinner-time, especially when Mrs. Root prepares a tempting dinner, that it seems almost impossible (I am ashamed to make this confession) to make a stop at the proper time, or to forego entirely the tempting dessert. Yes, dear friends, this is true of your old friend A. I. Root. It seems as if Mrs. Root could not get hold of the idea that I do *not* really need a good nourishing "square meal." Sometimes she says, "Oh, dear me! what *shall* I get for dinner?" Well, when nobody is to be present, probably, but us two, I say, "Dear Sue, do not get any thing at all. Just give me my bowl of rolled wheat and some butter, and I shall be all right. In fact, I have often *hoped* you would not waste your precious strength in preparing tempting foods for me." I tell her to cook whatever she cares for so far as she herself is concerned, but to let me follow Terry. I think it must be a sort of lack of faith among the women-folks in thinking that we men-folks must have so many elaborate meals with lots of side-dishes to wash and put away, etc. I fear, too, that many of these good wives of ours are afraid of being "out of the fashion." You know women-folks have to dress in a way that thousands of them do not like, because they say they must follow custom or fashion—at least to a certain extent. Well, the younger ones can follow the style if they choose; but I am sure it is not necessary for people as old as Mrs. Root and I to follow all the changes of fashion.

Just one thing more about the "dull and sluggish" feeling. As warm weather comes on I find it a great help to change my heavy woollens for light and loose clothing. Frequent bathing is also a great benefit; and last, but by no means least, fresh cool air every *hour* of the day. May God help us, especially those of us who feel that we are growing old, to learn these important lessons in regard to health, especially along the line of diet. I feel sure that T. B. Terry is on the right track, or pretty nearly so, any way, because I meet people everywhere I go who are rejoicing in better health on a diet of uncooked food. My impression is there are thousands, if we could get their testimony, who are living on "wheat and butter," and not more than "9 ounces" a day at that. While in Florida a very bright and intelligent woman who was visiting in our locality walked to our cottage (two miles) on purpose to tender me her thanks for what T. B. Terry and I had done for her in giving her new life, courage, strength, and happiness. She had been living for a year or more on rolled wheat and pure olive oil. Friend Terry uses the olive oil, a good deal, in place of butter. In that way his diet is entirely vegetable. You may gather from the papers that some of the great athletes of the present day are gaining their strength, and keeping it, on a similar plain simple diet.

In closing, let me remind you once more of the thousands of good women who would be relieved from something that is almost a sort of *slavery* if people generally would adopt the diet recommended in the clipping I have given you. Of course, it takes some *courage* and *self-control* to forego all of these good things we are accustomed to, and which are constantly placed before us. It is true that many people seem to need a certain amount of sweets in their "balanced ration." Well, we bee-keepers have it right at hand, for honey is always *uncooked* food.

COLDS, GRIP, ETC.

A few days ago Mrs. Root asked if it could be really true that T. B. Terry and his wife never have colds nor the grip, as almost everybody does have all over the North, and to some extent away down in Florida. I told her I would write and see. Below is his reply:

*Dear Mr. Root:*—No, I do not have colds, grip, nor any other ill. There is no need of having them. I really can't remember when I had my last cold, or ill feeling of any kind. I hardly dare *think* how perfectly well in every way I am, to say nothing of *telling* the whole truth, it seems so marvelous. And still it is not. God means we should all be well through a long life. Ignorantly (often, of course) we sin and suffer; that is all. Common ways of living have gradually drifted far from the simple, wholesome, and natural. It was ignorance, from lack of thought, with me once; but the truth has gradually come as I sought earnestly for it. Right here let me say positively that there is no cross about proper living, as people are sure to think, at least for only a short time. I certainly never enjoyed my meals, sleeping, breathing, working, any better than I do now. My wife never has a cold at home. I have been away a week at a time, now and then, and got along all right. Nature allows a reasonable margin. Please notice article this week on strength directly from God. It simply must be so. And next week I am sure you will be deeply interested when you read how GLEANINGS saved a life, beyond question — has saved many, probably, but one special instance is given, and the truth in this case is even stronger than I put it. T. B. TERRY.

Hudson, O., May 8.

Even though this health talk is getting to be a little long I think the readers of GLEANINGS can afford to read the following, which we clip from Terry's talk in the *Practical Farmer* for May 16:

BROUGHT BACK FROM DEATH'S DOOR.

A middle-aged reader was troubled with indigestion and constipation by spells for some 20 years. At last he got seriously sick with typhoid fever. The doctor said there was no hope for him, but still he barely pulled through, and was able to sit up for a little after a few weeks. But his troubles were not over. Nothing could be found for him to eat that would not distress his stomach. He seemed unable to digest any thing. Food just lay in his stomach and decayed until it looked as though he must starve to death. Years ago my mother slowly starved to death in just this way. It was terrible, but we did not know how to save her. She had medicine and advice from the best doctors in Detroit. Now read our friend's words, exactly as written: "One day I happened to look into Mr. Root's bee-journal, GLEANINGS, and saw an article telling what you ate, copied from *The Practical Farmer*, I read it over at least a dozen times, I was so deeply interested. A little courage came back, and I thought that possibly there was a chance for me to live yet. I began eating a small amount of dry flaked wheat, uncooked, with olive oil and fruit, about 8 A.M.; then nut meats and fruit at 3 P.M., all most thoroughly chewed, and with much water drank between meals. I never before saw any thing like the change that took place. In one week I was much better in every way. In two months I was strong, and doing my work again. I can not express in words my gratitude to *The Practical Farmer*, Mr. Root, and yourself." This is from a private letter, but it is far too valuable to throw away. I am sure this good friend will pardon me for making the main facts public, so long as names have not been mentioned.

# HIGH-PRESSURE GARDENING

A. I. ROOT

THAT BIG CELERY STORY — SEE PAGE 511.

Well, friends, I have got some high-pressure gardening this time, "sure thing," as my colored boy Charley puts it. Just turn back to pages 566 and 567, May 1, and look at the pictures of that celery-farm of five acres, and now read the brief letter I succeeded in getting from friend Latimer, below:

*Dear Friend Root:*—I am very sorry I was not at the farm the day you were out to see it. I had gone to the depot to ship a car of celery at the time you were there, and did not find out that you intended writing up the farm until you had done so, although you seem to have gotten every thing down as it was, with two or three exceptions. One is my name being T. L. Latimer instead C. L. Latimer; and another, you say "I have reason to think he employs at least one or more expert men who know all about the business." The fact is, I did not have a man who ever tried to raise a celery crop in his life, on the farm at any time during crop season, including myself. I never tried to raise any vegetables until I came to Manatee Co., Fla., a little over a year ago.

Now in regard to marketing the crop, returns, and so on, that you ask me for. I will state that returns are not all in yet, having just shipped the last car this week, but may say the first acre netted over $1800; the others did not do that well, on account of the very dry spell of weather you spoke of in your journal when you were here, it being broken only this week by a 4-inch downpour of rain, the day I finished getting out the last car. While I kept it watered with artesian water the country around was very dry, and it affects it to some extent. And then prices were not so good toward the last. On the whole I did a good business — far better than I expected. On the first seven rows, that were 300 feet long, I cut 167 crates that netted $429.67, or over $61.00 per row. The rest of the celery was just as good, but I did not get as good prices for it.

We hope to have you back with us when Jack Frost comes again in the North, and we hope to get better acquainted with you.

There is a great temperance rally to-morrow just across the river at Palmetto, where a great revival has been going on for two weeks; and the evangelist, Mr. Bridges, starts one here next week that is destined to do great good in this town.

Bradentown, Fla., April 12. T. L. LATIMER.

The above is simply astounding. If I did not know the man and had not seen his celery and talked with his eighteen-year-old boy, I might find it hard to believe, myself. We who are "old and wise" have been saying right along that one can not hope to succeed in any business without practical experience. You must commence slowly and build up gradually. Well, that is good advice for most of the world; but this time one man and his eight children (do not forget about the *eight children*, I beg of you) went into a new region—in fact, into a tropical climate where they were entirely unacquainted with any thing or anybody, and actually worked up in a little over one year what I have been telling you. There is another secret to it besides the family of eight children, and I have purposely let you into it by leaving on the concluding paragraph of his kind letter. He is a man who does not drink, and never did drink, and his family follow him; and I gather, too, that he is never so busy in pushing his business but that he can keep track of it and be on hand when a great revival is under way. May the Lord be praised for such men. And this is not all of it, either. May the Lord be praised for the good woman who has taken charge of that family of eight children, and who stands back of brother Latimer for righteousness, temperance, and purity.

*Later.*—After dictating what I did in the above, my conscience began to trouble me somewhat. I was afraid that there would be many who would feel sure they could do something like what friend Latimer has done, and then would be sorely disappointed. Let me tell you, by way of caution, that all over Florida there are deserted homes, gardens, and fields where somebody has wasted a lot of money, and yet made only a failure. New comers in Manatee Co. many times say, "Why, where are your nice-looking gardens and wonderful crops?" And I confess I have made a lot of apologies and excuses; but when I take them over to my neighbor Rood's and let them see with their own eyes the possibilities of that region they have to admit all that has been told them. Then comes the question, "Why should so many fail when only a

few men here and there succeed?" I do not know, unless it is because so many go down there with a sort of idea that they can get a living in Manatee Co. without work. It is not true of that region nor of any other that I have ever visited.

---

CELERY VERSUS WHEAT.

The following, clipped from a letter written to a brother of the writer, "Stenog," brings out one point very plainly:

I like to look at the pictures in GLEANINGS. The one of the five acres of celery, for which $5000 was refused, makes the wheat-farms of Ohio seem sick. If five acres of wheat brought $100 it was considered a good crop. Moral—raise more celery and less of something else. F. J. ROOT.
545 North Grove St., East Orange, N. J., May 12, 1908.

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SWEET CLOVER AS A FORAGE-PLANT, FROM THE STANDPOINT OF THE FARMER AND STOCK-GROWER.

The two letters which are herewith appended appeared in the *Breeder's Gazette* for May 13. They are self-explanatory. Both tend to show that sweet clover, rightly considered, is one of the most valuable forage-plants we have. It may be added that the *Breeder's Gazette* is the leading paper of its kind in this country. Its large circulation will help to make sweet clover popular, or at least give it fair hearings. W. K. M.

SWEET CLOVER A BOON TO ALABAMA.

TO THE GAZETTE.—In your issue of April 29 J. D. Grimes condemns sweet clover (*Melilotus alba*) as a worthless weed, saying stock have to be starved to make them eat it, and that it is very difficult to destroy.

Here in the lime belt of Alabama we consider it one of the most valuable plants we have. Stock, when first placed in a pasture containing it, will not eat it; but they do not come anywhere near starving before they begin to eat. In many pastures there is nothing but melilotus, and these are nearly always the pastures that contain the fattest cattle in the neighborhood. Several of our best farmers depend upon it very largely for hay, cutting it when about 12 to 18 inches high. They say it is nearly as good as alfalfa hay if cut young enough, and their stock is just as fat as the stock that gets alfalfa for roughage. We find it no trouble to kill. One year in corn nearly always about clears the land of it.

As a soil-renovator we think it has no equal on thin lime land. I have seen land that would not make five bushels of corn per acre planted in melilotus for five years and then produce about twenty-five bushels per acre (nearly double the average Alabama yield). This land was pastured a part of the time, and the melilotus was cut for hay the other part.

Some of our most prosperous farmers say if they could have only one of sweet clover and alfalfa they would take the sweet clover. It will grow vigorously, and afford two or three fine cuttings of hay on land so poor that on it alfalfa will not get a start.

SHOTES LIKE SWEET CLOVER.

TO THE GAZETTE.—I have been reading the discussion in your journal about sweet clover, with considerable interest. I have had some experience with it. I sowed 20 acres some years ago to alfalfa. The seed contained a liberal percentage of sweet clover. It was a new thing to me, and every one told me that it was a noxious weed and would take the farm, so I decided to plow it up; but before doing so I pastured it one year with cattle. These cattle had the run of an adjoining 20 acres of wild grass. They kept down both alfalfa and sweet clover to the neglect of the wild grass. I plowed it up, and the clover disappeared without any trouble whatever. I do not think it as hard to kill as alfalfa by my means. The only place where it has remained is along the division fence where I have not molested it.

Adjoining this fence I have 30 acres of rye and 10 acres of blue grass on which I have been running 175 shotes. I have noticed that these shotes, which have an abundance of tender rye and blue grass, have kept this clover nipped close to the ground, while on the other side of the fence it is knee high. I should like to sow a field to it. Could you tell me where I could get the seed? J. G. KUNZ.
Hall Co., Neb.

REMARKS.—Write any seedsman whose advestisement has appeared in our columns the past few weeks.—ED. GAZETTE.

PAULOWNIA IMPERIALIS.

Our readers will remember our paulownia-tree that grew 16½ feet high the first season, but which, during the winter of 1906, killed down to the ground. Last summer I had given it up for dead; but I had one of my happy surprises along toward the first of June when a great strong shoot shot up close to the base of the old tree. A little later, several shoots started likewise. Of course, I took away all but one. The shoots looked so rank and thrifty that it occurred to me they might be put in damp sand and started as we start cuttings. The plan proved to be a success. Almost every one took root; and last fall, when I started for Florida, I had 25 little trees, one foot and under, planted in a bed of rich ground north of my automobile-house. Before leaving I gave particular directions to one of the men to be sure to mulch the little trees with coarse stable manure before hard freezing; but during my absence it was not attended to, and so I was afraid all of my little trees were winter-killed. At this writing, however, May 1, I am greatly pleased to find almost every one of them alive and sending up great strong shoots.

Now, here is something in regard to this same tree in Mississippi:

I wish grandpa Root could see a paulownia imperialis that is in my back yard. It is 18 inches in diameter, and has been in full bloom since April 1. There is no greater honey-tree than this. The bees work on it from daylight until night drives them in. They even work on it when it is raining, as the flowers hang downward and the nectar does not wash out. R. V. GOSS.
Verona, Miss., April 15.

Many thanks for your report, friend G. I am glad to know you succeed so well with them. I have been wanting to try them in our Florida home, but have not yet got at it. It makes such a tremendous growth in a season *here* (16½ feet tall with leaves over a yard wide) that it is worth while to plant them, even if they should winter-kill down to the ground nearly every season. In that event, however, of course we could not get any bloom for honey.

I got my first trees of George W. Park, of Lapark, Pa. He has not only the trees for sale, but the seed for planting; but he tells us the seed is a week in germinating, and I am under the impression that it requires special treatment. I think propagation by cuttings will be the quickest and surest way.

---

JELLY-MAKER VS. GLUCOSE TRUST.

The Corn Products Co., manufacturers of glucose, is in a controversy, it seems, with makers of low-grade pail jellies, among them the American Preserve Co., of Philadelphia, a chief antagonist to the glucose concern.

The controversy has arisen because the Corn Products Co. has embarked in the business of manufacturing compound jellies which, it is reported, it is selling at prices lower than those made by the regular manufacturers of jellies. The American Preserve Co. resents what it contends is an encroachment upon its business. It charges the Corn Products Co. with entering the jelly-field in order to compel regular jelly-manufacturers to buy their glucose from it.

The Corn Products Co. asserts that it has a perfect right to go into any business that it likes. —*Grocers' Criterion.*

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STOP AT
HOTEL TULLER
New and Absolutely Fireproof
Corner Adams Ave. and Park St.

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SEABOARD AIR LINE RAILWAY SEABOARD AIR LINE RAILWAY

WE WILL SEND TO YOU FREE.

This handsomely illustrated, fifty-page booklet containing a most interesting description of the famous Manatee section, being a reproduction of a series of articles written by the editor of one of the leading agricultural papers in the United States after a personal investigation by him. The articles were run in serial form in his publication during the last four months, and we have embodied same in an attractive pamphlet, illustrating it with dozens of interesting and instructive scenes from actual life. This handsome piece of literature will be thoroughly enjoyed and worthy of preservation, and will be sent free, together with pamphlet containing a list of properties available in the LAND OF MANATEE upon receipt of five cents in stamps or currency to cover cost of mailing. Our supply of this booklet is limited, and if you want a copy you should not delay, but write at once.
J. W. WHITE,
General Industrial Agent
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Dept. F PORTSMOUTH, VA.

THE "BEST" LIGHT
A portable, pure white, steady, safe light. Brighter than electricity or acetylene. 100 candle power. No grease, dirt nor odor. Lighted instantly. Costs 2 cts. per week. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog. Do not delay.
THE BEST LIGHT CO.
306 E. 5th St., Canton, Ohio
MAKES AND BURNS ITS OWN GAS

THE "KANT-KLOG" SPRAYERS
Something New. Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same Nozzle. Ten styles. For trees, vines, vegetables, whitewashing, etc.

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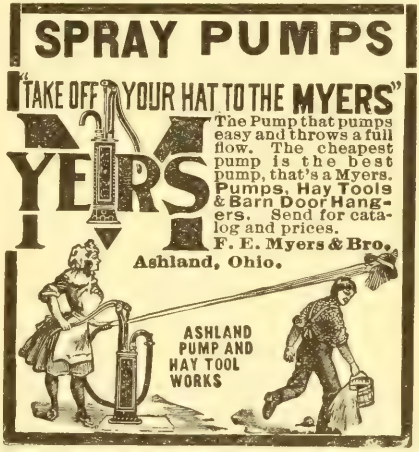


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The Dumper Post-cards are something new. All who get them can make money with them; we will tell you how to make 50c from the twelve you get if you care to part with them. Also, we will tell you how to enter profitable employment in your own locality or elsewhere, and make $3.00 to $5.00 a day.

**Our Offer** This big offer is made for a limited time only, so send your order to-day. We will send *UP-TO-DATE* to your address six issues, and 12 Dumper Cards—all for 10c. Get in on this if you want to make a hit and earn the extra money. Only one set to a family;

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**NO MONEY REQUIRED** until you receive and approve of your bicycle. We ship to anyone, anywhere in the U. S. *without a cent deposit* in advance, *prepay freight*, and allow **TEN DAYS' FREE TRIAL** during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle you may ship it back to us at our expense and *you will not be out one cent.*

**FACTORY PRICES** We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save $10 to $25 middlemen s profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from *anyone* at *any price* until you receive our catalogues and learn our unheard of *factory prices* and *remarkable special offers* to **rider agents.**

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**SECOND HAND BICYCLES.** We do not regularly handle second hand bicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from $3 to $8 or $10. Descriptive bargain lists mailed free.

**TIRES, COASTER-BRAKES, single wheels, imported roller chains** and **pedals,** parts, repairs and equipment of all kinds at *half the usual retail prices.* **DO NOT WAIT,** but write today and we will send you **free** by return mail our **large catalogue,** beautifully illustrated and containing a great fund of interesting matter and useful information; also a *wonderful proposition* on the first sample bicycle going to your town. It only costs a postal to get everything. **Write it now.**

**MEAD CYCLE COMPANY Dept. S113 CHICAGO, ILL.**

# A NEW HIVE-TOOL

Hitherto we have said very little about our new hive-tool, but after submitting it to some of the foremost bee-keepers of America for their candid opinion—for or against—the universal verdict is that it is a good thing; though it looks like a very simple tool it is very surprising how useful it is to an apiarist. The bent end, for example, is just right for severing Hoffman frames. A slight twist of the wrist does the business without angering the bees, and one's hand is so placed the bees do not see it. For scraping wax and propolis nothing could be finer, and it is better than a chisel, screwdriver, or putty-knife for opening hives. Any bee-keeper will be glad of one in his pocket ready for all occasions. It is made of the finest hardened steel nickel plated.

## Sample Testimonial:

*Mr. Root:*—I have been using your nickel-steel hive-tool this spring, and am very much pleased with it. It is the best thing I have tried yet. I, with my helper, have been using tack-pullers heretofore; but this is better because so much stronger. It leaves nothing to be desired except that there should be a hole in it a little nearer the crooked end. I tried to get one drilled but had to give it up—too hard; so I fastened a strap around it to fasten to my pants button.

Oberlin, Ohio. CHALON FOWLS.

**Price 50 cents postpaid Hive-tool, and Gleanings for a year, $1.25.**

**THE A. I. ROOT COMPANY, . . . . . MEDINA, OHIO.**


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Save time, horses, work and money by using an

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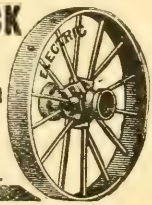


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**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND

**AN IMMENSE STOCK OF HONEY-CANS**

(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

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| 12-in 4-row shipping-cases with 3-in. glass . . . | $17.00 per 100 |
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| 6¼-in. 3-row shipping-cases with 3-in. glass . . | 9.80 per 100 |
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## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 27 cts. cash; in trade, 30 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**The Great Word Contest.** More than a thousand persons entered our word contest; and as a result we have had to engage the services of an expert to determine the winners. We can not report in time for this issue, but hope to be able to announce them in the issue of June 15th—watch for it.

**UDO & MAX TOEPPERWEIN**

1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

# ITALIAN Queens

and bees, and nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Our stock is northern-bred and hardy. We just visited our outyards (all wintered on summer stands), and not a colony is dead to date (March 18). Some hives have lost scarcely a bee, so it appears. BROTHER BEE-KEEPER, how do you like such stock for hardiness? A party up in Maine got 50 nuclei of us several years ago. We just received a letter from him. He is after more of our bees, because last season he got 2200 pounds of honey which sold for 22 cts. per pound. Our stock is well known throughout the United States. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Free circular and testimonials. Price of stock as below.

| Prices of Queens before July. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $1 00 | $5 00 | $ 9 00 |
| Tested queens | 1 50 | 8 00 | 15 00 |
| Select tested queens | 2 00 | 10 00 | 18 00 |
| Breeders | 4 00 | | |
| Golden five-band breeders | 6 00 | | |
| Two-comb nuclei, no queen | 2 50 | 14 00 | 25 00 |
| Three-comb nuclei, no queen | 3 50 | 20 00 | 35 00 |
| Full colonies on eight frames | 6 00 | 30 00 | |

ADD the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

## QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio

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## ITALIAN QUEENS

Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J. L. FAJEN, . ALMA, MO.**

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## Queens from Southwest Florida

From very best stock, furnished by The A. I. Root Co.; reared on the island where A. I. Root was formerly located. Prompt shipments and correspondence solicited. I. T. SHUMARD, Osprey, Manatee Co., Fla.

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## Queens FOR 1908.

Finest Goldens bred in America. Send for my latest circular and prices — "and be convinced."

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## Golden Italian Queens, $1;

**Six for $4.50.**

Safe arrival and satisfaction guaranteed. 18 years' experience. Circular.

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My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $5.00 | $9 00 |
| Select untested | 1.25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.

Positively all orders filled in rotation.

**Wm. A. Shuff, 4426 Osage Ave., Philadelphia, Pa.**

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## Taylor's Strain of Italians is the Best

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3 00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

J. W. TAYLOR & SON, Beeville, Bee Co., Texas.

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## NOT CHEAP QUEENS, BUT QUEENS CHEAP

**500 Best Strain Italian Queens Ready to Mail March 1st.**

Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK, ARK.**

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## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, 75 cts.; tested, $1.00.

New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.

# QUEENS

**GOLDEN AND CLOVER STOCK.**

Prices for May and June: Choice queens, $1.00 each, 6 for $5.00, or $9.00 a doz.; after July 1st, 75 cents each, 6 for $4.00, or $7.50 a doz. Tested queens in May and June, $1.50; after July 1st, $1.25. Two-comb nucleus, no queen, $2.00; three-comb nucleus, no queen, $2.50. Full colony on eight frames, no queen, $5.50. Five per cent discount on five, ten per cent on ten or more.
CATALOG FOR 1908 FREE. SEND FOR ONE.

**GEO. W. BARNES, box 340, NORWALK, OHIO**

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ITALIAN

# QUEENS

Having purchased the apiaries and queen-rearing business of Mr. A. E. Titoff, at Ioamosa, Cal., I hereby politely tip my hat to the bee-keeping world and wish to say that I shall use every endeavor in my power to serve you faithfully and honestly.

Send for circular and price list.

Yours for the best queens and bees,

**E. M. GRAVES,**

**Ioamosa, San Bernardino Co., Cal.**

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## Westwood Red-clover Queens

Are the bees that got the honey in 1907.
Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

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**W. H. Laws** is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled. Testimonials enough to fill this book. If you are going to improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10 00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

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**ITALIAN QUEENS BY RETURN MAIL OR MONEY REFUNDED.**

Warranted, $1.00 each, six for $5.00; tested, $1.50 each. Circular free.

**D. J. BLOCHER, PEARL CITY, ILL.**

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**MILLER'S SUPERIOR ITALIAN QUEENS**

By RETURN MAIL; bred from best Red-clover working strains in U. S. No better hustlers; gentle, and winter excellent; untested, from my SUPERIOR breeder, 1, $1.00; 6, $5.00; 12, $9.00. After July 1st, 1, 75c; 6, 4.00; 12, $7.50. Special prices on lots of 50 or more. Satisfaction and safe arrival guaranteed. Circular free.

**ISAAC F. MILLER, :: Reynoldsville, Pa.**

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# Queens Queens

of the

## FINEST POSSIBLE BREEDING

BRED BY

**F. J. WARDELL,**

**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen | $1.25 |
| Select untested queen | 1.50 |
| Tested queen | 2.50 |
| Select tested queen | 3.50 |
| Breeding queens | 6.00 |
| Select breeding queens | 9.00 |
| Extra select " 1 year old, | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

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# 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders, $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

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# When You Need Queens and want Your Order Filled By Return Mail.

Three-band Italians bred for business. Tested, $1.00; untested, 75c; $8.00 per doz. Send for price list.

**J. W. K. SHAW & CO.,**

**Loreauville, Iberia Pa., La.**

# HIGHLAND FARM QUEENS

are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey Highland Farm queens will produce them. We are now booking orders which will be filled in regular rotation, beginning May 15. You should get in line by placing your orders early, and avoid the rush of the busy season. Single queens, $1.00; 6, $5.00; 12, $9.00. Safe delivery and satisfaction guaranteed.

For further information send your address on a postal card to

**HIGHLAND BEE AND POULTRY FARM,** J. E. HAND, Proprietor, **BIRMINGHAM, ERIE CO., O.**

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CAUCASIAN **QUEENS** ITALIAN

*1905-1906 Queen-breeder in Apiary of Dept. of Agriculture, Washington, D. C.*

Caucasians from imported queen of gray type. Three-band or leather-colored variety of Italians.

All good honey-gatherers

PRICE LIST BEFORE JULY 1.

GRAY CAUCASIANS.

| | | | |
|---|---|---|---|
| Untested queens..... | 1, $1.00; | 6, $5.50; | 12, $10.00. |
| Select untested queens... | 1.25 | 6.75 | 12.75. |

THREE-BAND ITALIANS.

| | | | |
|---|---|---|---|
| Untested queens..... | 1, $ .75; | 6, $4.25; | 12, $ 8.00. |
| Select untested queens... | 1.00 | 5.50 | 10.00. |

SAFE ARRIVAL AND ENTIRE SATISFACTION GUARANTEED.

*No bee disease* ever in this section. Descriptive circular and testimonials free.

**LESLIE MARTIN, :-: Birdcroft Apiaries, :-: LEBANON, TENNESSEE.**

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# CARNIOLANS, BANATS, ITALIANS.

**Carniolans.**—Our strain of Carniolans has been *line-bred* for 23 years, and they are very gentle, hardy, prolific, great honey-gatherers, and builders of white combs. One untested queen, $1.00; 6 for $5.00; 12 for $9.00.

**Banats.**—This new race of bees is gentle and hardy; the bees are good honey-gatherers, and builders of white combs, and are not inclined to swarm like other races of bees. One untested queen, $1.50; 6 for $7.50; 12 for $12.00.

**Italians** are from best imported stock; prices the same as Carniolans. NO DISEASE, AND SATISFACTION GUARANTEED.

**F. A. LOCKHART & COMPANY, :: LAKE GEORGE, N. Y.**

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CHOICE

# QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3 00.
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

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## If You are Located in

# West Virginia or Ohio

or anywhere else, order ROOT'S GOODS from PEIRCE and save time and freight.

**EDMUND W. PEIRCE,**
**136 W. Main St., Zanesville, O**

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**DON'T WORRY OVER MONEY MATTERS** but send for sample copy of Inland Poultry Journal and let us tell you how to make money out of poultry. Two full pages in colors, reproductions from oil paintings that cost us $1000.00. They are FREE.

**Inland Poultry Journal Company**
**15 Cord Building, - Indianapolis, Ind**

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# Bee-keepers' Supplies Sold

At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. **W. D. SOPER, Jackson, Mich.**

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Big Stock of Root Co. and Marshfield Co.

## BEE-SUPPLIES AT FACTORY PRICES

to close out on account of poor health. Parties sending me cash order for $15.00 or over before June 30, I will give 10% off. If not enough in stock to fill order, will order balance from factory and give 5% off on same.

**S. D. BUELL, . . UNION CITY, MICH.**

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# BABY CHICKS

**WE'VE GOT 'EM—YOU WANT EM.**

Eight varieties of strictly standard-bred day-old chicks. From choice eggs. No purer blood ever wore feathers. Every Tuesday a hatch day. Kindly enclose two-cent stamp for catalog.

**Ohio Hatchery and Mfg. Co., box 40. Bel'evue. O.**

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Situations Wanted

SITUATION WANTED.—Work in apiary for young man of good habits who has taken course in bee farming at Massachusetts State Agricultural College.
BOX 2076, GLEANINGS, Medina, Ohio.

## Help Wanted

WANTED.—Young man, single, all around work on farm and bee-yard. If not experienced in heavy bee work do not apply. State wages, how soon can come, what can do, etc. Job good to Oct. 1st, possibly longer. W. P. SMITH, Penn, Miss.

WANUED.—A young man experiencd in bee culture and the bee-supply trade, who desires a position in the central West. Good opportunity for one who can furnish unquestioned references as to ability and worth.
Box B, care of GLEANINGS IN BEE CULTURE, Medina, O.

## Poultry Offers

FOR SALE.—White Wyandottes, best breeding, 15 eggs, 75 cts.; 30, $1.25. J. F. MICHAEL, Winchester, Ind.

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

Fifteen S. C. B. Leghorn eggs given free with every order for six or more queens if mentioned with the order. See advertisement, page 481. Regular price for eggs, $1.00 per 15; $1.25 per 30; positively by return express.
J. E. HAND, Birmingham, Ohio.

## For Sale

FOR SALE.—One Scotch collie bitch and three collie pups.
C. E. RAINS, Hutsonville, Ill.

FOR SALE.—Mated thoroughbred homer pigeons at $1.00 per pair. FRANKLIN G. FOX, Erwinna, Pa.

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—300 lbs. Dadant's thin brood foundation, size 8x17 inches. C. J. BALDRIDGE, Kendaia, N. Y.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

FOR SALE.—60 8-frame L. Root bodies, with Hoffman wired worker combs; 75 comb-honey supers; 30 Root slatted 8-frame excluders. C. E. CROWTHER, N. Kingsville, Ohio.

FOR SALE.—Extractor, Novice, upright gearing, perfect order.
THEO. JENNINGS, 25 Park Place, New Rochelle, N. Y.

FOR SALE.—200 cases of 5-gallon cans. All are free from rust inside, and the majority have been used but once. Two cans in a case; 10 cases or more, 25 cts. per case.
J. E. CRANE & SON, Middlebury, Vermont.

FOR SALE OR EXCHANGE.—Perfectly new, latest Oliver typewriter, 12-in. No. 5, with metal carrying-case, at agent's prices, or will exchange for bees, nuclei, or bee-supplies that I can use. G. W. HARRIS, Jefferson, N. Y.

FOR SALE.—Best Wisconsin sections, 1000, $4.00; 2000, $7.75; 3000, $11.00; 5000, $17.50; No. 2, 50 cts. less; plain, 25 cts. less, 24-lb. 2-in. glass shipping-case, 14 cts. Catalog free.
H. S. DUBY, St. Anne, Ill.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cents each, postpaid. FRANK ALEXANDER,
Delanson, N. Y.

FOR SALE.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.
KENSINGTON CATTERY, Marion, Ohio.

Don't bother with cans. Kegs are cheaper and easier to fill and handle. 160-lb. pine kegs, with 2-in. hole and plug, 50 cts. each, f. o. b. factory. Orders given prompt attention. Send list of supplies needed. I can save you money.
N. L. STEVENS, Moravia, N. Y.

FOR SALE.—75 eight-frame Root hives with good worker combs; used two seasons; also lid and bottom; $1.60 each. One hundred 4¼ supers, trimmed with sections and foundation; used one season; 40 cts. each. Sixty 10-frame hives and five Danzenbaker hives, with combs wired, all Root's goods, $1.75 each, without super. Thirty 8-frame supers, trimmed, $3.00 each.
H. A. ROSS, Evansville, Indiana.

## Comp'ete House Plans

Complete blue-print plans, $10. For concrete cottage: Six rooms; bath; full basement. Est. cost, $1200. Circular free.
CHAS. JAMISON, 444 Board of Trade, Indianapolis, Ind.

## Real Estate for Bee-keepers

FOR SALE.—Five acres of ground, eight-room house, barn, chicken-houses, carriage-shed, vinegar-cellar, honey-house with all appliances, and 150 stands of bees.
C. R. ELLIS, Mancos, Colo.

## Wants and Exchanges

WANTED.—Several pairs of gray squirrels. State price.
JOHN RICK, 434 Oley St., Reading, Pa.

WANTED.—Refuse from wax-extractors and old combf or cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Low-priced extractor for L. size frame. Name price. C. B. THWING, Heed Bldg., Philadelphia, Pa.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

WANTED.—I desire to secure a location for an apiary in New York State. Prefer location near a small town. Will buy a place with or without bees and fixtures. Give full particulars and lowest cash price. Apiary or locality must be free from disease. Box F, care of GLEANINGS, Medina, Ohio.

## Bees and Queens

Untested queens (shipped from South), 60 cents each. Also bee-supplies. List free. A. RATTRAY, Almont, Mich.

FOR SALE.—100 Heddon supers, wired combs, for 50 cents each. W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Italian and Carniolan queens, untested, 75 cts.; tested, $1.00. GEO. E. KRAMER, Valencia, Pa.

FOR SALE.—Italian queens, hustlers. Untested, 65c; tested, $1.00. MRS. J. W. BACON, Waterloo, N. Y.

Italian queens, untested, 75 cts.; tested, $1.00; 2-frame nuclei, with queen, $2.50. E.M.COLLYER, 75 Broadway, Ossining,N.Y.

FOR SALE.—100 colonies of Italian bees at $6.00 per colony; ten or more, $5.00 each. G. H. ADAMS, Mill St., Bellevue, Schenectady, N. Y.

FOR SALE.—150 colonies of bees in uniform hives, free from disease. Also 150 empty hives. S. E. TENNANT, Schoharie, N. Y.

FOR SALE.—Northern-bred red-clover queens. Untested, 75 cts.; tested, $1.00. E. S. WATSON, R. F. D. No. 2. Madison, Maine.

FOR SALE in June.—75 fine tested 1907 queens, best red-clover stock. One, $1.00; 5, $4.50. First and last call. E. W. DIEFENDORF, Otterville, Mo.

FOR SALE.—8 colonies of Italian bees, strong and healthy with plenty of honey, no disease, ready to do business at once. All in good standard hives. Will sell cheap. A. L. CLAPP, Lodi, Ohio.

FOR SALE.—Selected young Italian queens, bred for superiority in honey production instead of color. Single queen, 75 cts.; 6 for $4.00; one dozen for $7.50. Also Golden all over, Cyprians, Carniolans, and Banats. JULIUS HOPPEL, 414 Up. 4th St., Evansville, Ind.

Save money by getting full colonies and nuclei; also one pound of bees and queens of same strains, bred in Medina apiary, from Mechanic Falls branch. J. B. MASON, Mechanic Falls, Me.

FOR SALE.—After May 15, Italian, Carniolan, Caucasian queens, untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Nuclei, after June 10, 1, 2, 3 frames, including queens, $2, $3, $4. Orders booked now. (Stamps not accepted.) EDWARD REDDOUT, Baldwinsville, N. Y.

## Honey and Wax for Sale

FOR SALE.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE—White comb honey, No. 1, average 23 lbs. to the case of 24 sections, $3.25 per case; amber, $2.50. Fancy white extracted in 60-lb. cans, 10½ cts.; amber, 9½. HAROLD HORNOR, Jenkintown, Pa.

FOR SALE.—Choice extracted honey for table use — thick, well ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts. J. P. MOORE, queen-breeder, Morgan, Ky.

## Honey and Wax Wanted

WANTED.—White ripe extracted honey; will pay cash. GEORGE RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water Street, Chicago, Ill.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden Italian queens, 75 cts. each. Satisfaction guaranteed. WALTER S. HANS, 1127 Blaine Ave., Indianapolis, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

SWARTHMORE Golden-all-over queens—the famous original stock. Queen-rearing outfits and books; 40-page catalog. E. L. PRATT, Swarthmore, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND, Birmingham, Erie Co., Ohio.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Mott's long-tongued Italians are climatized to cold winters yet gentle and hardy. Circular free. E. E. MOTT, Glenwood, Mich.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.— Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# SPECIAL NOTICES

## BY OUR BUSINESS MANAGER

We have just received a special importation of Italian queens. As other importations are coming we shall be in position to send this year's stock.

We are issuing an appendix to our little book, "Modern Queen-rearing." To those who have already purchased this work we will furnish the appendix for 2 cts. to cover postage.

The Alexander bee-veils are proving to be very satisfactory. They are just the thing for extremely warm weather, because they can be worn without a hat, thus avoiding the unpleasant sweat-line around the forehead where an ordinary hat is worn. Price 72c postpaid.

### FOUNDATION SPLINTS.

Some have been writing Dr. Miller for foundation-splints. He does not have them for sale. We are prepared to furnish them for 10 cts. per 100, 50 cts. per 1000 postpaid, or 40 cts. per 1000 with other goods.

### MISMATED CAUCASIAN QUEENS.

At our south yard we had quite a number of mismated Caucasian queens, a cross between our leather-colored strains of Italians and Caucasians. There may be some who desire this mixture. So long as they last we will furnish them for $1.00 each. When we run out we will take the liberty of substituting an untested Italian.

### SPECIAL BARGAINS.

We call your attention to a page of special bargains in bee-keepers' supplies—some styles not listed at present in our catalog, but which are preferred by some. Most of these goods are offered at reduced prices. If you see any thing you can use, let us have your order and we will see that the goods are promptly forwarded. See our issue for May 1.

### HIVE NUMBERS.

We can supply hive numbers with figures 1⅝ inches high, printed on tough cardboard, then boiled in paraffine so as not to be injured by the weather. They may be fastened to the hive with tinned tacks. We have them in sets up to 400 numbers. Price $4.00 per set postpaid, or $3.50 with other goods; 100 postpaid, $1.15, or $1.00 not prepaid; 50 postpaid for 65 cts.; not prepaid, 60 cts.

### BEESWAX.

For good average beeswax shipped before the middle of June we will pay 29 cts. per lb. cash, or 31 in trade delivered here. The season is so far advanced that we make this raise of 1 ct. per lb. for two weeks only, because we do not want to stock up at the close of the season at high prices. If you have any to furnish send it on at once and secure this temporary rise in price.

### CARTONS FOR OUNCE CAKES OF BEESWAX.

We can supply cartons for one-ounce cakes of beeswax, printed with name and address blank, at 35 cts. per 100; 250 for 80 cts.; 500 for $1.50; 1000 for $2.75; by mail, 15 cts. per 100 extra. These prices will also include the large carton to contain 32 of the small ones. The complete package weighs 2 lbs., and, when filled, sells to the dealer at $1.00. They retail the cakes at 5 cts. each. Retinned molds for molding ounce cakes cost 35 cts. per dozen; by mail, 40 cts.; for two-ounce cakes, 40 cts.; by mail, 50. We do not have cartons to fit the two-ounce cakes. To print your name and address on the cartons will add, 250 or less, 50 cts.; 500, 75 cts.; 1000, $1.00.

### BUSINESS BOOMING.

There has been an unusual amount of swarming this season, and in many localities it has been about a month early. As a result, there has been an unexpected demand for hives. Our capacity has been taxed to its utmost, running 11 hours a day, and still many customers have been disappointed in time of delivery. Such seasons as this emphasize the importance of being forehanded and better prepared for emergencies. Dealers need to carry larger stocks, and bee-keepers should anticipate their needs longer in advance. The foresighted people who order in the fall and early winter, taking time to get their goods, not only at reduced prices, but also in time to prepare them for use in leisure time ready for use when the season opens, are the fortunate ones in a time like this. We have a good supply of sections ready for prompt shipment, also of most other goods except hives and supers. Some of our dealers have been obliged to hold orders waiting for fresh stock to arrive, and we have been unable to ship as promptly as we should like, because of our inability to turn the goods out fast enough.

### SIMPLEX HONEY-JARS.

The factory people have advised us of a carload of these jars as already on the way to us, with more to follow in due course. By the time your order reaches us we shall have a supply in the warehouse, ready for instant shipment. They will be packed in reshipping-cases of two dozen each, and the price will be $1.10 per case; six cases, $6.30.

### NO. 25 HONEY-JARS.

During the past year we have had an unusual amount of trouble with breakage of this jar, even in the reshipping-cases packed with corrugated paper. The breakage occurred either in the porcelain cap or the top rim of the jar where the cap rests. We find we can get this same jar with lacquered tin cap without the center being cut out. This cap is lined with a waxed paper wad which seals tight on the top edge of the jar. This style of cap not only does away with nearly all breakag, but enables us to furnish the jar at a lower price. We are now ready to fill orders. They will be packed as usual, two dozen in reshipping partitioned cases. No. 25 jars, tin cap lined, 90 cts. per case; 6 cases, $5.10. We can still furnish from stock the usual style of No. 25 with porcelain caps at $1.10 per case; 6 cases, $6.30.

### JAPANESE BUCKWHEAT.

The season for sowing buckwheat is at hand. We have a choice lot of seed grown for us last season, which we offer, bags included, at 15 cts. per pound, postpaid; not prepaid, 5 cts. per lb.; 45 cts. per peck; 85 cts. per half-bushel; $1.50 per bushel; 2 bushels, $2.50; 10 bushels, $11.50.

### BEES AND FRUIT.

We have just issued from the press a new booklet by E. R. Root on the subject of the bee-keeper versus fruit-grower, explaining how their interests are mutual; also how the fruit-grower can keep a few bees to pollenate his fruit-trees and not be troubled with swarming. This booklet is nothing more nor less than an address delivered by Mr. Root for the Ohio Agricultural Society, at Columbus, comprising not only horticulturists but pomologists of note throughout Ohio. He introduced a large amount of evidence going to show that there is no direct antagonism between the fruit-grower and the bee-keeper — that their interests are mutual and interrelated, and to a great extent one depends on the other

While Mr. Root spoke from the standpoint of a bee-keeper, yet he was surprised to learn that the fruit-growers not only indorsed every statement he made, but furnished a considerable amount of additional data.

He also explained how the fruit-grower can keep a few bees to pollenate his trees without swarming, and at the same time secure quite a little crop of honey. All this and more is set forth in the booklet mentioned above. It belongs to our ten-cent library; but in case a bee-keeper is having trouble with his neighbors these booklets will be furnished at a very liberal reduction; namely, $1.50 per 100 by express or freight with other goods, or $2.00 per 100 postpaid. Much of the evidence furnished is from fruit-growers of experience and standing; and a few of these booklets distributed in a neighborhood will do much good.

SECOND-HAND FOUNDATION-MILLS.

We have to offer the following second-hand foundation-mills in good condition. We shall be pleased to hear from any one interested. To such we can send a small sample of comb foundation representing the kind of work produced by the particular machine you inquire about.

No. 079.—6x2½-inch hex. cell thin-super mill, in very good condition. Price $12.00.

No. 078.—6x2½-inch hex. cell thin-super mill, in good condition. Price $12.00.

No. 086.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $12.00.

No. 075.—2x9 hex., very old style, on frame with wood base; in fair condition. Price $10.00.

No. 085.—2½x6 hex. thin-super mill, in good condition. Price $12.00.

No. 086.—2½x6 hex. extra-thin-super mill in extra-good condition. Price $15.00.

No. 096.—2½x10 hex. light-brood mill; almost new; in fine condition. Price $20.00.

No. 097.—2½x10 hex. light-brood mill; in fine condition. Price $18.00.

No. 077.—10x2-inch medium-brood round cell, old-style frame, in good condition. Price $14.00.

No. 092.—6x2½-inch hex. cell extra-thin-super mill, in fine condition. Price $15.00.

No. 2275.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $13.00.

# Special Notices by A. I. Root

"AGE AND EXPERIENCE."

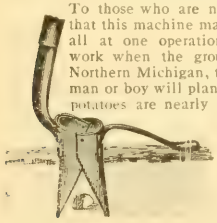
Huber suggested, after reading my Travels, on another page, that I failed to mention that, when I reached Medina, I found my steering apparatus badly broken in consequence of running at break-neck speed over roads unfit for travel, notwithstanding my "age and experience." He says I also neglected to say that Ernest carried *five* passengers while I had none.

THE NEW TESTAMENT IN SPANISH AND ENGLISH.

After my trip to Cuba, my account of the help received in learning the Spanish language from the above little book caused the sale of a great number of them. You not only learn the language by the use of this book, but you are at the *same time* getting a knowledge that is of more importance than all the languages on the face of the earth—namely, something about the trip that we are all taking (or ought to be taking) from earth to heaven Price 25 cts.; by mail, 35.

THE ACME HAND POTATO-PLANTER.

As we are now out of the seed-potato business we offer about four dozen Acme potato-planters at a big bargain to close out.



To those who are not familiar with them we will say that this machine makes the holes, and drops and covers all at one operation. Once over the field does the work when the ground is fitted. In the soft soil of Northern Michigan, the great potato region, one expert man or boy will plant two acres in a day. Up there the potatoes are nearly all planted with this little implement. A year ago we offered them at 55 cents each, or three or more at 50 cents each, or one dozen for $5.25. While they last we will make you a price of 45 cents each, or three planters for $1.20, or a crate of 12 for $4.00. If you want them at the above price you had better get your order in before they are gone.

"GRAFT" AND THE EXPRESS COMPANIES.

In looking over one of the day-old-chicks catalog which gives the amount of express charges to different points from New Washington, Ohio, it seemed to me the charges were excessive. For instance, 25 chicks in a little pasteboard box weighing only 3 lbs. was not less than 50 cents *anywhere*, even to the next station. I presume they charge a little more because the chicks must be delivered within three days. Even if this be true, it seems to me the charge is double what it should be, or more than that. Here is something from the *Farmers' Guide* of April 18. It is clipped from a two-column article:

"By a recent opinion and order issued by the Indiana Railroad Commission, express rates in the State are to be reduced on an average of between 10 and 12 per cent. New schedules according to this reduction will be adopted by the express companies within the next thirty days.

"The opinion handed down in this case is one of the most elaborate ever issued by the Indiana Railroad Commission. It is interesting in that it lays bare the history of the express companies from the time that they were first instituted up to the present time. The commission reports that it was with considerable difficulty the investigation was carried on, as very little volunteer information could be secured. Therefore the facts had to be dug up as best they could. Nevertheless, they seem to be quite complete, and will, we think, give the public a new idea of what a universal robbery and public hold-up game the entire express business is."

I should be glad to give the whole article, but a lack of space forbids. In going over this matter in conversation with the Reasoner Brothers, the great nurserymen in tropical plants, Mr. Reasoner commended our editorials in regard to parcels post; and, approaching his desk, he spoke something as follows:

"The whole world knows that the charges of the express companies are out of reason. But that is not all. There is a universal steal going on all over our land in order to get *even more* than these outrageous prices. See here."

He picked up a lot of papers strung on a wire, and resumed:

"There has been so much overcharging that I send a printed slip with every shipment, giving the correct amount of expressage, and asking my customers to report at once to me if the agent asked for a larger amount. And here is all this pile of complaints. It would seem that almost every time there is an overcharge, and most people consider it more trouble to readjust and collect than the amount is worth, and so they let it go. Now, this discourages purchasers, clogs our business, and is an outrage on society in general."

I hope the *Guide* and other periodicals will continue to expose and hold up this outrage until we have parcels post in spite of all the express companies with their wealth can do to stop it.

THE WRIGHT BROTHERS AND THEIR FLYING-MACHINE

I suppose most of the friends have kept posted in regard to the Wright Brothers, for their exploits have been given in all the papers of the United States. The Wright Brothers themselves have not seen fit to make any report of their doings; but if the reporters are to be credited, who witnessed their flight (of course at a distance), they have made a record of eight miles in 7¾ minutes, which is a little over a mile a minute. They have also a machine that carries two people sitting up as one would in a buggy or an automobile. Lastly they made a trip out over the ocean, two miles and back; but their machine was finally disabled by an accident, obliging them to lie off for a time for necessary repairs; but as they have other machines here in Ohio, however, we shall expect to hear from them further very soon.

*Later.*—Since the above was dictated we find the following in the Bangor, Me., *Weekly Commercial:*

Thursday's experiments proved but a repetition of Wednesday's achievements, when the dauntless aeronauts accomplished four successful flights, two of them after sunset, covering three and a half to four miles each time, and doing four miles down the coast in two minutes and fifty seconds at an altitude of forty feet. The aeronauts alighted each time, moreover, at the place of starting.

Thursday's flights were satisfactory to the inventors, and both the morning and afternoon were utilized. The inventors were astir early, and had their airship ready and in operation at an hour when it was impossible for the visitors to reach the immediate neighborhood of Kill Devil from Manteo, a place where strangers can be domiciled, a good dozen miles across the sound. Every thing favored the test.

The inventors will continue their experiments there as long as they can do so without being hampered by too many curious eyes. The aeronauts are afraid some one may learn their secret, and they are taking no chances in safeguarding the machine. They keep it in a sheltered house behind a sand dune, near the life-saving station, and they sleep close to it with a loaded rifle within reach. When any person, such as a newspaper correspondent or a photographer appears anywhere on the beach, the inventors lose no time in covering the aeroplane and carrying it to their house. Nevertheless, quite a number of visitors have arrived in the vicinity, mostly magazine and newspaper writers, and photographers.

# ARE YOU LOOKING AHEAD?

Mixed farming as a profitable occupation is no longer an experiment in the Dakotas and Montana Most of the products of the Middle West are successfully raised there each year without irrigation.

Where a few years ago cattle-raising was the principal occupation, settlers are now successfully engaging in diversified farming, truck farming, dairying, and poultry-raising. To-day's opportunities in these lines are along the Pacific Coast extension of the

## Chicago Milwaukee & St. Paul Railway

Good land may be bought from $15 an acre upward along this new line in the Dakotas and Montana. Plenty of government homestead land may still be secured close to the towns on this new line. Markets for the crops are assured.

Homeseekers' excursions to points on the new line in the Dakotas and Montana on June 2 and June 16. Low fares; stop-overs allowed. Tickets good 21 days from date of sale. Complete information free.

Books describing the present opportunities along this new line are free for the asking.

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**General Passenger Agent**
**Chicago**

**E. C. HAYDEN**
**Traveling Passenger Agent**
**426 Superior Ave., N. E., Cleveland**

# Mr. Bee-keeper,

Was 1907 a POOR YEAR for you?

It was a GOOD YEAR for users of

# DADANTS' FOUNDATION.

One dealer used 14,000 pounds.

Another dealer used 7,250 pounds. Another dealer used 4,500 pounds. Another dealer used 4,500 pounds.
Another dealer used 6,000 pounds. Another dealer used 4,500 pounds. Another dealer used 3,000 pounds.

*Thousands of pounds sold to the bee-keeper direct, or worked up for him out of his beeswax.*

The DEALER likes DADANT'S FOUNDATION because the bee-keeper likes it.

The bee-keeper likes it because his BEES like it.

The BEES like it because it is exactly like their own comb, so PURE and SWEET and CLEAN.

DADANT'S FOUNDATION is the Standard because it is the BEST.

Wax worked into foundation. Send for our Supply Catalog.

**DADANT & SONS, HAMILTON, ILL.**

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# Gleanings in Bee Culture

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI June 15, 1908 No. 12

# ITALIAN

# Queens

and bees, and nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Our stock is northern-bred and hardy. We just visited our outyards (all wintered on summer stands), and not a colony is dead to date (March 18). Some hives have lost scarcely a bee, so it appears. BROTHER BEE-KEEPER, how do you like such stock for hardiness? A party up in Maine got 50 nuclei of us several years ago. We just received a letter from him. He is after more of our bees, because last season he got 2200 pounds of honey which sold for 22 cts. per pound. Our stock is well known throughout the United States. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Free circular and testimonials. Price of stock as below.

| Prices of Queens before July. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens . . . . . | $1 00 | $5 00 | $ 9 00 |
| Tested queens . . . . . | 1 50 | 8 00 | 15 00 |
| Select tested queens . . . | 2 00 | 10 00 | 18 00 |
| Breeders . . . . . | 4 00 | | |
| Golden five-band breeders . | 6 00 | | |
| Two-comb nuclei, no queen . | 2 50 | 14 00 | 25 00 |
| Three-comb nuclei, no queen | 3 50 | 20 00 | 35 00 |
| Full colonies on eight frames | 6 00 | 30 00 | |

ADD the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

## QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio

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Here are a few samples of our 5,000 Building Material Bargains: Doors 80c. Windows 69c. Screen Doors 93c. 108 square feet Flint Coated Roofing, guaranteed 6 years, $1.41. 100 square feet Tar Felt 30c. 45-light Hot Bed Sash $1.60. 100 lineal feet Quarter Round 25c. Base Blocks 4c Corner Blocks 2c. Glass, 8x10 inches, 3½c. 100 feet Hardwood Flooring 80c. Porch Brackets 5½c. Porch Spindles 1¼c. Hardwood Thresholds 5c. Adjustable Gable Ornaments 80c. We save you at least 50 per cent on everything we sell for building houses, barns, out-buildings, school houses, churches, stores, etc. It pays to buy from

**80c** Dealer's Price **$2.00**

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*Dear Sir:*—Bee-supplies to hand. Let me congratulate you on your work This is my first business with you, and I like your promptness. I find freight less and time saved by ordering from you. Enclosed find check for $2.58 to pay freight charges.
Yours truly, W. J. COPELAND, M. D.,
Fetzerton, Tenn.

*Dear Sir:*—The bee-supplies ordered from you arrived in due time, and good condition. Am well pleased.
Yours truly, CHAS. T. DOWNING,
Rt. 7, Lexington, Ky.

**WANTED.** Amber, light, and dark southern extracted honey. State quantity, style of package, and lowest price expected delivered in Cincinnati. Mail Samples.

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**CINCINNATI, .. .. .. OHIO**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

NO. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

NO. 2.—Three-fourths of the total surface must be filled and sealed.

NO. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatoied honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

INDIANAPOLIS.—With the exceptions of a few lots of old comb honey the local market is practically bare of honey. Dealers are awaiting arrival of new crop, but as yet no prices are established. Beeswax brings 28 cents cash or 30 in exchange for merchandise. WALTER S. POUDER,
June 2. Indianapolis, Ind.

PHILADELPHIA.—Very little doing in the honey market for the last two weeks, with the prospect ahead of an unusually big crop in the East. Buyers are holding back for the new crop, old crop of comb being packed away for fall trade. Not enough sales being made of comb honey to make any quotation. Extracted honey, Southern, arriving freely. Bright amber sells in barrels at 6; white honey in 60-lb. cans, in a small way, 8.
W. A. SELSER,
May 25. 10 Vine St., Philadelphia, Pa.

NEW YORK.—Comb honey: The demand is next to nothing, and has been so for the past four months. A few crates of fancy No. 1 white are called for once in a while, while off grades and dark are entirely neglected. As there is practically no demand, quotations are simply nominal. We have more in stock than we can dispose of. The honey will have to be carried over until next fall. We can not encourage shipments of comb honey, as we do not think we shall be in position to render account of sales within reasonable time. Extracted honey: Demand better and market slightly improving. New crop is arriving quite freely from the South, where the yield seems to have been pretty large. We quote California white sage at 8½ to 9; light amber, 7½ to 8; amber, 6 to 6½; new crop Southern from 58 to 75 per gallon, according to quality. West India honey is arriving in fairly good-size lots and finds ready sale at from 60 to 62 per gallon, duty paid. Beeswax in good demand and firm at 30 to 31.
June 4. HILDRETH & SEGELKEN.
265-7 Greenwich St., 82-6 Murray St., New York.

SAN FRANCISCO, CAL.—The first offerings of the new crop of honey have arrived and have been picked up eagerly by the dealers as soon as they arrived. There has not been a sufficient amount of this to make any marked difference, and the market is still in a very bare condition. The dealers are still anxiously awaiting the arrival of substantial shipments. Prices remain as last stated. Water-white, comb, 16 and 17; white, 15; water-white, extracted, 8 and 8½; light amber, extracted, 7 and 7½; dark amber and candied, 5¼ and 5¾.—*Pacific Rural Press.*
June 6.

DENVER.—Our market is now entirely cleaned up of comb honey, and the first consignments of the new crop should find a ready sale at good figures. We quote extracted white, 8 to 9; light amber and strained, 6¾ to 7½. We pay 25 cents per pound for clean yellow wax delivered here.
THE COLORADO HONEY-PRODUCERS' ASS'N,
May 26. F. RAUCHFUSS, Mgr., Denver, Colo.

LIVERPOOL.—The market for honey and beeswax is steady and quiet. We quote honey, Chilian, 4 to 6⅓ cents; Peruvian, 3½ to 5⅓; California, 7½ to 9; Jamaican, 4 to 5⅓; Haiti, 6⅓ to 6½. Beeswax is very firm — African, 30 to 32; American, 30 to 33; West Indian, 29 to 32; Chilian, 30 to 36; Jamaican, 34 to 35. TAYLOR & CO.,
May 13. 7 Tithebarn St., Liverpool.

ST. LOUIS.—The honey market is very quiet. There is absolutely no demand for comb honey. Extracted honey is also neglected, consequently the prices have declined. Quote as follows: Fancy white comb honey, 15 to 16; No. 1, white and amber, 12 to 14; broken and defective, less. Extracted white, in cans, nominal at 8 to 8½; amber, 7 to 7½; in barrels, 5½ to 6; granulated extracted honey sells at less. Beeswax, 29 for prime; impure and inferior, less. R. HARTMANN PRODUCE CO.,
May 11. St. Louis, Mo.

ZANESVILLE.—So light is the demand for honey at the present time that it is almost useless to quote the market. Stocks are pretty well reduced, and there is a tendency to cut prices, especially on the part of one-horse dealers. While the remnant of last year's crop is moving very slowly, some revival is anticipated with the arrival of the new crop. For good quality beeswax I offer 30 cts. in exchange for bee-supplies. Wax wholesales at 40 to 45. EDMUND W. PEIRCE,
May 18. Zanesville, O.

BUFFALO.—There has been no change in the price of honey since last quoted. The demand is fair for pure white comb and good No. 1 buckwheat comb. We think that about all the honey in the market will be cleaned up before the new crop is ready. W. C. TOWNSEND,
May 11. Buffalo, N. Y.

CINCINNATI.—The market on extracted honey is light. We quote light amber in barrels at 6½; California white sage, 9½; practically no demand for comb honey. Beeswax sells at 33.
C. H. W. WEBER,
May 23. Cincinnati, O.

KANSAS CITY.—We have nothing to quote in the way of comb honey; but we quote extracted white at 7½. Beeswax, 25 to 27. C. C. CLEMONS & CO.,
May 9. Kansas City, Mo.

CHICAGO.—The honey market is without volume—no special change in price of either comb or extracted. Much of the extracted from Utah will be unsold when this year's crop is harvested unless it is sold to bakers. Beeswax is steady at 30.
R. A. BURNETT & CO.,
May 9. Chicago, Ill.

# Our Wants for Honey are Unlimited.

It will pay you to mail us a sample and correspond with us, as we are always buying all grades of amber and fancy extracted honey, as well as **Fancy Comb Honey** in no-drip shipping-cases. .. .. .. ..

NO MATTER HOW MUCH OR HOW LITTLE YOU HAVE TO OFFER.

WE REMIT THE DAY SHIPMENTS ARRIVE.

## The Fred W. Muth Co.

**THE BUSY BEE-MEN**

**51 Walnut St. Cincinnati, Ohio**

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Devoted to Bees, Honey, and Home Interests.

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# GLEANINGS IN BEE CULTURE

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THE RESULT OF TOEPPERWEIN'S WORD CONTEST.

1. Edna L. Crocker, Danforth, Me., 448 words.
2. Name unknown, 435.
3. A. B. Shideler, North Branch, Ia., 434.
4. M. W. Tyler, Sweet Springs, Mo., 425.
5. R. N. and L. S. Gillette, Fostoria, Ia., 421.
6. H. Greenwold, Lumberton, N. J., 418
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8. James E. Storkey, Converse City, Neb., 417.
9. Ada F. Pellet, Atlantic, Ia., 416.
10. Isaac F. Tillinghast, Factoryville, Pa., 416.
11. H. C. Kautz, North Water Gap, Pa., 415.
12. H. A. Pinegar, Wellington, Utah, 411.

Over 1000 persons entered the above contest. Owing to the immense amount of work connected with such a contest, and the technical knowledge required, Messrs. Toepperwein engaged an expert to examine all the papers, with the foregoing result. The problem was to create as many words as possible out of the word Toepperwein.

THE SEABOARD AIR-LINE RAILWAY.

Some of our readers may not have noticed the liberal offer made to them by the management of the Seaboard Air-Line Railway, who will, on request, furnish their *Seaboard Magazine* free of charge. It is very far from being a mere advertisement; on the contrary, it will bear very favorable comparison with many journals for which a fair charge is made. It gives very just and accurate information about the land contiguous to the Seaboard Railway. To many of the readers of GLEANINGS this will prove to be very interesting reading because it discusses truck-growing and fruit-growing as best suited to much of these lands. The climate of the country through which this railway passes is extremely pleasant and agreeable compared with the rigorous weather of the Northern States. In many cases two crops may be grown in a season—not only so, but the prices realized are actually greater than are obtained for northern produce. Being early it takes the "cream" of the northern markets, and the gigantic cotton-mills and other factories furnish splendid markets right at home. Moreover, the cotton-planters and their helpers are very great purchasers of northern produce, so that, as a matter of fact, the South is the greatest outlet for produce this country has. For this reason many northern farmers have moved to the South to their own great advantage. Many are puzzled to know just what section to go to, and the *Seaboard Magazine* was started with the express object of furnishing the desired information.


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## And we are going to do it.

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**LANSING, . . . . MICHIGAN.**

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136 W. Main St., Zanesville, O.

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MINNESOTA STATE FAIR, AUGUST 31, SEPTEMBER 1, 2, 3, 4, 5.

*Division H.—Honey, Bees, and Apiarian Supplies.*

Superintendent—M. V. Facey, Preston, Minn.

Rules governing exhibits: Competition open to the world. No entries received after Saturday, August 29 (see rule 14). Premiums and purses not called for within ninety days will be considered forfeited.

CLASS 62.—HONEY.

| Lot. | | 1st. | 2d. | 3d. | 4th |
|---|---|---|---|---|---|
| 1 | Most attractive and finest display of comb honey | $14 | $11 | $8 | $5 |
| 2 | Case white-clover honey, 12 to 24 pounds | 10 | 7 | 5 | 3 |
| 3 | Case basswood or linden comb honey, 12 to 24 pounds | 10 | 7 | 5 | 3 |
| 4 | Case other white comb honey, 12 to 24 lbs. | 10 | 7 | 5 | 3 |
| 5 | Case amber comb honey, 12 to 24 pounds | 10 | 7 | 5 | 3 |
| 6 | Display of comb honey in extracting frames | 10 | 7 | 5 | 3 |
| 7 | Most attractive and finest display of extracted honey | 12 | 9 | 7 | 5 |
| 8 | Case extracted white-clover honey, 12 lbs. or more in glass, labeled | 10 | 7 | 5 | 3 |
| 9 | Case extracted basswood or linden honey, 12 pounds or more in glass, labeled | 10 | 7 | 5 | 3 |
| 10 | Case other white extracted honey, 12 or more pounds in glass, labeled | 10 | 7 | 5 | 3 |
| 11 | Case extracted amber honey, 12 pounds or more, in glass, labeled | 10 | 7 | 5 | 3 |
| 12 | Display extracted honey, granulated or candied | 10 | 8 | 7 | 5 |
| 13 | Beeswax, best quality, 10 pounds or more | 7 | 5 | 4 | 3 |
| 14 | Honey vinegar, not less than one gallon, in glass | 5 | 4 | 3 | 2 |
| 15 | Nucleus of golden yellow Italian bees and queen in observation hive | 10 | 8 | 6 | 4 |
| 16 | Nucleus of dark or leather-colored Italian bees and queen in observation hive | 10 | 8 | 6 | 4 |
| | Grand Sweepstakes. | | | | |
| 17 | Largest, best, and most attractive exhibition in this department, all things considered. | 15 | 12 | 9 | 6 |

FARMERS' COLLECTION.

Exhibits to compete for the following premiums must be made by bee-keepers living fifty miles or more from St. Paul, and not eligible to exhibit in the general classes.

| | | | | | |
|---|---|---|---|---|---|
| 18 | 12 to 24 pounds white comb honey | $10 | $7 | $5 | $3 |
| 19 | 12 to 24 pounds amber comb honey | 10 | 7 | 5 | 3 |
| 20 | 12 to 24 pounds white extracted honey | 10 | 7 | 5 | 3 |
| 21 | 12 to 24 pounds amber extracted honey | 10 | 7 | 5 | 3 |
| 22 | Most original and attractive design in comb honey | 5 | 3 | 2 | |
| 23 | Best and most attractive display of wax, not less than 12 pounds | 5 | 3 | 2 | |

| Lot. | OPEN TO THE WORLD. | 1st. | 2d. | 3d. |
|---|---|---|---|---|
| 24 | Candies made with honey instead of sugar; quantity, quality, and display considered | $6 | $4 | $2 |
| 25 | Best display of cooking with honey used in place of sugar for sweetening | 5 | 3 | 2 |

WORKING BEE EXHIBIT.

| | | | | |
|---|---|---|---|---|
| 26 | Best hive for comb honey | 5 | 3 | 2 |
| 27 | Best hive for extracted honey | 5 | 3 | 2 |
| 28 | Best display of apiarian tools and fixtures | 7 | 5 | 2 |
| 29 | The most attractive exhibit of handling bees made by any bee-keepers' association in suitable tent or wire-netting inclosure; said exhibit to be made daily and as many times daily as is deemed advisable by the superintendent of this department. (Associations competing must bear all the expenses of said exhibit). | 40 | 20 | |

W. W. CARY & SON, LYONSVILLE, MASS.

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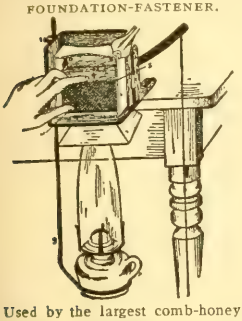

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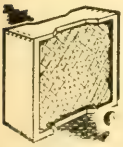

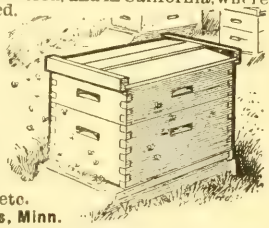

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I Hives

II Sections

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IV Inside Fixtures

V Bees and Queens

VI Veils and Smokers

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SYRACUSE :: :: :: NEW YORK

TO THE

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Canadian agents for The A. I. Root Co., Medina, O., U.S.A.

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Agente Générale

POR TODA EUROPA Y COLONIAS,

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# $UCCE$$

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It is not only thoroughly practical, but is conducted from a dollar-and-cent standpoint. It tells its readers how to keep bees in such a manner as to *make money;* its articles are written by men who have made money in the business, and can tell others how to do it.

While on a visit recently a bee-keeper told me that for a long time he had been reading only one bee-journal, but, finally, he had accepted one of my special offers, subscribing for the *Review* and securing a volume of back numbers, and, as he looked over and read the back numbers, he was fairly

**STRUCK DUMB**

at the amount of information that they contained—he did not suppose there could be another bee-journal, aside from the one that he had been reading, that could contain so much information.

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# And Still They Come

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Respectfully, HUGH RICHARDSON,
Wood Co., O.

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Indianapolis is a mighty good town to live in, and a good town for business.

Because—All passenger and freight depots are within five blocks of the business center.

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Because—It is only seventy miles from the vast coal-fields.

Because—It has factories of world-wide reputation.

Because—It has a population of two hundred and forty thousand, and is growing.

Because—It has miles of wide well-paved streets, many well-distributed parks, and thousands of homes surrounded with beautiful lawns and shade-trees.

Because—It has one hundred and seventy-five churches, sixty-five common schools, two high schools, one national technical institute, and one college.

**Because—It is the home of the very best bee-supply house in the country, and the only one that makes a distinct specialty of immediate shipments, perfect packing and crating and services, that have been pronounced by scores of bee-men as being absolutely ideal.**

I handle Root's goods at their prices—Danzenbaker and other standard hives; finest sections; fresh new comb foundation; smokers and all other first-class equipment for bee-men. My catalog is free.

Beeswax wanted at highest market prices.

Wanted. — Fancy white-clover comb honey for exhibition purposes.

Hoosier-Italian queens ready by return mail. Untested, 75 cents. Select untested, $1.00.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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VOL. XXXVI JUNE 15, 1908 NO. 12

## STRAY STRAWS

DR. C. C. MILLER

HAVE READ Leslie Burr's article, p. 699. Am going to stay at Marengo. [Most bee-keepers had better stay where they are unless they desire to go into the business of honey production on a very large scale, running a series of yards.—ED.]

I THOUGHT I did a pretty good thing when I said "cellar the bees" instead of "put the bees in the cellar." Now comes a Canuck, R. B. Ross, Jr., with the word "uncellar." Why not? Ever so much shorter than to say "take out of the cellar."

SORRY you've gone lame in one eye, Mr. Editor, but glad you are going to spend more time with the bees. Better for your readers, and you will live longer. [The eye is apparently holding its own. We feared at one time that it might get worse, and possibly involve the other eye.—ED.]

W. Z. HUTCHINSON, p. 639, speaks of storing supers of honey in the bee-cellar. Does he really mean *cellar?* That might do in Colorado, just possibly in Michigan; but to store honey in any thing called a cellar in this locality, unless the cellar is heated, comes pretty near spelling ruin. [Here too.—ED.]

A CARNIO-ITALIAN queen was received from Medina, July 30, 1906—too late for her progeny to do much storing that year. Last year the colony built up well, showed no great inclination to swarm, and stored more than the average. This year it has built up well again. Looks like good stock, judged by this one specimen.

SOMETIMES the objection is made to comb honey that the wax is indigestible. Probably in no case does that do any harm; and in some cases the indigestibility of the wax is its greatest recommendation. In cases of chronic constipation comb honey has been reported beneficial when extracted honey would have no effect.

WONDER what made the difference between Albert I. Mills' experience, p. 701, and that of Mr. Whitney and mine. Could it be that letting most of the bees go down through the escape, as Mr. Mills did, should make the difference? It seems strange that he found a loss with only two supers, and that with thousands of supers I have as yet observed no loss.

A. I. ROOT, let me tell you a little story. Once there was a saloon-ridden town where four boys lived whose fathers were drunkards, and spent all their money at the saloons. You will see a picture of them in GLEANINGS on the right side of p. 698. On the left side you will see the same boys a few months later after saloons were voted out, and the fathers supported their boys instead of saloons.

I DON'T KNOW whether bees that cap the combs watery are always hustlers; but I think I never had any very poor storers that capped watery. But as I work for comb honey I don't believe such bees bring up the quantity stored as much as they bring down the price per pound. It's all right for such bees to find an asylum with Mr. Whitney, page 702, for I suspect he sets them to work on extracting-combs. For extracted honey they are all right.

BERTHA M. TIMONEY, you say your bees are not as neighborly as those bees in Germany, page 703, but perhaps they would be if placed the same as the bees are placed in Germany. Germans do not scatter them all over the ground as we do, but put them very close together. My hives stand in pairs, a space of only an inch or so between each two hives. In a hot time sometimes that space is filled up with bees, and the bees of the two colonies hang out as one cluster. If one hive should be crowded with honey, and the other have lots of room, it would be nothing strange if they should go into partnership and store where there was the most room.

BEE-KEEPERS, I think, generally understand that it is economy to use foundation as thin as possible. In spite of that, thin super has the preference over extra thin more than two to one. Please get bee-keepers to tell why. I gave up extra thin because the bees maltreated it so whenever not actually storing in it. [Yes, we should be glad to have producers report what weight of foundation they use for sections, and why, particularly the *why*. In order that we may hear from as many as possible we should like to get postal-card reports from several hundred. This will be interesting and valuable, especially to those whose minds are not quite made up which to use.—ED.]

WORKING with bees at night seems to do well with some; but somehow it doesn't seem to fit this locality. Bees crawling all over, like as not to sting where it will hurt—excuse me. [Night-working is not nearly so bad as it may seem on first trial, providing one uses a good lantern, bicycle pants-guards to keep the bottom of the trousers tight, and sleeves protected in a similar manner. Yes, the bees will crawl; but if one goes at the matter properly he will experience but little difficulty. But we would advise night-working only in the case of business men or clerks who do not get home till after daylight hours; and in all other cases where robbing has been very bad —ED.]

PROF. COOK has earnestly protested against calling the larva of the wax-moth a worm, and Burton N. Gates repeats the protest in the *American Bee-keeper*, p. 112. Whatever the entomologists may say, the dictionary supports the use of the word "worm;" and so long as we are asked to use in place of the one word five or six words—"the larva of the bee-moth"—we are likely to follow the dictionary rather than the entomologists. Still, I have much respect for my good friends' feelings, and also for exactness of language. I have asked Prof. Cook to give us something short and yet correct to take the place of "worm." As yet he has not done so. In default of something better I venture to suggest "wax-larva." Even then it will be hard to give up the word "wormy." Instead of saying "That comb is infested with the larvæ of the wax-moth" it is ever so much easier to say "That comb is wormy."

REFERRING to footnote, p. 621, I hardly think the position of the dead queen on the excluder is any proof of a combat between queens. A queen or drone killed above an excluder will always be found on the excluder because the bees can not drag them through. You've got to "show me" before I'll believe that one queen can get a grip on another queen so as to sting her through an excluder. [We will admit that dead drones, and occasionally a dead queen, will be found on the perforated zinc, the same being brought there by the bees in the effort to get them out of the hive. But there have been reports where mortal combats have taken place between two queens through the perforations of perforated zinc. The queen that happens to get the right hold on her antagonist will deliver the sting through the perforations. If some of those who reported these occurrences will hold up their hands we shall be glad to have them do so.—ED.]

THE QUESTION as to the proportion of thin to extra-thin surplus foundation having been raised, I asked Dadant & Sons what was the proportion in their sales, and received the following very full reply:

Our sales of foundation last year averaged as follows:

| | |
|---|---|
| Medium brood—42 per cent. | Thin brood—11 per cent. |
| Thin surplus—34 per cent. | Extra thin—13 per cent. |

From this it will be seen that the thin surplus was 2.6 times as much as the extra thin. The medium brood was 3.8 times as much as the thin brood; the total brood, 13 per cent more than the total surplus. Perhaps you might tell us how these figures compare with figures at Medina. [We do not keep an extended record of every grade sold during the year; but we have asked the foreman of our department to give a report of it for the last month, and the figures are as follows: For more ready comparison we put the Dadant figures alongside of ours.

| Root Co. | Dadant. |
|---|---|
| Medium—34 | Medium—42 |
| Light—20 | Light—11 |
| Thin—30 | Thin—34 |
| Extra thin—16 | Extra thin—13 |

The difference in percentage here shown may be due to the fact that we advise extra thin for sections, not because the bees take to it better, for they do not, but because we believe it makes a finer grade of comb honey.—ED.]

OSWALD MUCK gives a full report of the eight golden queens received at the Vienna station from America, *Bienen Vater*, 323. He concludes by saying that the American goldens are great beauties, but can by no means compete with the natives. I don't question this verdict, but I do question one objection made against them. He says they are great wanderers, some of the golden workers being found in every hive in the apiary. How is it known that the natives were not scattered in the same way? If a few native colonies were in an apiary of goldens, would not scattered native workers be found in all the golden colonies? [Quite right you are. A few goldens among the blacks would be very conspicuous. The fact is, we suspect, from a lot of observation on the point, that all races of bees wander to a greater or less extent, especially in the case of colonies having entrances similarly situated, and with similar surroundings. The young bees in their first flight are not always unerring in returning to the same spot. When they miss it they go back to one very much like it, pointing in the same direction, or having the same external surroundings.—ED.]

# EDITORIAL

THE early bird catches the worm; or, in other words, the first new comb honey on the market secures the best price. The trade is waiting for it, and the bee-keeper who lands his crop first will make a quick sale.

THERE have been abundant rains in our locality, and it is indeed surprising how fast weeds shoot up, thus obstructing the entrances of the hives right where we had used a sickle and cut every thing down nice and clean three or four days before. In the early part of June, when the ground is soaked with water, it does not take long to hinder greatly the flight of the bees at the entrance.

THE last year's honey crop of California having all been disposed of, the returns show that the actual production was about 275 carloads. This year's crop is beginning to appear, but no one seems to be able to make even an approximate estimate of what the amount in carloads will be, as there is a total failure in places and a fair crop in others. W. K. M.

MR. J. E. CRANE wisely calls attention to the fact that honey is all the better for a little milk with it when served by itself. Cream is even better, to our taste, and such a combination simply slides down. There is no better food under the sun, and both ought to be within the reach of most people. There are very good reasons for supposing that such food will keep consumptive germs at bay, and promote long life and the happiness of health. W. K. M.

WE take great pleasure in printing elsewhere in this issue the premium list for bees and honey at the Minnesota State Fair. It is a model, and ought to be emulated by every State in the Union.

The superintendent is Mr. M. V. Facey, one of the best-informed bee-keepers in this country. It ought to be noted that the Minnesota authorities are broad and liberal minded, for they have thrown open the competition to the entire world. They surely deserve a splendid response to their generous invitation. The bee-keepers' exhibits ought to be one of the features of the fair.

W. K. M.

### COMB HONEY LEFT OVER FROM LAST SEASON, AND WHY.

THERE would not have been a pound of comb honey left on the market if producers had made an effort to sell it before the holidays. A lot of it is held over and is now begging a customer. It will be sold as the season opens up again, but at a very low price. Comb honey more than a year old is usually a poor seller.

### PARCELS POST.

SENATOR CARTER has succeeded in having the bill creating a parcels-post service set down as a special order for December 14th, next. This insures having the whole question come to a vote, when we all shall see who is for and who against. It was evident there would be no opportunity for a discussion this session, so Senator Carter asked for a special order with the before-mentioned result.

W. K. M.

### WHAT ARE PRICES GOING TO BE FOR THE CURRENT YEAR?

THIS is a hard question to answer. Early indications showed prospects of a good crop of honey in Texas and California; but the realities are reported to have fallen short of the expectation. The clover district promises a big crop. The conditions are certainly ideal for a fine flow, and if there should be a heavy crop of white clover and basswood in the rain-belt it may make prices in the East ease up somewhat, especially if general hard times hang on.

### KEEPING THE CAUCASIANS UNDER CONTROL.

WE are having quite a time in keeping our Caucasians under control at our south yard. They raise drones as fast as we can trap them and destroy them, even when they have nothing but worker comb. We fear the consequences of letting them get the start of us, if it should develop later that they are not desirable. What do we think of them at this time? We don't know. They are good honey-gatherers apparently, but are great propolizers and not as gentle as they might be. The first importations seemed to be much quieter than the later ones.

### MUST BE PURE BEESWAX.

A committee of the Brooklyn Retail Grocers' Association, headed by President Lohmann, held a conference last week with the New York State Board of Pharmacy with reference to their beeswax prosecutions of grocers. It was brought out that the Board was desirous of stopping the sale of "ironing wax" as pure beeswax, whenever the ironing wax is merely a compound. The grocers' representatives made it clear that the trade at large is innocent of any intent to deceive the public in the matter, and it was pointed out that the grocers' associations were ready to co-operate for the purpose of securing honest methods of distributing groceries of all kinds.—*American Grocer.*

### WILL THERE BE ANY SAGE HONEY FROM SOUTHERN CALIFORNIA?

THE reports we have received from some of our leading bee-keepers, especially in the vicinity of Los Angeles, have been discouraging. The following clipping sent us by a subscriber seems to tell another story:

HONEY CROP TO BE A BUMPER.

The honey crop of this season in this county promises to be a bumper. Estimates that have been made up show that the total will be not less than 50 cars, and the figures may run considerably above that figure.

In fact, the bee-men report that it has been one of the best seasons for honey-gathering that the valley has had for several years past. It has been neither too hot nor too cold for the bees to do their best work, and there has been an abundance of bloom for the honey-gatherers to work upon all the latter part of the winter and spring.

The same story comes from all of Southern California. Riverside Co. is also expected to produce 50 cars, and San Diego Co. will do as well. Other Southern California counties have good crops, so that the total for the seven southern counties will foot up 300 cars or more, it is believed. The average crop is considerably below that figure.

All together it has been a very prosperous year for the Southern California bee-men.

In view of the reports we have received from bee-keepers direct, we are inclined to discredit this somewhat. We are inserting it, however; and if those who are in position to know any thing about the real state of affairs in Southern California will please write us at once we shall appreciate it.

### DIFFERENCE IN TEMPERAMENT BETWEEN COLONIES.

WHAT a difference there is in bees in regard to temperament! Some colonies must be handled with the utmost care, while others, without regard to race even, will stand almost any kind of rough treatment. The other day we struck one colony that came near making us beat an inglorious retreat; but we stood our ground, using plenty of smoke. The sun had gone down, and the atmosphere was dropping slightly. While bees generally are more vindictive under such circumstances, this particular colony was exasperatingly so.

The very next hive we opened, the bees were as quiet as kittens. We kicked and bumped it, but it was still quiet. We ripped out the combs and replaced them with a bang, and still the bees were quiet. The funny thing about it was that the queens of both colonies were reared from the same blood. They were both well-marked Italians. We surmised from the tendency to run to four bands that the queen of the cross colony had been mated to one of those golden drones that have been the cause of some of our peppery bees,* while the other queen was undoubtedly mated to an ordinary leather-colored drone of imported extraction. The cross queen we shall sell as a hybrid if we sell her at all. We are wondering if it wouldn't be a sin even to *give* her away.

*We aim to keep our black and cross bees at one yard; namely, the south yard.

### GETTING THE BEES BACK INTO THE HIVE AFTER LIVE-BEE DEMONSTRATION.

A correspondent, in referring to the live-bee demonstrations that we have been giving at fairs and elsewhere, wishes to know whether the bees return to the hive readily, or do they cling to the cage after being shaken off the combs? Soon after they have been dumped into the tin pan many of them fly up and cling to the sides of the cage. While these can be scooped off by the handful, many stray bees will cling to the sides of the cage. If it can be left to stand over night, and the cover of the hive from which the bees were taken be put on catacornered, most of the bees will work their way back into the hive. It seems almost impossible to brush them off the wire cloth; and the more one brushes, the more they cling until they become vicious. We have brushed down what we could, and then picked up the rest one by one. Or if we can not wait, smash them and then collapse the cage, putting it into its case.

### HELPING THE NATIONAL BEE-KEEPERS' ASSSOCIATION TO ADVERTISE HONEY.

It will be remembered that, some time ago, the National Bee-keepers' Association received the funds that belonged to the Honey-Producers' League that was organized for the purpose of advertising honey and creating a market for it. A good many at the time thought it was unnecessary to have two organizations. To make a long story short, the League finally voted to disband and to put the funds (nearly $1500.00) into the treasury of the National, but on condition that such money should be used to spread information concerning honey as a food—in short, to create a better market for it. The National subsequently voted to accept the funds on the conditions named.

A short time ago, through its manager, Mr. N. E. France, it offered prizes for articles on the subject of honey as a food, and why it should be eaten. Out of over thirty sent in, ten were selected for publication. The National is now sending out a large blanket sheet containing all these honey articles. It is requested that the bee-keeper who receives them shall take them to his local papers and get one or more of them published as a matter of news. It is suggested that one article follow the other, thus keeping up a rapid gun-fire on honeys—nothing like *continuous* advertising.

If all the members will take hold of this properly, a great deal of valuable matter calculated to help the honey business, and in particular the local bee-keeper, will be spread broadcast, for these articles are carefully and conservatively written.

Mr. France announces that he has had several thousand copies printed, which members and others may obtain at the rate of $1.50 per 100; $2.00 for 250; $3.00 for 500. Many bee-keepers would do well to buy a supply and scatter them among their customers, especially grocers and others who buy their honey.

We wish to offer a suggestion to the League committee having this in charge—that it endeavor to get one or more of these articles into "boiler-plate"—that is to say, get the firms that furnish plate matter for small local country papers to accept one or more of these articles and put them into boiler-plate for distribution all over the country. It is well worth trying for.

We may say that they are an exceptional lot of newsy and instructive articles prepared for popular reading, and it is highly important that they receive as wide a circulation as possible. So let every one, whether a member of the National or not, help along in the good work.

### DIAGNOSING COLONIES BY THE BEE-FLIGHT AT THE ENTRANCE.

In our last issue, page 683, we spoke about giving room to colonies that show unusual activity at the entrance during a heavy flow of honey from fruit-blossoms. Since the flow began from white clover we have been giving room to all colonies at the south yard that showed strong flight, whether the colony where such activity was shown, needed room or not.

The flow has come on very strong. While it is customary to give supers only to strong colonies which, on examination of their combs, show the need of it, in this case we considered it wiser to give room according to the showing at the entrance, irrespective of the actual condition in the hive, providing, of course, it has a good queen and a large force of bees. Why do we take an external diagnosis rather than internal? Let us suppose a couple of cases which are real:

Here is a colony that has a moderate amount of brood in the hive, and a large amount of honey left over; but the bees, although a good force of them, are not flying much—but *why*, we do not know.

Here is another one that has a large amount of brood, with but very little honey in the hive; but the bees are tumbling down at the entrance. The honey-flow has just begun. It has used up all of its available stores in brood-rearing, and has been running "close to shore." The unusual activity at the entrance shows that these bees will probably need room long before the other whose hive is filled with stores and brood, but whose bees are doing nothing.

But there is another point about this external diagnosis that should be considered. When the flow is actually on, colonies needing room first should have first attention, after which the laggards may be given supers or combs. On the other hand, the hive that is sending a lot of bees out to the field should never at any moment be cramped for room in which to store the nectar; for if it starts to building cells, and the bee-keeper is careless enough to allow it to think of swarming, it may be almost impossible to break up the mania; so it is best to keep clear ahead of such bees.

But there is still another point. Entrance diagnosis can be detected by *one quick glance.* The hard workers and early fielders usually receive on top of the cover a stone or stick, or some mark to indicate which hive needs room first. After all the hives in the apiary that show that they will need room soon are so marked we give them supers or combs.

### DIAGNOSING SAMPLES OF DISEASED BROOD.

During the summer, nearly every mail brings us several samples of dead brood to examine. In many instances there are no symptoms of disease

present, showing that the brood was very likely either starved, chilled, or possibly poisoned. We can not always be sure, judging simply from a single piece of brood-comb, and it is quite important that we receive by the *same mail* a description of the trouble as well. We should know the number of colonies affected, whether it was ever noticed before, whether there are other diseased colonies in apiaries near by, etc.

In sending the sample, select as characteristic a piece as possible, four or five inches square. Wrap it in paraffined paper and pack it securely in a wooden or tin box. (Do not use a cigar-box, as the odor of the tobacco almost entirely conceals any possible odor of the brood.) *Be sure to have your own name and address written plainly on the outside of the box*; for when there are several samples received at once there is no way of identifying them unless the name is given.

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### CUTTING ALFALFA BEFORE IT IS RIPE; THE ACTION OF THE IDAHO BEE-KEEPERS.

THE Idaho bee-keepers have hit on a very excellent way of helping the bee industry. They propose to inaugarate a campaign of education to induce alfalfa farmers to let their crop stand until it is in full bloom before cutting. It is quite probable they will be successful, as they have both science and practical experience in their favor. It is not a difficult matter to show that cutting alfalfa before it is ripe is poor business. By letting the crop stand for a few days longer they will get 20 to 25 per cent more of cured hay, and at the same time secure fully as good a fodder.

It is very true the early-cut alfalfa hay has a larger percentage of protein than the late-cut; but the latter contains quite enough protein to suit the most exacting feeder of farm animals. The early-cut alfalfa, on the other hand, is deficient in carbo-hydrates—very essential constituents of all foods, either for animals or men. As a matter of fact, the carbo-hydrates and protein in normal alfalfa hay are so perfectly balanced that there exists no special need of increasing the proportion of either.

It has been shown that we can make further improvement in the culture of alfalfa by allowing it to grow to its maximum before cutting; and then, when it is still in the cock, "sweating" it by covering with a piece of cotton cloth to protect the process of fermentation from the sun. In this manner the very highest grade of hay is produced.

The Idaho bee-keepers may also try to get the alfalfa farmers to mix a reasonable quantity of sweet clover with their crop. Even so great an authority as Joseph E. Wing recommends this course, as the animals like such a mixture, and it is probable the crop is actually increased thereby. The United States Department of Agriculture could do yeomen service along the lines here indicated.

There is one excellent rule for mowing alfalfa so as to get it to grow vigorously immediately after it is cut. It is this: Wait until the buds have started at the base of the stem before cutting. If this rule is observed the plants start to grow almost immediately after mowing. If the cutting of alfalfa is delayed too long after the appearance of the buds, the hay will be woody and unsatisfactory. If cut too soon, alfalfa will be checked in its growth, and it will be long in yielding a second crop. W. K. M.

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### A WORD OF CAUTION FOR THOSE WHO HAVE HONEY FOR SALE.

BEE-KEEPERS will soon be marketing their honey. At this time it seems proper to reiterate our annual caution to be careful *where* one ships. If the honey is sold outright he should be sure that the party to whom it is consigned is responsible. Let him go to his bank and have it look him up. If he can get no information he should require cash in advance or ship by freight C. O. D.—that is, send a bill of lading to some bank where the customer is located, requesting it to collect the cash before the goods are turned over.

Some argue that, if a house is not responsible, it is safe to send the honey on commission because the consignee can be arrested and jailed if he does not make returns; but if he is dishonest there is nothing to prevent him from making very meager returns, leaving the burden of proof on the producer to show that they are not entirely adequate for the quality of the goods. To do this requires the aid of an attorney and due process of law; and on small shipments the commission man knows it will cost more than the amount involved.

As a rule, bee-keepers should deal with only reliable commission men—particularly those who furnish regular quotations for the bee journals; and in every case where possible one should sell outright. If the goods are fancy or No. 1, and the house is reliable, a cash sale can usually be effected, for the business is getting to be done more and more on a cash basis.

In case one has a lot of off-grade honey—dark or otherwise inferior goods—it may be necessary to sell on commission. Such lots are usually disposed of in that way, for no house will buy outright a shipment of that kind when it does not know what it is, much less how much it will bring in the market.

As we said before in these columns, all dark or inferior-flavored honey should be taken out with the extractor. Nothing but the very best *table* honey should be marketed in sections, and even then all No. 2 should be sold around home.

It is well for the novice to understand that old producers who deal *on the square*—that is, sell their honey for *just what it is*—and offer only first-class goods, have no difficulty in making cash sales and at good prices—usually above the market. The dealer has come to *know* them for their square dealing, and he has no hesitation in entering into a cash deal, and not infrequently wires his acceptance of the quotation. In the case of some producers the honey is sold before it is actually off the hives.

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### THE HONEY SEASON AND PROSPECTS.

REPORTS from most localities in the clover belt continue to be very favorable. As a sample of what is coming in we make a few quotations:

Illinois.—"Bees in this section are gathering honey by the barrel from white clover."

Indiana.—"We have a big crop of white clover, and I think there is a fine honey prospect."

Kentucky.—"Bees are booming just now, with fine prospects for white honey."

Kansas.—"Never were bees in such fine condition; prospects are favorable."

Minnesota.—"Bees light but strong. White clover opens up well."

Kansas.—"I never saw bees in such fine order. If we have a dry year we shall have a good honey crop."

Iowa.—"Bees are in fine condition here. I have had several swarms."

California.—"Bees are doing well at Ioamosa, working on orange-bloom, and beginning on sage." Elsewhere in Southern California the reports are not favorable.

In the northern part of the State the situation is better. The following from the *Pacific Rural Press* will explain:

The *Chico Enterprise* says: "Orange honey, which is pure white, only slightly inferior to sage, will be a full crop, perhaps the largest in the history of the industry. The orange-groves probably will produce 25 carloads. Except for the fact that it crystallizes quicker, orange honey is equal to sage. The other honey-producing sections have been badly affected by drouth. In about 25 per cent of the hives the production will be very small. The other half will produce fairly well, but not a full crop. Last year the State produced 275 carloads. The holdings of honey are not large, but apparently many holders are not aware of the situation, and are still selling at below the actual value based on the prospective short crop. Whatever honey is carried over will be good property, as it does not deteriorate materially in a year. It crystallizes, but when melted it comes out all right and will remain in a liquid state for another year."

Wisconsin.—"Prospects are exceedingly good—never saw so much white clover."

West Virginia.—"We are having the best honey season we have had in ten years, and more swarms than were ever known before."

Pennsylvania.—"Prospects are that this will be one of the best seasons we have ever had."

Georgia.—"Bees have been doing well."

Florida.—"Some report good crops, and some report almost a failure."

In a general way we may say there have been heavy rains and hot weather. In most of the Northern States clover has come out remarkably well; and at this writing the flow is just beginning. But "there's many a slip 'twixt the cup and the lip," and therefore we are looking to see what old Dame Nature will do.

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### THE FOLLY OF ORDERING BEE-SUPPLIES TOO LATE.

THE following letter from a prominent dealer in bee-keepers' supplies in New York carries its own moral:

*The A. I. Root Co.*—Orders are now *pouring in.* Why don't bee-keepers order goods before they need them? Nearly three hundred dollars' worth of orders came in to-day.

Syracuse, N. Y., May 25. F. A. SALISBURY.

In Mr. Salisbury's case we are informed that he has a large stock of goods on hand; but in most cases the dealer is swamped this season with orders because he can not get goods fast enough from the factory. The trouble is, the dealer did not lay in a large enough supply in the fall, taking advantage of the discount, and then when he calls on the factory he is unable to get the goods promptly. What is true of the dealer is more true of the consumer.

Bee-supplies should be bought and put together in the fall and winter months. It is folly to wait until the last minute, when the honey-flow is nearly on, before ordering the goods. Yet experience shows that is precisely what many are doing. They wait till they know there is to be a flow and then order. The honey comes with a rush, but the goods do not. Result, they have bought and paid for something they can't use; the honey comes, swarms come out galore; kegs and barrels are pressed into service. The honey in such contraptions is not marketable, and then the dealer comes in for a scoring.

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### THE DIFFICULTY OF FINDING QUEENS IN A POPULOUS COLONY; WHEN TO CLIP; SEE FRONT COVER PAGE.

ON the front cover page of this issue we present a view taken in our home apiary, situated just back of one of the factory buildings, showing Mr. C. F. Bender, of Plano, Ill. (who was then in our employ), at work hunting for a queen in a populous colony. The scene is fairly representative of almost any section of our home yard.

We do not often have as populous colonies as this for queen-rearing; but the presence of the Boardman feeder at the entrance indicates that the colony in question is devoted to cell-building, for all such colonies, unless honey be coming freely from natural sources, must be given liberal stimulative feeding. Mr. Bender has removed the cell-building frame, and, as we remember, was hunting for a young virgin that emerged from the cell prematurely. Frame after frame had to be removed, and, as fast as examined, set down on end as shown. Sometimes the task of locating a virgin is a difficult one, as she may go off on a mating-flight; and even if she be in the hive she is but little larger than an ordinary worker bee, and her erratic dodging results often in a fruitless search.

That is one reason why queen-breeders have virgins mated from comparatively weak colonies or nuclei. The weaker they can be and still maintain their collective individuality without replenishing with fresh bees, the better.

But the picture shows another thing—namely, that if one practices clipping queens he should go through his hives as early in the spring as practicable, when the colony has a light force of bees, and when the queen can be easily located. To defer the operation until near swarming-time means going over the combs thickly covered with bees, not once, but sometimes two or three times, and not infrequently the searcher may have to close up the hive for the time being, and then come back an hour or two afterward and hunt again. Occasionally we have seen a colony like the one shown on the front cover, where the owner was almost in despair because he could not find the queen. He sees the eggs and brood in all stages. He *knows* she "is there; but where, oh! where is she?"

Where a colony is very populous, or is on the eve of a honey-flow, or right in it, the queen-hunt should be conducted during the middle hours of the day when a large percentage of the flying bees are in the air. If many are in the field, all combs removed should be stationed in the *rear* of the hive rather than the front. In this case we requested Mr. Bender to put them in front, where the camera could catch them.

In speaking of Mr. Bender we may say that we consider him one of the best bee-keepers and one of the closest observers in the country. He left our employ of his own accord; and in spite

of the fact that we offered him an advance in salary he said this was no object, as there were other considerations that required his presence at home.

### BEES IN SOUTH AFRICA.

BEE-KEEPING in South Africa is making progress. One of the drawbacks is the high price of the necessary bee-appliances, due to high freight rates by sea and land, and a high tariff besides. Certain birds and animals prey on bees; but by far the worst is a kind of wasp which seizes the flying bees. The colonists capture these nuisances by means of sticks or twigs coated with birdlime placed near the apiary. The wasps settle on these stakes for the purpose of watching their opportunity to catch bees but are held by the sticky stuff. One small twig will catch a good many. How would this work on the bee-hawks which infest some parts of Florida? They have the same habit of poising themselves on the end of a twig to watch their prey. The birdlime is made by boiling linseed oil for hours till it becomes quite sticky. It may also be made from the inner bark of the holly, the juice of the oleander, or the sap of the bread-fruit and similar trees. The following very interesting letter on the subject recently appeared in the *Agricultural Journal of the Cape of Good Hope:* W. K. M.

Locally this pest is called "bijvanger," or "bee-pirate." In Bechuanaland it very much resembles the common English wasp. If this is the same insect as is referred to by Mr. F. Lindenberg, I must beg to differ as to its method and reason for capturing bees. The bee-pirate catches the bee returning to the hive, for the purpose of robbing it of its honey. It first makes its appearance in spring, about the time of the first honey-flow, generally about 8 A.M., when the sun is getting hot, knocking off about 5 P.M., when the day is cooling. It sits near the entrance of the hive, and catches the bees returning heavily laden with honey, either falling with the bee close to the hive, or bearing it off some score of yards. It disables the bee, but seldom kills it outright—at least, those that I have managed to find after the pirate leaves them crawl along the ground, unable to fly, generally being quickly despatched by ants. Bees laden with pollen are never touched. Though in hot weather at midday the bees will half cover the flight-board, they are not molested by the pirates, though the latter will also settle on the flight-board. This, I think, proves that it is not the bees alone that they are after. I know nothing that will do away with them. Quantities can be killed by striking them with sticks, and by setting birdlime on points of vantage. I have also tried placing the hives behind a big bush, so that the bees might have some chance among the twigs, but it was of no use. They know by instinct that the pirates are there, and will not work. We consequently have poor takes in this country, 30 sections being a good average. Not so in the Eastern Province, where I had no trouble in averaging over 90 sections for 20 hives. There are no bee-pirates there, and bee-forage is abundant.

Section honey is most in demand. People will not take to Colonial extracted honey. They want proof of its purity by seeing the comb. I do not think it is of much use for the government to provide experts to encourage bee-keeping unless they first place a prohibitive tax on imported honey, reduce that on appliances, etc., and reduce railway rates. Even now honey fetches no better price near the coast than in England, and hives and bee-goods are 50 per cent dearer. In such a thinly populated country the demand for honey is not so great as it would appear, and too many bee-keepers would cause a glut in the market, and bee-keeping would cease to pay. Many Dutch and most Kafirs prefer "young brood" to honey, both as a food and for making drinks and yeast. These will never be induced to produce honey.

I can not understand importing bees to this country, with the risks of foul brood, which, if it once obtains a footing, will never be eradicated. Our duty is rather to export bees. I believe our bees are equal to those of any country, and why not better? They are well marked and colored, most wonderful workers of excellent comb honey, easily handled with ordinary care, and more easily subdued than the English bee — provided they have honey to fill themselves on being alarmed.

I have had no trouble in taking wild nests and securing the bees. After driving the bees I tie a piece of comb containing young larvæ in the hive prepared for the swarm. I then throw a few bees on the top of the frames and close down. I then, if possible, secure the queen and place her in the hive, and throw the remainder in front of the hive, when they will soon run in. In a few hours the bees will be seen working. They will never leave, provided honey is obtainable; if not they may "hunger swarm," which is prevented by placing an excluder over the entrance and by feeding. This is advisable in any case, as in this country we have the death's-head moth, which enters the hive after honey, and a large black beetle which devours the young larvæ. A space should, however, be left for the exit of the queen at swarming or mating time, and for the easier removal of dead bees. W. H. EDMUNDS.

Vryburg, South Africa.

### THE STAND OF THE ONTARIO DEPARTMENT OF AGRICULTURE ON THE SUBJECT OF SPRAYING FRUIT-TREES WHILE IN BLOOM.

ON this question we have just received from Prof. P. W. Hodgetts, of the Ontario Department of Agriculture, Canada, something that will be of special interest to bee-keepers and fruit-growers alike. Prof. Hodgetts represents both departments of the fruit-growing and honey-producing business, and his statement gives tremendous weight to the contention of bee-keepers and the intelligent and progressive fruit-growers of this country, that the spraying of trees while in bloom is attended with loss by both interests. His letter is as follows:

ONTARIO DEPARTMENT OF AGRICULTURE.
PARLIAMENT BUILDINGS, TORONTO.

Fruit and Honey Branch,
P. W. HODGETTS. TORONTO, May 28, 1908.

*Dear Sir:*—I note in one of your late issues a reference to the spraying of fruit-trees in bloom, and the consequent loss of bees therefrom. This subject was thoroughly debated in full by our fruit-growers' and bee-keepers' associations a number of years ago, and an act was passed prohibiting the spraying of fruit-trees while in bloom. The act has been enforced in a number of cases, and for a few years a reward was offered by the Provincial Association for the detecting of such cases. For the past few years, however, we have done away with the reward, as it was not found to be necessary. We have been distributing placards among the members of the Association, and have asked them to place these prominently in their neighborhood. I am enclosing a copy of the same herewith. We believe that the practice has now been eliminated in the Province of Ontario.

Very truly yours,
P. W. HODGETTS, Sec.

A copy of the placard above mentioned is here given:

WARNING!
AGAINST SPRAYING FRUIT-TREES IN FULL BLOOM.

The Ontario Bee-keepers' Association desires to draw the attention of the public to the fact that a number of members suffer from persons spraying fruit-trees in full bloom, their bees being killed from the poison in the spraying mixture. This practice is prohibited by an Act of Parliament assented to in 1892, the provisions of which are as follows:

1. No person in spraying or sprinkling fruit-trees, during the period within which such trees are in full bloom, shall use or cause to be used any mixture containing Paris green or any other poisonous substance injurious to bees.

2. Any person contravening the provisions of this Act shall, on summary conviction thereof before a justice of the peace, be subject to a penalty of not less than $1.00 nor more than $5.00, with or without costs of prosecution; and in case of a fine or a fine and costs being awarded, and of the same not being, upon conviction, forthwith paid, the justice may commit the offender to the common jail, there to be imprisoned for any term not exceeding thirty days, unless the fine and costs are sooner paid.

The best fruit-growers consider spraying during the period of full bloom as a useless waste of material, and harmful to the setting of the fruit. It is universally condemned by entomologists in every part of America. The recommended formulas, as sent out by both the Federal and Provincial Departments of Agriculture, state distinctly to spray apple-orchards with Bordeaux and some arsenical poison: 1. Just as leaf-buds are expanding; 2. Just before blossoms open; 3. Just after blossoms fall; 4. Every ten days later if required.

Bee-keepers and fruit-growers are both urged to see that this harmful practice of spraying during bloom is stopped.

It is hoped that the law will not have to be applied, as most persons are unaware of the harm that they do themselves as well as the bee-keepers

Signed on behalf of the Executive Committee of the Ontario Bee-keepers' Association.

F. J. MILLER, Pres., Ealing P. O., London. P. W. HODGETTS, Sec., Dept. of Agriculture, Toronto.

# BEE-KEEPING IN THE SOUTHWEST

By Louis Scholl

There was no spring crop of honey this year. The bees are in good condition, however, and Central and North Texas expect a good summer crop.

The Texas Bee-keepers' Association has over a hundred members. Its next annual meeting will be in July, the dates of which will soon be made known. The convention is to be held at College Station, with the Texas Farmers' Congress. Many very important matters will come up at this time, so plan to be there, if a Texas bee-keeper. Low rates.

A copy of "Southern Bee Culture," by J. J. Wilder, Cordele, Ga., has come to our desk. It contains 150 pages of "Bee-keeping of the South," treating the phases of the subjects in a practical way, with illustrations. Statistics are given showing the status of bee-keeping in each of the Southern States, together with a write-up of the industry of each of these. Texas heads the list, of course!

Southwest Texas, where the bulk of the honey of our State is produced, has reported a very light crop so far. Prospects were never better; but cool nights and rains that prevailed during the honey-flows "cut it off short." The early spring flows are the main dependence there, and the bee-keepers do not "figure" very much on later flows. This is enough to predict a short crop for Texas this year, unless something unusual should happen.

Some people are not so innocent as they pretend. Just so in the case of Dr. Miller, p. 412, regarding who the authorities are that do not believe in painting hives. I do not side with your position if it is as outlined by the editor. In your 40 years of bee-keeping you have changed hives several times already. But what did you do with the old unpainted hives? Threw them away! That is a good argument in favor of painting, for "we-uns" who haven't so much money to throw away. I have changed hives once already in my sixteen years of bee-keeping; and the old hives, which are as good as new, practically, kept so by being painted three times during that period. I am selling off now instead of throwing away. The cost of the painting was gotten out of them in their use, so what I get for them is all profit. See?

### DUMMIES IN THE BROOD-NEST.

Dr. Miller thinks that dummies should be placed in the center of the brood-nest in contraction, since the bees do not work above the dummies so freely when placed at the sides, p. 485. It would not work here during the breeding season; and that extends over the greater part of the year, as we have continuous, long, slow flows — more or less honey coming in, and breeding going on to keep up the strength of the colonies. Now, those dummies, unless of the right kind (Aspinwall's, for example), would have a tendency to keep the queen confined to the few combs where she happened to be. Even a defective comb in the middle of the brood-nest often keeps the queen from getting over to the other side except during the heavy breeding season, perhaps, when she goes beyond; but her laying is retarded every time she comes to this comb. Wouldn't dummies cause the same results if placed *in* the brood-nest?

### HIGHER PRICES FOR HONEY.

With a light crop in Texas, the same in California and in some of the other States, as indicated by the reports thus far, I can see no reason why honey should not range higher in price this season than last. 'Tis true that last year's prices were above the average of several years; but then Southwest Texas had at this time already produced and shipped several hundred cars of honey. While it is generally supposed, through reports from a few of the less favored sections of this State last year, that Texas had a short crop, it is a fact that much more honey was produced. In spite of this prices were good, owing much to the increased demand. This increased demand is quite a natural one. People here are beginning to know more about bees and honey, and the use of it. Many families use more honey now than formerly, also, and this number is increasing. Of course, the pure-food laws have had an effect.

### PREVENTION OF SWARMING.

One of the main secrets (?) in the prevention of swarming is that of providing plenty of clustering room early in the season so the bees may not become crowded. The next is that of preventing a solid mass of sealed brood from developing in the brood-nest by spreading brood and inserting empty combs at the right time, thus providing laying room for the queen. Neglecting this is the most common cause of swarming fever. This congestion of sealed brood is difficult to prevent in deep hives unless combs are handled — empty ones exchanged for full ones, etc.; but in the production of extracted honey it is not so difficult, for the reason that extra super room can be given early in the season. However, the brood-nest must be watched in order that the crowded condition may be prevented, as such colonies often swarm even if there is plenty of room around the congested combs of sealed brood. A colony in this condition would swarm if it were domiciled in a large drygoods-box with plenty of empty space around it. The point is to break up this solid mass of brood.

W. H. Laws, of Beeville, Texas, places a body of empty combs on each colony early in the season for clustering room. Later, when the brood-nest assumes the condition above, the empty combs are used to replace half the combs in the brood-nest below, alternating the empty ones with those containing brood. The upper story is then arranged the same way, with the combs of brood taken from below, and the empty ones left in the super. This done at the right time knocks swarming in the head. If any of the colonies get strong enough to swarm after this manipulation, the upper story is removed to a new stand for increase, and additional room provided. It

is useless to try to prevent colonies from swarming after they have already gotten the swarming fever or have started cells. Such colonies are shaken (shook swarming), and their combs used for other purposes.

In comb-honey production it is much more difficult to manipulate the regular-depth L. hives. Almost all the manipulations necessitate the handling of combs, requiring a lot of labor and time. I have found the shallow-hive system a time and labor saver. An extra shallow super can be placed on the colonies much earlier in the season than a deep one. When the main honey-flow comes this which was used for additional breeding room is filled with extracted honey. Just before the swarming period, another shallow story with empty combs is slipped in between the two lower ones containing the brood-nest—a solid mass of sealed brood generally — thus breaking this up, and providing additional clustering and breeding room. This prevents swarming with us, and insures rousing colonies for the main flow. The comb capacity is then equal to 24 L. combs, all occupied.

When the comb-honey supers are put on they are placed under the upper shallow extracting-super, which is now full. There is no sealed honey, or very little, along the top-bars of the brood-nest, above which bees are loath to store. They are used to working above, and with a full super on top they go to work with a vim to fill up the empty space in the comb-honey super. Much better work is done under these conditions, and the colonies are such rousing ones that the yield must be larger than that from those managed on the plan generally followed. Furthermore, an extra super of extracted honey can be counted on as just so much more profit.

# Fancies and Fallacies

By J. E. Crane

The quotations of the price of honey and wax in foreign markets is of decided interest to us, although we may have no honey to ship to Liverpool or Paris.

Mr. Fritzche, you look very happy among your bees, p. 288, and those sheds certainly look very comfortable this cold windy spring weather; but, say; "don't it nigh a'most" break your back to work your hives under those sheds?

"Honey from combs not yet bred in can generally be distinguished easily by the taste from that which is extracted from dark brood-combs" —Stray Straws, p. 275. Perhaps one person in five hundred can; but who ever heard of a buyer of extracted honey finding fault because it was extracted from old combs?

That "buttermilk honey," page 277, reminds one of some counterfeit bills in the Bureau of Printing and Engraving at Washington, where a bill is executed or printed, so to speak, with a pen; and the same amount of time and industry in a legitimate way would have paid far better even had the counterfeit bill been worth its face value.

On page 275 V. Wuest is quoted as saying or thinking "there is no proof that the nectar of poisonous plants is harmful to bees." I was told many years ago, while in California, that in some parts of the State bee-keeping did not pay, as the buckeye, when in bloom, poisoned the bees. Plants that poison one class of animal life are or may be harmless to another. Aconite is very poisonous to man, but harmless to sheep; and swine are said to thrive on rattlesnakes.

On p. 349 Dr. Miller gives some advice to beginners in the production of comb honey. I can not tell how much it would have saved me to have had some such advice when young in the business. But say, doctor (I should not like to hurt your feelings — no, not for a good-sized doughnut), wouldn't it be better to advise beginners to begin with such sections and separators and bees as will give solid combs rather than to have to bother with two pieces of foundation in each section?

Dr. Miller says, p. 336, that he does not want to believe that bees are unusually long-lived just because they are lazy. Well, he need not believe it. Men are not long-lived just because they are lazy; and horses—don't you know some that will work harder and live longer by far than others? Constitution, strength, longevity, play quite as important a part with our bees as with other races. Don't we all know of colonies with a fair amount of bees and a sufficiently prolific queen that will but little more than hold their own during a season, while others no more populous, with a queen to supply them with eggs, will build up beyond our most sanguine expectations? The last will increase while the first will barely keep the same strength. How can we account for it, except far greater vigor and consequent longevity? It certainly is not in consequence of laziness.

When yellow bees fail to winter well, Mr. Alexander advises that two combs of honey be taken from their hives Sept. 1, to give the queen room for brood. Now, in more than forty years I have never known bees to be crowded for room at this season. The surplus with me is practically all gathered in June and July, while Mr. Alexander's best flow of honey comes in August. While his hives are crowded by September, therefore, my own are sometimes almost in a starving condition, and never need to have combs removed to give room for brood. I believe Allen Latham's views on spring feeding, pages 358 and 359, as well as those that follow, are quite right, and extracting honey in May should be limited to those seasons when there is a great abundance of honey coming in and the brood-chamber crowded, when the extractor may be used to advantage. I suspect that the greater flow of honey at Delanson during the early season is the only reason for the difference of opinion as to the advisability of extracting.

Another thing in this connection I will mention at the risk of being thought heterodox. All advise feeding early enough so fall-fed stores may all be sealed before cold weather. This would necesitate feeding in this latitude early in September; yet I rarely begin feeding before October, and find few or no bad results. The yard that I fed last (after the middle of October) last fall has wintered best. I do not think one-fourth and I doubt if one-fifth of the syrup fed was sealed, and yet that yard has wintered the best of any of my yards—in fact, perfectly, with a loss of only one colony, and that worthless in the fall. Doubtless to feed early enough to get feed all sealed may be best or ideal; and yet let no one feel that, because he has failed to do so, serious results will necessarily follow. I only wanted to say that I think more emphasis has been laid than necessary upon the need of having all stores sealed.

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On page 285 is a picture of as fine-looking a lot of bee-keepers as we often see, and yet on the next page Mr. Holtermann tells us that, in convention assembled, they "resolved themselves into a series of hostile camps, being hot and cold 'processers,' thick and thin 'syrup-makers,'" etc. Well, now! They must have had a live topic; but, alas! all the argument and discussion in the world can not settle these questions. Whether the best results can be had by feeding sugar syrup thick or thin, hot or cold, slow or fast, with inverted syrup or otherwise, can be shown only by careful experiments. Why should sugar syrup need to be inverted? "I don't know." Does it make it more healthful food for the bees, or is it for the purpose of preventing granulation? One thing seems certain: If the bees are provided with a special organ in their mandibles for providing an acid for this very purpose, it must be of considerable importance.

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On p. 281 is an article from the pen of E. W. Alexander, of unusual interest, as it shows how differently we must manage bees under different environments. He says, concerning Italians, "Their never satisfied desire to gather honey causes them to fill their brood-nest early in the season;" and so he advises removing this surplus of honey so the queen can fill the brood-chamber with brood. Now, such advice would be the worst that could be given *me*, for rarely do the bees fill their brood-chamber with honey, and the bees need all the honey in their hives for rearing brood, and frequently have to be fed in addition to what they have or gather. In only two years in over forty have bees crowded their brood-nests with me before clover bloom — once from maple bloom and again from apple bloom; and when such was the case the treatment which Mr. Alexander advises is the best possible. If he errs it is in thinking others enjoy as good a location in springtime as he.

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On page 350 a paragraph is quoted from the *Prairie Farmer* on the use of honey as a food. In the last sentence it says, "The only obstacle in the way of its more general use appears to be that many people can not eat it without stomachic pain." The editor of Gleanings thinks the editor of the *Prairie Farmer* away off, and gives us to understand that the stomachic pains come wholly from overeating of honey. Did you ever! Now, if the editor of the *Prairie Farmer* had said that "some persons" instead of "many persons" can not eat honey without stomachic pain he would, I believe, have stated the exact truth; and had the editor of Gleanings said that as many or more persons are made to suffer from overeating of honey as from any peculiar quality of honey he too would have hit the nail square on the head. Had he also stated that, where honey causes any disturbance of the stomach, whether from overeating or otherwise, a drink of milk will usually bring immediate relief, it would have been helpful.

# CONVERSATIONS WITH DOOLITTLE

### BEES CHOOSING A HOME.

Several years ago, during one season I had three swarms come out, each several days apart; and as soon as all were out in the air they started right off without clustering; and all of my drumming, slinging of water, dirt, and such like, did not stop them. I used to scout the idea that bees looked out for a location before swarming, or while clustered for that matter. I thought they just wandered until they found a place. A year or two after the swarms I spoke of went away I saw bees going in and out of a crack in the siding of the house just under the plate on which the rafters rest, and I thought there was a colony in there; but upon opening a door to a small cupboard there was at that place in the house I found nothing. The next day the bees were there again; and about noon, as I was going to dinner I heard the roar of a swarm, and, upon looking up, thousands of bees were pouring on to the house and running into that crack. This thing continued for some minutes. Upon opening the door that night I found a nice swarm had taken possession of that cupboard. After this I put out hives and boxes all about the premises, in places where I thought the bees might like a home. I have watched the bees going out and in, cleaning up these hives and boxes in an eager and excited manner; and from a day to two weeks I have had swarms come and go into these cleaned places. At times I have seen the scout bees, as I call them, at work, and the next time I came that way I have found the swarm housed and at work. Can I doubt any longer, when, for the past four years, I get in this way each year from four to twelve swarms? I know now that these scout bees lead the swarm to the selected place.

Iowa.

I should have left this letter in its pigeon-hole had it not been that, on pages 1508 and 1554 of Gleanings for 1907 the editor says that he would be glad to hear from others on this scout matter. On pages 1507, '8, Mr. Greiner gives us some very interesting matter on the subject of bees choosing a home, and seems, on the whole, to come to the conclusion that these scout bees are sent out by the swarm as a "matter of compulsion" while the swarm is on the limb, rather than that they go out before the swarm leaves the parent hive to choose a home, so that the swarm knows where it is going before it leaves its old location. But, as Dr. Miller points out on page 1553, I do not see how he could arrive at such a conclusion after telling us that he saw these scouts at work the afternoon before the swarm came. But if I were one of those scouts, sent out from a swarm, I think it would be compulsory with me if I went at all, for I should never expect to see either my old home or the swarm again, but to die a homeless, starved, and chilled wanderer the next night after I went out, especially if my old home happened to be in a modern apiary. Why do I say this? Because if a swarm is allowed to hang

on a limb long enough to send out scouts, these same scouts *mark* their location from where the swarm is, and forget all about their old "parental roof." Very many times I have hung the clipped caged queen, with a swarm of bees, when I was not just ready to care for them as soon as they were clustered; and if thus left for an hour or more, there would be from ten to one hundred bees hanging around the place where the swarm had clustered, within an hour after it was cared for. The bees would stay there all the rest of the day, flying about in a lost condition, and occasionally rest on the limbs and leaves near by, clear up to nightfall, and in a very few instances I have known of a few of them being there during the next day, when the night was very warm.

Here is something about the swarming of bees that I have never seen in print, even if it has ever been noticed before by any one. Why any bee should entirely lose the location of the old home, when being sent out as a scout, is something which I can not understand; but I am quite sure that they do, for I have found them lifeless the next morning on the leaves and limbs where the swarm clustered, after a cool or cold night. Another thing pointing to such a conclusion is this: One day, just after a swarm had clustered, an urgent call came for me to go away for a little time. I hung the caged queen with the cluster and left them. I was obliged to stay till into the afternoon. On arriving home I prepared a hive and was about going to take the bees when they began to break cluster for leaving, and all went off out of sight, leaving the caged queen hanging there. As I always let three or four bees run with the queen into the cage when I am caging her, to care for her should any unforeseen thing happen, I knew she was all safe, so I did not disturb things at all, only to see that every single bee of the swarm not in the cage had gone. I was all interest to know just how this thing would come out, as it was something that had never occurred before in all of my bee-keeping life. The seconds passed into minutes, till ten, fifteen, eighteen, and twenty of them had passed, and I had almost come to the conclusion that I was out that swarm all but the queen, when I heard them coming back. I was now more curious than ever to know where they would go; whether to the limb from whence they went, or back to their old home; so I went to the hive, expecting to see a part of them, at least, return home. But, no, sir; not a single bee went back to the hive; but they clustered on that limb the quickest I ever knew of a swarm clustering in the world.

Now I am sure that swarms send out scouts while they hang on the limb, from the number of bees hanging about the clustering-place after a swarm has hung some time; for if the swarm is taken care of just as soon as the bees are clustered, or if the queen is held from them so that they return to their old home after clustering, none of these scout bees will be seen hovering around all day. The queen *must* be with the swarm, and the swarm hang some time, else the scouts will not be sent out. I have dwelt on this part of the matter more at length than I otherwise would because of this sentence from Dr. Miller: "I am strongly of the opinion, buttressed by much observation, that bees generally send out scouts before rather than after swarming." And I also am equally sure that they send out scouts before swarming, and, as Dr. Miller says, "for several days;" and if he had put it several weeks I would not object. I will give only two of my many observations. The first was like this:

I put a hive in a tree at the side of the apiary for some squirrels to nest in, which came down from the woods near by. They built a nest and stayed till spring. One day during the swarming season I happened to look up at this hive when I saw bees going in and out at the hole I had bored for the squirrels, which led me to believe that a small swarm had taken possession of this hive. A neighbor had requested a small swarm for his boy, and so I told him I had it for him if he would get the hive from the tree the next morning. He came early, got the hive down carefully, so as not to disturb the bees, when to my chagrin, there was nothing but the squirrels' nest in the hive. At my request he put the hive back, and by ten o'clock that day the bees were going in and out at the squirrel-hole as thick as ever; and by careful watching I could detect now and then a shred of the nest taken off by some of the bees flying out from the hole. This was kept up for three days more, when we had two or three days of bad weather, during which I saw no bees at the squirrel-hive. Two or three days later it came off fair again, and the work went on at the squirrel-hive, and, one day later, a swarm commenced to issue from a nearby hive, and, to my surprise, they went right out from their entrance into the hole in this squirrel-hive, scarcely circling about at all.

The second, and the most exasperating of any of the very many scout cases which have come under my observation, was like this: An old bee-hunter came to me one day the latter part of June and said he had found a bee-tree, and wanted me to help him cut it in the fall so we could save the bees. He told me it was a big hard maple with a hole in the side of it forty feet from the ground. Passing that way two days later I looked at the hole and saw many bees going in and out of the same, so I took it for granted that he had tracked bees to the tree. One wet afternoon in September he came with a dull saw and ax for me to go with him to cut the tree. We took all that was necessary to get the bees and honey. To make a long story short, it was after four o'clock when the tree come down, and my hands were so blistered that I could hardly work the smoker, which we had going for an hour or more. Rushing up to the hole with the smoker to keep the bees from pouring out, not a bee was seen, and, what was more, not a bee could be heard. Ten minutes sufficed to "slab" off the side above the hole, when we found a cavity all nicely cleaned, but not a single bee, either dead or alive. Upon questioning the man closely he said he went by the tree two days before he told me of it, saw the bees going in and out, the same as I did, and was sure he had a bee-tree.

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ARE BEES REFLEX MACHINES? in the Italian language is now being published serially by *Apicultore* of Milan. The translation is from the English edition now appearing in GLEANINGS. The translator is V. Asprea, of Calabria, Italy.

# GLEANINGS FROM OUR FOREIGN EXCHANGES

By W. K. MORRISON

With reference to Italian bees, I note some of the Swiss breeders around the Lake Maggiore mountain region claim to have the best strain of these bees, or what we term in this country the leather-colored Italian. It seems to me this is so, and some of the breeders on the lowlands advertise their bees as descended from that stock.

The Belgian journal, *Le Progress Apicole*, in a recent number prints an article by the editor, wherein he states that, on August 26th of last year, he saw a great many black bees working on violet (red) clover. He saw more of them thus engaged than he did of Italians and their crosses, though the latter are quite plentiful around there. Just score one for Dr. Miller's irascible blacks.

The *British Bee Journal* for April 16, 1908, contains a fine portrait and sketch of the career of Mr. Edward Bertrand, the well-known editor and author who did so much to popularize the Langstroth system of bee-keeping in Europe. His journal, the *Revue Internationale*, was a model of what a bee paper ought to be; and his book, "Conduct of the Apiary," has had an excellent sale, having been translated into six languages. He translated several other works from English into French, notably Mr. T. W. Cowan's books. He lives now in retirement at Nyon, Switzerland.

President Kramer, of the Swiss Bee-keepers' Association, has just issued a new book, "Die Rassenzucht der Schweizer Imker und die Amerikanischen Zucht Methoden." Taken all together it is the best work on queen-breeding I have seen. It contains a wealth of beautiful illustrations. The printer has done his part to perfection; and the paper and general *ensemble* leave nothing to be desired. President Kramer is broadminded, and gives America its due in respect to many little discoveries and inventions having to do with queen-rearing. This makes up a book of 168 pages, octavo size. It has the last word on queen-rearing, and it will be difficult for the next writer on this great little subject to surpass it. Such a book from so small a country makes we 'uns look *small*. The publisher is Paul Wassel, in Freiburg (Baden). Price 50 cents.

We do not monopolize the correspondence-school business by any means; for I recently received the catalog of a bee-keepers' correspondence course of instruction issued by Mr. P. Peters, of Baud, in France. During 1907 nearly 200 students took the course, and, so far as one may judge from a synopsis of the lessons, the studies must be of considerable practical value. Aviculture is also taught at the same place, the idea of the founders being to instruct students by mail in the small industries connected with agriculture. France for many years led the world in poultry culture, and even now is not much behind the United States. The French farmers excel us in the production of really superior table fowls. The Peters school also supplies a course in arboriculture—a very interesting and practical subject, and one that ought to receive more attention in this country.

For more than fifty years lectures on bee culture have been given in the gardens of the Luxemburg, at Paris. The first lecturer was the famous Hamet, who founded the well-known Parisian bee-journal *L'Apiculteur* in 1856, and which is one of the best bee publications in existence. The present editor, Prof. Sevalle, is now the lecturer. The lectures are free to all.

The Parisian contemporary of GLEANINGS, *L'Apiculture Nouvelle*, contains in the April number an account of the principal bee-plants of France. The first is sainfoin clover, that celebrated standby of the European bee-keepers. It is very extraordinary that this plant has never been boomed in this country as a forage-producer, though it is one of the best known. It is not as heavy a yielder as alfalfa, but the hay is superior, and it produces a full yield of nectar wherever it is grown. Rustic alfalfa is also mentioned as a good honey-plant. This has been grown in Michigan to some extent. Perhaps this is the right kind for Ohio, Indiana, and Illinois. Buckwheat is mentioned as being grown extensively in Brittany, Auvergne, Morvan, and Bresse. I am under the impression that buckwheat is often used in France to feed poultry, and Bresse is justly celebrated for its fat chickens.

One of the European bee journals recently gave map illustrations of the distribution of the bees of the world belonging to the genus *Apis*. This included practically the whole of South America. As a matter of fact, there are none of our bees in the great valleys of the Amazon and Orinoco—not a single colony. There are honey-bees, originally from Spain, in the highlands of Colombia and Venezuela, but the stingless bees in myriads occupy the great river valleys. Our bees, when introduced, soon die out. Their enemies are too numerous. Prof. Frank Cheshire fell into the same error as our German contemporary. South America has native bees that sting, but they are very different from *Apis Mellifica*, and were there long before Columbus sailed from Cadiz in 1492. *Apis mellifica* bees are quite common in South Brazil, Uruguay, Argentina, Chile, and Western Peru, where the conditions are more favorable.

I have received a copy of the anniversary number of the Manila *Daily Bulletin*, sent out by the publicity committee of the Manila Merchants' Association. The number now before me is a remarkable tribute to American enterprise. Its 78 pages are twice the size of GLEANINGS, and it is beautifully illustrated with many half-tone engravings. It is chiefly devoted to showing the agricultural features of the Philippine group. There are fine articles on the forests, fruits, fibers, orchids, oil-plants, nuts, starch-plants, and railways and water transport. Most of the information would be a revelation to many Americans—at least 95 per cent of them. Any one who has a notion of trying colonial tropical life ought to send for a copy. Price 34 cents.

# EXTRACTED - HONEY PRODUCTION.

## Uncapping the Honey.

BY W. Z. HUTCHINSON.

*Continued from last issue.*

It is possible that the California plan of melting the cappings as fast as shaved off may prove the most desirable plan; but, so far as my experience goes, I have found nothing better than letting the cappings drop into a cracker-barrel set over a tub. Some grocers give the barrels away, if you are a customer; some ask five cents apiece for them, and I never paid over ten cents. The cappings can be allowed to stand and drain for weeks and weeks—no hurry about the barrel; simply pay ten cents for another one.

I bore three or four holes in the bottom of the barrel for the honey to run out. This may not be necessary, as such barrels are not water-tight; but it is a wise precaution to be *sure* there is a place for the honey to get out. Then I nail a wooden cross-piece just inside the top of the barrel; but before nailing the cross-piece in place I drive through it a ten-penny nail; and when putting the cross-piece in place I turn the point of the nail upward.

LAMP STOVE THAT KEEPS THE UNCAPPING-KNIFE HOT.

Honey extracted in hot weather, soon after it is gathered, may not require a hot knife for its uncapping; but to uncap in the cool weather of the fall, honey that has been on the hives all the season, a hot wet knife is almost a necessity.

CRACKER-BARREL FOR AN UNCAPPING-CAN.

After a barrel is full it can be set to one side, over a tub; or two or three barrels can be stacked up, one on top of the other, and allowed to drain for weeks. The cappings can be brought home, or even shipped by freight, right in the barrels.

In uncapping a comb the end of the frame is rested upon this nail-point, which comes as near being a universal joint as any thing with which I am acquainted. The frame can be turned "every which way," and it will not slip about. The barrel is supported over the tub, or slightly below the top, by means of double hooks made of heavy wire. In the accompanying engraving one of these hooks is hung outside, upon one of the handles, to show its shape and make-up. Four hooks are used, placed equidistant around the edge of the tub, and the barrel lowered down upon them, the hooks catching just inside the "chime." There is still another plan of supporting the barrel that has the advantage of furnishing handles with which to lift the barrel, and that is to nail two slats of wood to the sides of the barrel, about four inches from the lower end. The slats are nailed to opposite sides of the barrel, at right angles to the staves, and are long enough so that the ends rest upon the upper edge of the tub. The only objection to this plan is that the ends project out slightly beyond the edges of the tub, and are just a little in the way.

After the honey is off the hives, and warmed up, the biggest part of the remaining work is that of uncapping the combs. If they are thick and "bulging," they can be uncapped much more easily. If only eight combs are used in a ten-

ONE OF THE HUTCHINSON APIARIES IN NORTHERN MICHIGAN.

frame super they will be of this class, when, by cutting deeply, so as to leave the combs only about one inch thick, each side can be uncapped with one "fell swoop." It was hard for me to get over the feeling that I ought to uncap as thinly as possible—that thick cappings were like thick parings from a potato—but it really makes little difference whether the honey goes through the extractor or drains from the cappings.

To do the best work when uncapping, the knife ought to be sharp, hot, and wet. Only the man who has tried it can realize the difference between such a knife and one that is cold, dull, and dry. I have a little two-burner oil-stove standing upon a barrel at my elbow, and upon the stove a tin or pail filled with water. When through uncapping a comb I simply lay the knife in the hot water, as it is just as easy as to lay it down somewhere else. When I begin uncapping the next comb, the knife is hot and wet; and the way it will slip through the comb is a caution. If this management did not keep the knife hot enough, then I would use two knives, leaving one in the hot water while using the other. When heating up the honey with the Perfection heater, we found that we could dispense with this small stove by using two pails of water, leaving one on the Perfection heater, while the other sat upon the barrel at the side of the operator. When the water became too cool we simply changed places with the pails.

Very new combs or very old ones do not uncap as easily as those that are between the extremes. An old comb that has recently been drawn out thick—that is, the bees have lengthened the cells, partly with new wax and partly with wax taken from the old comb, is about the nicest comb to uncap. The lower part of the comb has a stiffness or stability, while the upper part has sufficient softness to make it cut easily. A man can afford to go to a lot of pains and expense to get exactly the right kind of combs to use in his supers—old combs spread wide apart—as the saving of time in uncapping is very important.

To uncap a comb, rest one end upon the nail-point of the cross-piece over the barrel. Stand the comb in a nearly upright position. Hold it with the left hand, grasping it near the upper end. Begin at the lower end to uncap, giving the knife a sort of slanting, shaving movement, such as a barber gives his razor, drawing it back and forth as it cuts its way upward, at the same time slanting the comb slightly forward (toward the knife) so that the cappings, as they break off, will drop into the barrel instead of upon the surface of the comb.

THE EXTRACTOR.

I have used the two-frame reversible and the four-frame automatic reversible, and I have seen the eight-frame automatic in use when run by a gasoline-engine. My preference would be the four-frame automatic. It is certainly worthy of all praise. The brake, the automatic reversing of the combs, the ball-bearings, are time-savers and great comforts. The machine is inclined to run more steadily than the two-comb machine. There is less of that wobbly motion if the combs vary in weight. Power is needed to run the eight-comb machine; and, as the only object in using this machine instead of the four-comb is to save time, I doubt the expediency of employing it, and the attendant power, in the plan that I am following. There is no special hurry to get the extracting done, as when fewer supers are used and some of the combs must be emptied to give the bees room. To run the eight-comb, with power, requires a crew of men to work to advantage, while one man can work very advantageously with the four-comb; or two can work together to very good advantage. If I were to adopt the eight-comb and power, I would get only one extractor and one engine, and then move them from one yard to another, as the work was completed at each yard. This, of course, would require a team, while I am trying to work out a system in which there is no transportation from one yard to another during the entire season, except that of the man who does the work.

The manner in which the extractor is set up to do the work will depend upon the surroundings. We have three extractors, and each is set up in a way different from the others. Where we extract in the cellar the extractor is set nearly a foot above the floor, and then a hole, or pit, nearly two feet deep is dug, in which to set the strainer-tub and cans to be filled. Of course, the sides of this pit are boarded up. At another apiary the honey-house is built over the cellar, and here the extractor stands directly upon the floor, the gate being placed over the hatchway, the straining and canning of the honey being done in the cellar. The honey runs out of the gate, falls down through the hatchway, and drops upon the strainer below. At the other yard a solid platform, nearly three feet high, is built in one corner of the honey-house. This platform is large enough for the extractor, for the man to stand who turns the crank, also for one or two supers of combs to stand, side by side. An extractor at this height from the floor allows room for the strainer, and for a man to stand upon the scales below the honey-gate of the strainer-tub.

*To be continued.*

## DR. MILLER AND THE USE OF QUEEN-TRAPS.

### Their Use and Abuse.

BY R. L. TAYLOR.

For the purpose of discussing queen-traps and clipped queens, Dr. Miller starts out with what purports to be a quotation from an article of mine on the subject, as a text. He has evidently made the quotation from memory, and, relying on that, his memory has played him false. The language he chiefly criticises is not to be found at all in the paragraph which he ostensibly quotes; even the subject of queen-traps, which is his main topic, is not mentioned in that paragraph at all; yet these phrases, with some correct quotations, are thrown together with comments of the editor and remarks of his own, all duly marshaled under quotation-marks, proclaiming "this is a literal quotation."

Beginning with the above paragraph I set out to reply to the article by Dr. Miller on page 556, and it was followed by a mild criticism of his method of making quotations. Since writing, however, I have been informed that the doctor was in nowise responsible for the quotation-marks,

nor for the mention of my name in connection, but that the proof-reader has to bear the blame. The doctor, therefore, is entirely exonerated, he having simply paraphrased what I had said and what the editor had said I had said. The doctor's fault is, I think, that he should have realized that a paraphrase of a paraphrase stands a small chance of doing reasonable justice to the original. Even so I am not averse to following him through the refinements of his discussion.

He first attacks an expression found in the assumed quotation; viz., For queens are likely to be superseded at any time, for any cause, without the knowledge of the apiarist. Concerning this expression he asks whether it is not slightly overdrawn. Well, perhaps it would be misleading if readers had little or no knowledge of the habits of bees. But I always feel a strong hesitancy about entering into details of which my readers have as much knowledge as myself. Who of my readers would think that sentence was to be understood as intimating that bees were likely to supersede their queens in winter? or who but Dr. Miller that they were as likely to do it in May as in August? Were I to say that in this locality it is likely to rain in January, who would suppose that I meant to affirm that it was as likely to rain then as in April? But, after all, that was not my language at all; what I actually did say was simply this: Queens are superseded; accidents happen to them, sometimes. Is not that harmless enough?

Again, how is it possible for the doctor to understand from "page 19" that I meant to affirm that "the new queen, after she gets to laying, is likely to go off with a swarm"? In our former controversies Dr. Miller had sometimes to resort to the assertion that I was unfair. I have no inclination to retaliate in kind; but, rather, I feel as Job may be supposed to have felt after his adversary had written a book, if the old version of him is correct; for did he not exclaim, Oh! that mine adversary had written a book? If I am misrepresented I only ask a fair hearing—then let the record declare judgment. But, to return to the point: Does not every bee-keeper of any experience know that a colony, even if of only fair strength, having young queens emerging during the swarming season, either on account of supersedure or for some other reason, will generally cast a swarm? and do they not know that the swarm is always led by a virgin, not a laying queen? The first swarm I had last season was led by a virgin queen, and it was not a solitary instance.

Further on he asserts that I practically say, don't clip, but put a queen-trap on each hive, etc. How could the doctor make that assertion? Perhaps the editor is partly to blame, for the quotation in GLEANINGS does not at all bring out the points in my argument in favor of the trap. It might have been an advantage to the doctor had he had before him the article from which the quotation was taken. I should have been glad to furnish him with a copy if only that he might have correctly stated the restrictions which I would place upon the use of the trap. What I do say is, don't clip; let the bees swarm naturally when there can be an efficient attendant; but when such attendant can not be had to care for the swarms, then use traps to be visited every three or four days, for traps will prevent all absconding, while clipping will by no means do that. Clipping a queen prevents her from leading off a swarm; but when she is lost or killed, as she is likely to be soon if not cared for, it is but a question of a few days when a young queen will emerge, and in all probability undertake to escape with a swarm.

The trap, of which the doctor makes so much, is not even mentioned in the quotation on "page 19," but the doctor is after the trap, and asks whether it would not be natural for some readers, at least, to put on traps in the spring, leaving them thinking that thus the matter was settled for the year, thus destroying the unmated queen, and, through that, the apiary? No doubt, no doubt. I have known of cases of bee-keepers clipping unmated queens.

As a result of his neglect to secure and read my article from which the extract on page 19 is taken, the doctor falls into the error of appearing to attempt the riding of two horses at the same time, by criticising my method of managing swarming without clipping, on account of the necessity of sorting out queens from united swarms, on the one hand, and, on the other, criticising what he supposes, apparently, to be my advice and practice in regard to the use of the trap, as though I used at the same time both the free-flying-queen system and the queen-confining-trap system on the same colonies.

The doctor seems at a loss to understand why a queen in a trap through which a swarm has just passed should be more effective in recalling the swarm, or, in other words, in putting them on their good behavior, than a queen hopping about on the grass, and asks for a reason. The reason seems plain; a queen hopping about on the grass has no abiding-place. Generally for some time there are few or no bees with her, and the bees are not inclined to look for her in the grass; but when they fail to find her in the air they naturally seek her at the hive, where they last knew her to be; and as she is there with a retinue, the swarm, if in the air, is soon notified, and returns more promptly than they would if she were not so found. In other words, they discover their queen more quickly, and so have less time and opportunity to unite with other swarms. But I may not understand on just what point the information is sought. It may be with reference to the matter of swarms uniting and entering other hives than their own. In answer to that I should say that, in addition to the above, I make no claim of advantage for the trap in that respect over the clipped-queen system. But remember, it is not traps against natural swarming with an attendant, but traps against clipped queens in cases where there can be no attendant. I can't be sure; but I rather guess that, if the doctor were taken suddenly ill, or called to a distant wedding or funeral, in the height of the swarming season, with no possibility of obtaining any one to look after his bees, he might, possibly, remember traps with a certain longing; or would he prefer to trust to clipped queens?

In a nutshell, when there is an attendant the doctor prefers clipped queens during swarming. I prefer the queens unclipped on account of the more rapid settling of the swarms and the increased freedom from uniting and from the entering of strange hives. When an attendant is wanting I prefer traps, because in such a case they are the best security against the loss of bees, but they should have attention twice a week. In such a case the doctor prefers—?

Lapeer, Mich.

[As Mr. Taylor intimates, Dr. Miller was not responsible for the quotation-marks inclosing his first paragraph on page 556, May 1st issue. Owing to a difficulty with eyesight, as explained editorially on page 683, last issue, we did not discover the presence of the aforesaid marks. When Mr. Taylor sent in his article he very naturally inferred that the doctor was misquoting him, and very properly called him to account. When we explained the matter to Mr. Taylor, he exonerated him and substituted other paragraphs.—ED.]

WAYNE PAVILION, OR SUN PALACE, WHERE THE NATIONAL BEE-KEEPERS' CONVENTION WILL MEET, OCT. 13, 14, 15, 1908.

## WOOD SPLINTS PROPERLY APPLIED SUPERIOR TO WIRE.

### How to Prepare and How to Apply.

BY B. F. AVERILL.

I note Dr. Miller's article in April 1st GLEANINGS; and as I find wood splints, properly applied, to be superior to wire, I will submit my plans. I am not asserting that any of the ideas advanced are better than those hitherto given, but they may be found more practicable by some operators. If the plan of using splints is coming into more general use, the best possible methods of application should be put forward at as early a time this season as possible in order to give bee-keepers a chance to test them.

My plan of using the splints incorporates them with the frames as well as with the foundation; and thereby I secure a more substantial comb than if incorporated only with the foundation.

The first essential part of the plan is to have top and bottom bars grooved in the center to receive the ends of the splints. A saw-kerf $\frac{1}{16}$ gauge

JOHN BAILEY'S DISPLAY OF HONEY AT THE BRACEBRIDGE EXHIBITION. ONTARIO, CANADA.

and ⅛ deep is the most suitable dimension to adopt. The splints should be $\frac{1}{16}\times\frac{1}{16}$ or $\frac{1}{16}\times\frac{3}{32}$. The latter dimension is better for splints properly built into combs on a good flow of honey.

The splints are ¼ inch longer than the distance between the top and bottom bars, inside measurements. Waxing is best, but may be dispensed with in a good honey-flow.

To wax the splints, take a dozen or two at a time between the fingers and twirl them in a vessel of hot wax. A little practice will develop the requisite skill. It is not necessary to wax the *entire length* of splints. There will never be any gnawing of foundation around the splints *near the top-bars*. It is at the bottoms of combs being built that all the cutting-out is done.

So you can leave two inches at one end of the splints safely, and the waxing is a small job comparatively. Just stand the splints on end in a leaning position until you have enough supplied for the foundation to be used that day, or a week or month later.

Now, in putting in the foundation you have two inches of unwaxed splint to handle them by. Take hold of this portion and insert the waxed end in kerfs in the bottom-bars, and *spring* the splints into the top-bars. That is the whole process. Now, by using eight splints there is no need of *fastening* foundation to the top-bars. This saves much time, and all that is requisite to success is to be *sure* the foundation fits *close* to the top-bars. If bottom-bars are not of good thickness to support the weight of heavy combs, there is going to be sagging sooner or later. I would advise gluing in a splint to the top and bottom bars through the center of each frame. This unites the top and bottom bars at the center of the combs, and no sagging of combs is possible.

For imbedding splints I use a small wooden roller. Imbed the foundation by placing the splints on the bottom of the foundation and the roller on the top. It is easy work compared to wiring, and a much greater amount of foundation can be stayed in the same length of time.

I wire many frames for purposes that I can not take room to explain. I am situated so as to make a pretty accurate estimate. As regards wiring, I find the principles of application generally faulty. It is reasonable to suppose that the greatest strain upon foundation occurs near the top of the frames; hence here is the proper place for applying the maximum support. I never use more than three horizontal wires, and not 25 frames in 1000 show the least sign of stretched foundation. My first wire is placed 1¼ inches from the top-bar; second wire, 1¾ below the first wire; third wire, 2¼ below the second wire, and 5¼ below the top-bar. The foundation *below* the third wire from the top-bar is not going to stretch; and if all wires are put in reasonably tight the foundation will not stretch anywhere in working.

I have been wiring combs over 30 years, and have used splints 23 years. I like wood splints the best, but wiring is good enough, though it takes more time.

Howardsville, Va.

[The question may arise whether it would not be advisable to use a combination of wire and splints. Three or four horizontal wires stayed up through the middle by one or two wooden splints might retain the advantages of both systems. Who has tried it?—ED.]

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*L'Apiculture Nouvelle* mentions the fact that Servia now has a bee journal edited by Mr. Christophe Mechoulya, and published at Belgrade. Our Austrian friends have done a great deal to improve the agriculture of Servia, and that the country, small as it is, supports a bee journal, shows some one is doing good work for apiculture.

## A NOVEL HONEY EXHIBIT.

### A High-class Business Deserves a High-class Display.

BY JOHN BAILEY.

The reason why I like to make a good exhibit or display of my bees, honey, and wax is because it helps to advertise my business, because it introduces honey to the public, and because it helps to sell *my* honey. It also helps to increase the gate fees at our exhibition. Part of my exhibit is not visible, such as the observation hive and the tin and glass packages, of which I had about fifteen different kinds. The wax horsehead on top was made in a mold, as were all the cones, etc. I like to have the display of honey high enough to show above the heads of the crowd of people. A white background shows the honey well if it is put up in glass, and not too close together.

Bracebridge, Ont.

## MAKING INCREASE.

### The Somerford Plan Modified; the Alexander Plan not a Success During Apple-blossom Time.

BY J. A. CRANE.

When I wish to use a colony for making nuclei I remove the queen as directed in the May 1st issue, page 577, placing her in a cage on top of the frames. I leave her there three days, at the end of which time there should be cells started. I then take one frame with a little brood, and place it in a hive of drawn combs; set the colony off its bottom, and place the hive of drawn combs in its place, letting the queen run on to this one comb of brood. Over this I put a queen-excluder, and set the hive of brood on top, and put on the cover. The bees will finish the cells just as well as if the queen were caged for the ten days, and a new colony will be started below, so that, when the cells are nearly ripe, we can take the brood and bees from the upper story, and form nuclei without having to leave a single frame or any of the bees that are on them. If the colony was very strong there will soon be a good working colony on the old stand. By this method we are able to make one more nucleus from a colony than by the original Somerford plan. Any hive which we intend to use in this way we build up before caging the queen, so that there is a large amount of brood in every frame. I let the queen start about all the frames, and then set the fullest ones on the outside of the brood-nest, and in a short time have them all practically full of brood.

I make my nuclei by the Somerford plan, and sometimes stuff the entrances with grass, but oftener close them with a stick for three or four days. When I open them I push the stick so as to let only one or two bees pass at once for a couple of days, then open two inches. I have had brood in seven frames within fourteen days from making the divisions, and the bees storing in extracting combs in thirty days.

Last season I tried the Alexander method of increase during apple-blossom, and instead of the queen making a start toward a brood-nest below the excluder, the bees jammed the lower story full of honey before there was a patch of brood as large as my hand. They refused to carry it above after I gave them extracting-supers, and, after a little, swarmed. I think it would have worked all right on a slow honey-flow, but I shall not try it again during apple-blossom time.

Marion, N. Y.

## D. E. MERRILL, OF THE W. T. FALCONER MFG. CO., JAMESTOWN, N. Y.

BY E. R. ROOT.

As announced in our last issue, Mr. D. E. Merrill died on the 16th of May after lingering between life and death for six days following a paralytic stroke that he received at Bemus Point, on Lake Chautauqua, whither he had gone with some friends.

D. E. MERRILL.

Mr. Merrill had not been in good health for five or six years. Two years ago he received a slight stroke of paralysis, but apparently recovered. A couple of weeks ago with a party of friends he went up the lake, stopping at the place mentioned above. While at dinner, and without any warning, the fatal stroke came.

Mr. Merrill was 49 years of age, and leaves a wife and three children. He was prominent in Masonic circles, being a 32-degree member, and a member of the Royal Arcanum. In a social way he was connected with various clubs, and in

a business way was the junior partner of W. T. Falconer, of the W. T. Falconer Mfg. Co., so well known to our readers.

He started in business originally as a clerk in a wholesale grocery, and later was appointed paymaster in the United States Navy, finally entering the Signal Service. After this he was a book-keeper in a number of large institutions. In 1882 he started the manufacture of the Empire washing-machine, on which he obtained several patents. A little later he entered into partnership with W. T. Falconer, forming what is now known as the W. T. Falconer Mfg. Co. The washing-machine business appears to have been taken over, and later on the company went into the manufacture of advertising novelties, including rules, thermometers, and other specialties of a like nature, the making of bee-supplies being continued as before.

It is almost needless to say that the manufacturing business of the W. T. Falconer Mfg. Co. will go on as before.

THE HASSLER BROTHERS, OF PRINCETON, ILLS.

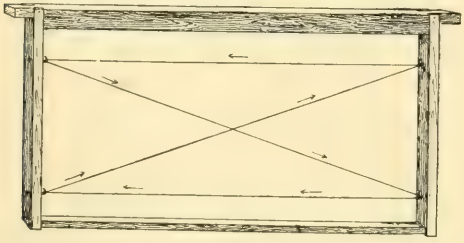
## WHAT A 17-YEAR-OLD BOY CAN DO.

### Wiring Frames Without Piercing the End-bars.

BY WM. M. HASSLER.

The two boys shown in the engraving are my brothers, who are very much interested in bees, especially the younger one, who is eleven years old.

I commenced keeping bees myself four years ago with one box hive, when I was 17 years old. I now have 15 colonies in Danzenbaker hives, with 11-inch telescope covers. I winter them on the summer stands, and have always had good success. I make a brick of hard candy for each hive, and put it over the frames (*a la* Abbott), and I believe it is a good thing. From nine colonies, spring count, I produced nearly 500 lbs. of comb and extracted honey; but most of it was No. 1 and fancy comb in 4×5 sections. I think



most of the honey was from smartweed, which grew in abundance after the hailstorm which swept this part of the country and ruined the crops.

How can I prevent bees from gnawing the fences? What do you think of this way of wiring frames? Drive two nails, about 1½ inches long, in each end-bar; bend them into hooks, and wire, as shown in the diagram.

Princeton, Ill., Feb. 17.

[If your fences are made with the proper-sized bee-spaces, and the bees persist in gnawing the slats, it would be best to supersede the queen. It is not often that the bees give much trouble in this way unless the slats are too close together.

In the end your method of wiring the frames will not prove to be very satisfactory. The foundation at the point where the wires cross is held rigidly; and since there is nothing to prevent the upper half from sagging, buckling is quite often the result. This plan, known as the Keeny, has been used for years, and, so far as we know, has been generally abandoned.—ED.]

## ASPINWALL SLATTED FRAMES.

### Using them with Langstroth and Hoffman Brood-combs, to Prevent Swarming, not Likely to Prove Successful; Closed-end Frames in a Box vs. Closed-end Frames in a Rack or Frame.

BY L. A. ASPINWALL.

[In order that our readers may better understand the points brought out by the inventor (Mr. Aspinwall, of the Aspinwall non-swarming hive with its slatted dummy frames), the reader is referred to the illustrations which we used in our issue for Nov. 15th, 1907, pages 1441, 1442, and 1443, of this hive. We will explain that we wrote Mr. Aspinwall that several were writing us, asking why those slatted dummies without the bee-space end-bars could not be used in an ordinary Langstroth brood-nest, one dummy alternating with every other brood-comb, increasing the capacity by adding extra stores. Mr. Aspinwall answers this in the subjoined article.—ED.]

Many have asked why the Aspinwall slatted frames could not be used in connection with standard Langstroth and Hoffman frames, and thus make a non-swarming hive. Apparently, at first thought, the saving would be an advantage

in that only a larger hive-body would be required, or two regular stories with slatted frames alternating the combs instead of one story and no slatted frames. If, however, estimates be made covering the cost of material for a large closed hive-body and an Aspinwall open rack or frame, I believe a balance would be found in favor of the latter. Taking into consideration the width of material used in each, we shall find narrow and small pieces of lumber used almost exclusively in the Aspinwall hive.

Furthermore, while some have expressed an opinion preferring solid or closed sides, there are two reasons why the frames should be supported with the least closure possible. This applies to closed-end frames, and prevents propolizing the outer sides of the uprights or ends. Closed-end frames surrounded by a bee-space, as contained in a solid casing or hive-body, have two objections which can not be overcome—the propolizing, which renders them difficult to separate, and the bee-space filled with bees, which interferes with rapid manipulation of the frames. This last objection also applies to ordinary hanging frames.

Without exaggeration, I believe that Aspinwall frames can be handled at least three times faster than any other style or make, which would be impossible unless contained in a rack to hold the comb-frames, thus avoiding the propolis and bees which would otherwise interfere.

A still more important feature is the prevention of an excessively high temperature during the oppressive heat of summer. But some one will raise a question as to the effect of cool nights. Upon examination we will find all colonies in closed bodies employing an excessively large force of workers both night and day in the work of ventilation. With Aspinwall hives but a small force is requisite during the day, while at night we hear but little more than the hum of contentment, unless the weather be exceptionally warm. Inasmuch as heat is one factor which induces swarming, its control must constitute a part of the non-swarmer. After having experimented with these hives so many years, I can not but realize the great disadvantage bees are compelled to labor under in ordinary hives, both in respect to overcoming the heat of summer and the crowded condition; yet many are trying to control swarming when the principal factor which induces swarming (a crowded hive) is not taken into consideration.

Let us now consider the relation of the cluster in reference to a thoroughly ventilated hive as contrasted with one having little or no provision for the comfort of the colony in this respect. Upon the technical observance of this feature in hive construction—namely, open hive-bodies and brood-frames with slatted ends, used in combination, we practically obtain a square, which, aside from the spherical, most economically conserves the warmth of the colony when separated by slatted frames. The writer can not forget the years of failure by attempting to use them with those of Langstroth length. So subtle are the combined forces which constitute successful inventions, we can not afford to overlook even those of the least importance; and in proportion as we follow the unerring laws of nature in this respect do we obtain success.

Having combined brood-frames with slatted ends for ventilation and distribution of the bees, also slatted frames alternating them, we obtain a uniform distribution of both bees and temperature laterally throughout the hive.

By adding a super we approximate a cubical form, which is also in accordance with the diffusion of warmth, and by tiering we practically obtain a cube, which, for conserving the warmth of the colony in the storage of honey, can not be equaled. The generating of heat in the lower story or brood-apartment of the hive and its ascendency through wide passageways afforded by the slatted frames, is a feature which will preclude the use of two stories of ordinary hive-bodies and slatted frames. The ordinary Langstroth or Hoffman frames are too short to afford ample supering surface—five square sections in a holder being requisite to the best results and to avoid excessive tiering.

Bee-keepers are cognizant of the fact that deep frames are not well adapted to storage of comb honey, much less two hive-bodies with slatted frames separating the combs and reducing the crowded condition of the colony. With such an arrangement, filling the brood-combs of the upper hive-body with honey in lieu of continued brood-rearing would be a natural result, especially as the queen is not likely to pass from a lower to an upper story unless by pressure of a crowded hive.

One valuable feature of the Aspinwall hive is the absolute freedom from brood in the supers, although no queen-excluding zinc is used. In hive construction the cost of frames is regarded as a small item; so that, in utilizing those of various makes to obtain a non-swarmer, no saving would result, as all parts required, aside from the frames, must be new. Inasmuch as the present style of hive-bodies made sufficiently large for a non-swarmer would cost as much as or more than the Aspinwall, there would be nothing utilized but twenty-five or thirty cents' worth of frames poorly adapted to the making of a non-swarmer.

In view of the numerous difficulties which must be surmounted in perfecting an invention, it behooves us to retain every feature which is requisite to perfect success. Therefore, let us transfer good clean combs from the Langstroth and Hoffman frames to those provided with slatted ends. These improved frames can be handled with great ease and rapidity, which is essential in this age of high-tension bee-keeping.

Jackson, Mich.

## EQUIPMENT FOR EXTRACTING HONEY.

### The McIntyre Uncapping-box; the Arrangement of the Furniture in the Honey-house.

BY E. D. TOWNSEND.

At our honey-houses at the extracting-yards we have a four-frame automatic extractor, a McIntyre uncapping-box, a honey-tank provided with a strainer and a gate at the bottom, and platform scales with an electric bell attached to give warning when a can is full. Since we put in cans all

of our honey as fast as it is extracted, we have on hand also a stock of 60-pound cans. Minor tools are necessary, such as uncapping-knives, pails, wash-dishes, towels, etc.

Our extractors are the automatic four-frame machines, none older than the 1907 model. We disposed of all our small extractors, and also of the old four-frame Cowan machines, for we wished to have nothing but the most up-to-date tools to work with.

Our McIntyre uncapping-box is made of galvanized steel, and is 4 ft. long, 2 ft. high, 2 ft. wide, as shown in the engraving. The slatted framework at the bottom is made a little smaller than the can so that it may be easily removed to be washed. As there is only a 1½-inch space under this frame for honey storage, we leave the gate open all the time so that nearly all of the room in the tank is available for the storage of cappings, as it should be.

The engraving does not show the frame at the top correctly, for the long side-pieces should be close enough together so that the frames can hang between them as though they were in the hives. After the honey is extracted, the combs may be placed back in this rack; but the principal value of the arrangement consists in providing a place where the *uncapped* combs may be hung to drip before they are extracted, for in this way no extra apparatus is needed.

The two short pieces of the framework at the top should be nailed on the bottom of the long side-pieces about 1¼ inches from either end. It can be seen that, when the long side-pieces rest on top of the tank, the short cross-pieces fit just inside, keeping the framework from sliding either way, and yet allowing it to be easily removed when the cappings are taken out. The metal pieces containing nail-points can be tacked on in any position to suit the convenience of the operator.

We have used many different designs of uncapping-boxes, but none seem to me quite so convenient as this McIntyre box. It will hold all of the cappings from one extracting in a yard of ordinary size. We use a six-tined short-handled fork for handling the cappings, and each morning the dry cappings from the day before are pitched up toward one end of the tank, and in this way the honey from the new cappings does not have to drain through the dry ones over and over again as it would if we were to uncap on top of the cappings left from the day before. In one instance we had more cappings than we could keep in the tank, and a sugar-barrel with a perforated bottom was set over a galvanized steel washtub, and the dry cappings pitched into it. In this way the capacity of the tank may be said to be unlimited. The advantage of the large area of the bottom is that the honey drains out of the cappings much better if they are spread out in a thin layer than it could in a deep tank where the bottom is comparatively small.

The cost of the tank alone is about $4.00, the freight making it perhaps $5.00. We use the Perfection 1½-inch gate, which costs 75 cts. If the woodwork should cost $2.00, the entire expense of the tank complete would be about $7.75, and we think we have a much better and cheaper arrangement than a wooden box.

The honey as it comes from the extractor is drawn off into a 14-quart pail. We never make the mistake of leaving the extractor-gate open all of the time, for it is too easy to forget and allow the pail to run over, making a big mess on the floor. In order to avoid this waste of honey we at one time went to the expense of having shallow pans made to catch the overflow in case we forgot. We now allow the pail to remain inverted over the strainer until the reel of the extractor begins to "swim" in the honey in the bottom of the extractor. We then draw off a pail of honey without letting go of the gate; for when the honey is warm it does not take one-fourth of a minute to fill the pail through the large gate, and there is no risk of running the pail over. There is also the advantage that the pail may be draining during the time when another pailful is being extracted.

The strainer tank is of galvanized steel, and holds 15 or 20 gallons of honey. A heavy wire selvage is put around the top to stiffen it; and as this wire is on the outside it is easy to fasten on the cheese-cloth strainer,

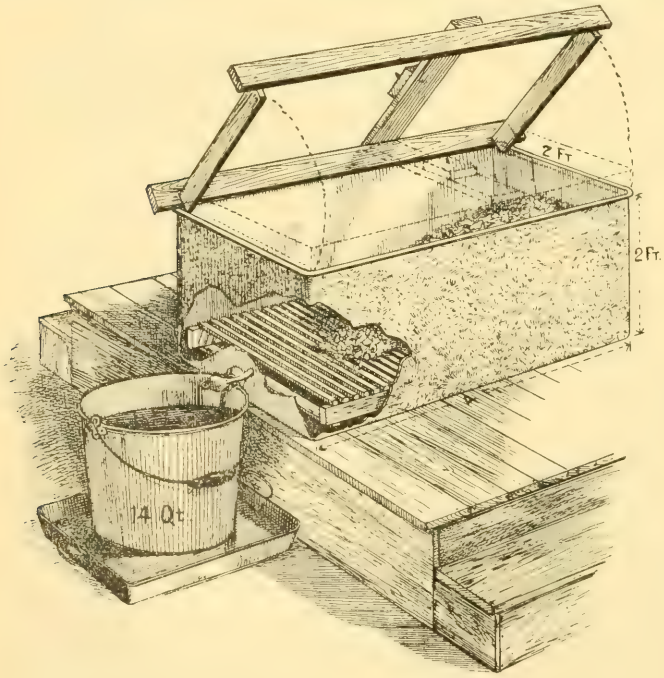



FIG. 1.—THE McINTYRE UNCAPPING-BOX AS USED BY E. D. TOWNSEND.

which is held in place with a small rope drawn tight by being twisted with a stick. This cloth strainer must, of course, be fastened very firmly or it will go down into the can when a pail of honey is emptied on to it. At the bottom of the strainer-tank is a 1½-inch Perfection gate through which the honey always runs in a round stream which is just right for filling the 60-pound screw-cap cans. Most of the other gates throw the stream to one side during the time they are being opened or closed, and some of the honey is, therefore, daubed over the side of the can. All this is avoided by using the Perfection gate, which throws a round stream, no matter how wide it is opened.

The strainer-can is elevated in order to run the honey from the gate into a 60-pound can set on the scales. The gate is open all the time except when the cans are changed. An electrical alarm, as first described by Mr. Hutchinson, is used to give us warning when the can is full—see Fig. 2. No one should hesitate about trying one of these alarms, for they are very simple. The engraving shows the method of connecting the bell to the battery. In brief, two wires run from the two posts on the battery to the two posts on the bell; but one wire is broken, one of the ends being fastened to the scale-beam at the pivot, and the other being located just above the outside end of the beam. It can be seen that, when the can is full, the scale-beam rises and the circuit is completed so that the bell rings. It is necessary to have all of the connections tight, as the bell may fail to ring if there are any loose contacts. We set the scales as usual at the 62½-pound mark to allow for the 60 pounds of honey and the weight of the can, and then lay a two-pound weight on top of the can and turn on the honey and go on with our work. It can be seen that, when the scale-beam goes up and rings the bell, there will be 58 pounds of honey in the can. We then remove the weight and weigh the honey as usual.

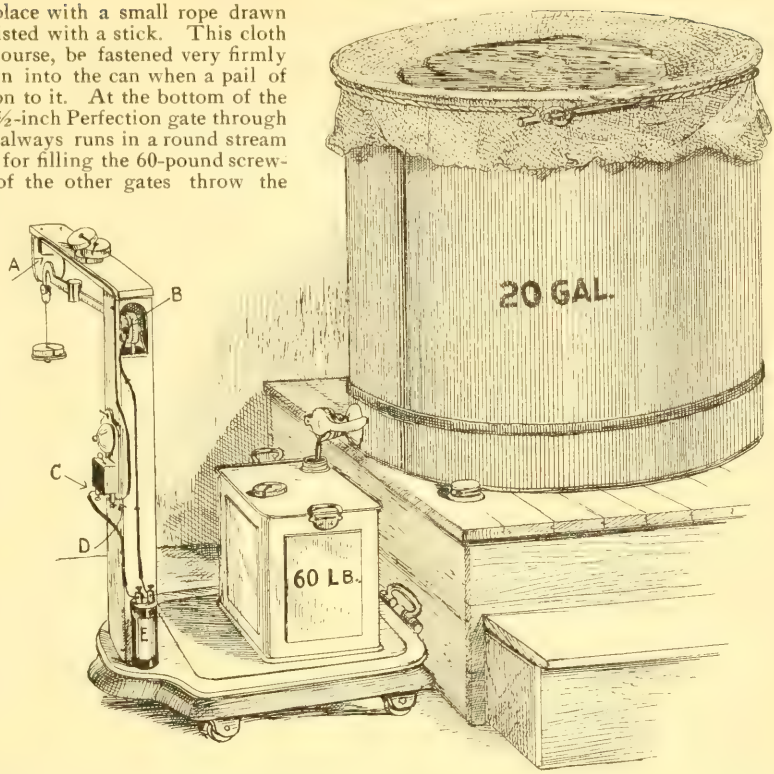



FIG. 2.—E. D. TOWNSEND'S ARRANGEMENT OF STRAINER AND SCALES, ILLUSTRATING THEHUTCHINSON AUTOMATIC ALARM.

Mr. E. E. Coveyou, of Petoskey, Mich., has made an automatic scale that closes the gate when the can is full. He uses an eight-frame automatic extractor provided with a Holtermann strainer in the bottom. This extractor is located on the platform about 2 ft. above the honey-house floor, and a rubber hose from the strainer in the extractor conveys the honey to the gate on the scales. This rubber hose stops all the vibrations caused by the running of the extractor, and this precaution is really necessary; for if the automatic scales were fastened solid with the extractor the vibration would so affect the flow of honey that some of it would not go into the small openings in the 60-pound cans.

Remus, Mich.

[Mr. Hutchinson will soon describe the Coveyou automatic scale in these columns.—Ed.]

## THE TROUBLES OF AN AMATEUR BEE-KEEPER.

### Failure through Success.

BY F. DUNDAS TODD.

Bees not troublesome? May be not; but you could not prove the fact on the witness-stand by me. My neighbors learned of my trouble, and came to give me sympathy, but I did not want it. I told them I was delighted with things as they were. I really was, but they could not understand. I had a problem to solve, which was something far more fascinating than robbing a hive of fifty pounds of honey at the end of a smooth-flowing season. So I begged to be left alone with my entrancing troubles, and turned more assiduously than ever to the books. I bought

all I came across, subscribed for three magazines, and put all my spare minutes on the ever growing problem of bees.

Then I bought another hive, being determined to have a first-class one as a standard of comparison. It came from Flint, and I know now that Mr. Hutchinson sent me a dandy. I wondered how so many bees could find room in so little space.

My first went from bad to worse, and at last a happy idea struck me. The wonder is, it did not strike me before. As editor of a technical journal I had to answer daily over a dozen letters from people who were in trouble, and so I decided to call on Mr. York and state my case for his opinion. He was kindness itself, and at the outset doubted my diagnosis of bee paralysis. Nay, more; he volunteered to examine the hive, diagnose the disease, and prescribe the remedy. He made short work by pronouncing it a case of queenlessness, with at least one laying worker. Remedy, total extinction. I pictured the sulphur-chamber; but, no; he advised placing it above my other hive with a sheet of ordinary newspaper between, in the center of which was punched a small hole with an ordinary leadpencil as the readiest tool to be found. He went even further, and administered the medicine himself.

A rather amusing incident then happened—in fact, two of them. Mr. York looked over my new hive to see how it had stood the journey, and of course I wanted to see the queen, as I had never seen one. I remember he declined to put on gloves. I had had too sharp an experience with my first effort to be ever without them; in fact, the bees got at my fingers through the cotton lots of times until I oiled the part that covered my hands. That oiling experience was amusing because I soaked them so thoroughly that it took two weeks' exposure over a steam-boiler to dry them. The next time I applied sweet oil to bee-gloves I tried to see how little I could lay on them; but even that was a plenty. So I closely watched Mr. York's fingers as he handled the frames, and I must admit I chuckled when a sudden "ouch" broke from his lips as he sharply swung his left hand against his trowsers leg. It is not the same word I would have used, but I guess it meant about the same thing.

To return to the queen-hunt. The first overhaul was fruitless; the second, the same. Mr. York decided the task was hopeless, and made all preparations to close the hive. I happened to step behind him and look downward, when my eye caught sight of a large yellow bee just above the calf of his leg. I quietly mentioned the fact to him, so he gently looked round and pronounced that I had found the queen, which he speedily returned to the frames, in which she disappeared. My acquaintanceship with Mr. York had been very short, but I had at one time lived several years in his "locality," and knew that he bore a very excellent reputation, so did not insist that he was trying leg-bail tricks with my only queen.

In less than a week my double and now only hive had a lot of finely chewed paper lying around its entrance; and when the upper hive was lifted I found the paper entirely gone, and evidence that the bees from the lower half had taken full possession. A few weeks more this hive was simply full of bees; and since white clover came in bloom I decided to dodge swarming by dividing my hive. I had never in my life seen a swarm of bees, and I never wanted to. My friend who had kept bees as a boy had suffered a relapse of bee-fever, and bought a hive from Mr. Hutchinson when I got my second. Being a practical man he despised books, and told me I was simply wasting time, as the only way to learn bee-keeping was by experience. Then the theorist got on his nerve and proposed a competition, the test to be selected by the practical man. He said honey, and honey it would be.

So to the books and magazines I went more assiduously than ever. I had one Dovetailed and one Danzenbaker hive, so I had to decide which I would adopt, and I studied the pros and cons. The decision was in favor of the latter on purely theoretical grounds, and so two more were got. I ordered a couple of queens, and on their arrival I drew ten frames from my double-decker and placed five in each, alternating with empty frames, then introduced the queens, which were accepted. Transferring seemed a big problem, but it had to be done if uniformity of appliances were to be secured, so this was tackled and successfully accomplished.

The season of 1906 in Illinois was a poor one, as every one knows, and I waited expectantly long weeks to see what a honey-flow looked like. White clover bloomed June 1, but the bees did not develop that tremendous energy I had read about but had never seen. My practical friend was longing for a swarm, and in picturesque language he described the delirium of the bees as they rushed pellmell out into the wide, wide world to seek a new home. To him at that moment the whole pleasure of bee-keeping seemed to consist of one huge swarm of absconding bees, with him racing after them in wild pursuit. I am too lazy for that kind of excitement, and prefer expansion under control.

Sweet clover bloomed July 1, and by the middle of the month I was able to provide a lawn party of a dozen at my house with six complete sections, purity guaranteed, and believed, since they saw the honey taken from the super.

August 15 the honey-flow was over, and my first venture in bee-keeping stood thus: 30 fine sections of honey from hive No. 1; one new hive had finished its combs and built up in good shape; another new one, in fair shape, but not nearly so good as the other.

My friendly rival had all the fun he wanted racing after three swarms, climbing as many trees, and learning by experience that what was fun at fifteen is a nuisance at forty-five. But he got no honey. Need I say how I would occasionally call him up on the phone, and in my blandest tones tell him I had a rather curious substance called honey at my house; and, if he cared to see it, just to come over. Or I would ask him very politely if anybody had ever told him what bees were kept for; if he did not know I could tell him—it was to get honey. Twice I sent a section to his wife, with my compliments, and he handed me the cigars when we met.

The theorist had beaten the practical man. The Danzenbaker hive had won a victory over the Dovetailed.

Medford, Oregon.

*To be continued.*

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### HERSHISER'S SCHEME OF SPRING MANAGEMENT INDORSED; THE EGG-LAYING POWER OF A QUEEN THAT HAS BEEN CONFINED IN A WEAK NUCLEUS.

After reading the article by Mr. Hershiser on page 347, I wish I could get every bee-keeper to read it twice. If any one is in doubt about a fresh queen being able to lay all the eggs an average colony can take care of, let him try a queen that has been held in check by a weak colony until about fruit-bloom time, and then give her all the conditions favorable to brood-rearing, and notice the results. I doubt if they will think it necessary to have two queens to the hive.

It is not so much the queen that gives results as the conditions by which she is surrounded; yet there is a vast difference in favor of a fresh queen as compared with one that has, as it were, laid out her litter and is approaching the time of her usual summer vacation.

Giving eggs and young brood to a strong colony will retard swarming, even if you do not take any of their mature brood from them; yet there is nothing that will boom brood-rearing in a weak colony like giving them a frame of hatching brood; but if you want to go them one better, give at the same time one of the combs just outside the brood-nest in the strong colony that contains no eggs, but is filled with raw nectar and newly gathered pollen. This, of course, is to be placed next to the brood in the weak colony, never between the combs of brood.

So. Cabot, Vt. D. S. HALL.

### DIFFERENT SHAPES AND SIZES OF FOUNDATION STARTERS.

I was much interested in Mr. W. A. Pryal's article in the Dec. 15th issue, on the subject of bottom starters, as I have been experimenting with them somewhat the past season. I had about the same luck with them that he did, except in one colony which I experimented on by putting foundation in the sections in several different ways—top starter, full sheet, top and bottom starters. There were even a few in which I did not put foundation. The sections were all filled up full, and you could scarcely tell one section from another. In fact, the honey would grade No. 1. The bees in this particular colony are the best to work in sections of any that I have ever had, and they did not offer to swarm at all the past season. The queen of this colony is a daughter of an untested red-clover queen. The bees are as gentle to handle as any one could wish. EDW. A. REDDOUT.

Baldwinsville, N. Y.

### SOME OF THE IMPORTANT POLLEN AND HONEY PRODUCING PLANTS OF THE CANADIAN NORTHWEST.

The first bloom we have here in the spring is from the pussy-willow. It grows very plentifully along rivers and creeks in the Canadian Northwest, and is a great pollen-producer. At about the same time we have the box-elder, or ash-leaved maple, and the prairie crocus, both important for pollen. A little later the wild cherries, currants, and wild roses come in bloom, and still later, about the begining of July, the willow-herb and wild vetch come. Much honey is obtained from the willow-herb, or fireweed. Last of all come the wild aster and the goldenrod. A considerable amount of honey is taken from goldenrod some years. All these grow in the wooded districts except the crocus.

Swarthmore, Sask. EDWIN J. HOPE.

### MEETING OF PENNSYLVANIA BEE-KEEPERS.

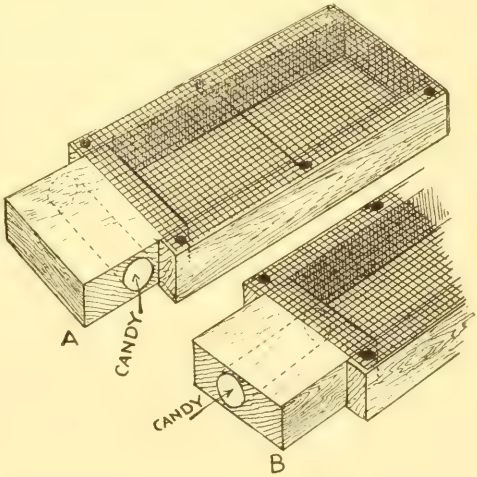
The Lebanon Bee-keepers' Association held its regular spring meeting at the apiary of Messrs. H. K. Beard & Brother, near White Oak Station, on Saturday afternoon, May 2. President Miller, of Myerstown, occupied the chair. About seventy-five bee-keepers were present, and all enjoyed the different addresses and took part in asking and answering questions.

The question-box was a feature of the meeting, and there were all sorts of questions, interesting and instructive. Many different views and methods were thus brought to light. This will also be a feature of the July meeting, and all bee-keepers who want questions answered should make it a point to have them in the hands of the secretary by July 1, so as to gave ample time to procure speakers who will answer them intelligently. C. F. KLEES, *Sec.*

Annville, Pa.

### NEW STYLE OF MILLER INTRODUCING-CAGE.

I am sending you a style of Miller introducing-cage upon which I should like to have your opinion. You will notice the plug can be inserted either way. One way covers the candy so that




neither bees nor queen can gain access to it, while the other way leaves it free for the bees to work on. CHAS. G. MACKLIN.

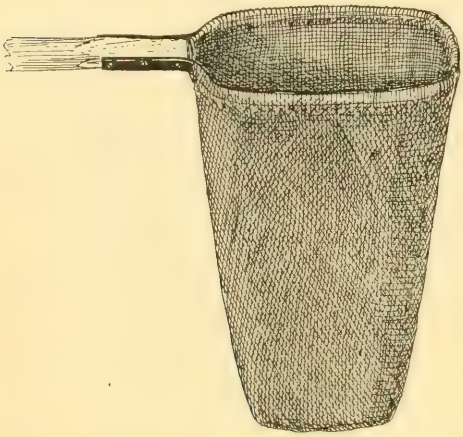
Morrison, Ill.

[There are some features about this cage that are very good; but if the cage is made small enough to go down between the combs the hole in the block will be very small—probably too small for the queen to pass through safely with-

out danger of being stuck fast by the candy adhering to the inner wall of the hole.—Ed.]

A SWARM-CATCHER MADE OF A BURLAP SACK.

Take a good strong iron barrel-hoop. Sew a good fertilizer-sack to the hoop, then squeeze the latter to an oval shape; put in a handle, any



length you wish. When you shake the bees in, give half a turn. That closes the sack, and not a bee can escape; then dump in front of the hive.

Tontogany, Ohio. R. L. McColley.

[The same general plan of a swarm-catching sack was shown in the earlier editions of our A B C of Bee Culture, and, in fact, is still shown there. See page 410 of the last edition. The device is so simple that any one can make it.—Ed.]

BEES AND HONEY IN UTAH.

I started in last spring with five hives. From these I captured seven swarms. One of the five, and also one of the swarms, failed to make even a pound of surplus, on account of foul brood; but from the other four and their swarm I got 924 lbs. of nice comb honey, the most being made by swarm No. 7, which was cast May 27, which made 177 lbs. The next best was 151 by swarm No. 8. One of the original five swarmed four times; and at the end of the season I had 113 lbs. of surplus to its credit. I called it my crazy hive, but there seemed to be "method in its madness," after all.

Last Sunday, as Mrs. Tidd and I were returning from the Easter service at Provo, we drove right up into a mammoth swarm of bees as we reached the house. We were not looking for a swarm quite so early in the season, but had hives ready in the event any should come. They settled on the ground in our little pasture at the roots of some cherry-sprouts. I soon had a hive there, but was having some trouble getting them started to go in when Mrs. Tidd said, "Why, there is *another* swarm."

I looked, and there, about two rods away, on a weed about a foot high, was another cluster. As my bees were all leaving, and clustering there too, I concluded that the queen must be there, and so I moved the hive over to Mrs. Tidd's cluster, and soon had them hived nicely, and saw the queen as she went in. I want to say right here that Mrs. Tidd is a great help to me in the apiary, and the outdoor exercise is excellent for her.

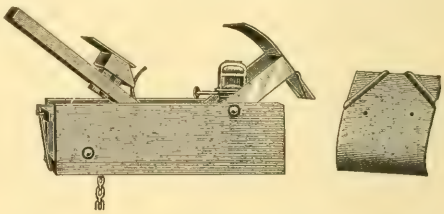
I bought a few more stands this spring, and now have 16 including the Easter swarm. It is doing beautifully so far. Fruit-trees are all in bloom now. C. H. Tidd.

Provo, Utah, April 22.

P. S.—Our Homes department, conducted by you, deserves special mention, and I hope you may be abundantly successful in your work of reformation.

THE DEWEY FOUNDATION-FASTENING MACHINE.

There are now on the market a number of devices for fastening starters, employing a hot-plate; but while all have their merits the principle of the flat plate is subject to serious objection. My device is a coverless box with a sliding table. The chain is secured to a small lever clip which forces the moving table forward when pressure is applied to the treadle. As the table slides forward or away from the operator the curved plate swings forward toward the operator. The section is held in position by the curved spring. As the machine is closed the heater-plate describes an arc, passing over and into the section, and coming to rest just below the stationary plate. It is this position of the hot plate that makes this device so distinctive. It does not touch the section at any point. Neither does it come in contact with any part of the machine adjacent to the section, but is suspended free from any thing that could be soiled. When the section has been adjusted and the machine closed, the starter is slid down the small plate until it touches the hot plate; the pressure on the treadle is then released; and as the hot plate recedes from



the section the starter is pushed down until it touches the section, to which it is securely and centrally fastened. All dripping wax is carried away from the section to the rear of the hot plate, and may be collected in a dish placed at the rear if desired.

Starters are fastened so securely that the wax will tear before they will start from the section. Full sheets or ¼-inch starters are fastened with equal ease. Many have reported a speed of 500 starters per hour, and 600 per hour has been reported.

Aside from its many other desirable features, no soot can soil the section or dripping wax clog the machine. The small kerosene-oil lamp, using a no-chimney burner, produces an intensely hot flame with nearly complete combustion.

Great Barrington, Mass. D. H. Dewey.

# OUR HOMES

By A. I. Root

Give, and it shall be given unto you; good measure, pressed down and shaken together, and running over, shall men give into your bosom. For with the same measure that ye mete withal, it shall be measured to you again.—LUKE 6:38.

Great peace have they which love thy law, and nothing shall offend them.—PSALM 119:165.

Dear friends, I have used the above texts several times, especially the first one, and it pains me to find out that a good many do not take it as I meant it. This is especially the case when I recently spoke of the labor troubles, and declared that the gospel of Jesus Christ would be a perfect and unerring remedy. Of course, I meant that this gospel should apply to the wealthy employer as well as to the day laborer — in fact, to all humanity, high and low, rich and poor, white and black. May the Holy Spirit guide me, and so direct me that I shall be able this June morning to make my meaning plain.

Many good people seem to be *afraid* to be liberal and generous, and I fear that some of us are, at least at times, afraid to be *honest*. A good friend of mine (and a *money-lender*) used to say, many years ago, that when a man does all he *agrees* to do he is a pretty good man, and that is true. Oh what a blessing it would be if all the people we meet were always ready and willing to do *all* they agree—our transportation companies, for instance, and particularly our express companies. I once expressed a part of a bicycle from Cleveland to Chicago. I paid the charges in advance, and got a receipt saying, "Paid through to destination." But when I called at the express office in Chicago there was something more to pay. I produced my receipt, and told the clerk that I had it in black and white, paid through to destination. "I do not care any thing about your receipt," he said, "nor what you paid in Cleveland. You can not have this property unless you pay these charges." As the amount was small I did not quarrel about it; but, even though I am a man of peace I have since felt sorry I did not take the matter up with the company and make them fix it — not because of the amount of money involved, but because of the principle and the precedent it helped to establish. But I am not going to talk about express companies just now.

Some years ago in the poultry department in this journal there was an advertisement that did not look just right. I investigated, and found it came from the editor of a poultry journal published in —— ——, Ohio. Now, notwithstanding he was the editor and proprietor of a *poultry journal*, he was trying to sell a recipe for preserving eggs for several dollars, and that, too, to his subscribers. Let us look at it a minute. We have periodicals and journals representing almost every industry nowadays. The proprietors are leaving no stones unturned to get people to subscribe; and, whether they say so or not in plain black and white, they are supposed to be giving their readers promptly, each month, every new discovery or invention that will be of value to the poultry-keeper. In fact, that is the mission of every class journal.

Well, now, this man in his circular for preserving eggs *admits* that he has some valuable secrets that he is holding back from his readers. If you will just send him the "dollars" he is begging for he will let you "into" *something wonderful*. I am sorry I did not save the circular; but if it did not say it would preserve the eggs so perfectly for a whole year that they would then hatch out good chickens, it came pretty near it. We refused to give his advertisement another insertion, and dropped the matter there.

For years this business of selling recipes for preserving eggs has been going on. We get a circular every few days, even yet, although our experiment stations have again and again explained the whole matter, and the Department at Washington has sent out a bulletin giving all the information obtainable in regard to it from an unbiased source. I might say briefly that the soluble glass seems to be equal if not superior to any thing known.

Just now all or nearly all of our poultry journals give place to advertising secrets. The Hogan system and the Potter system are still offered for from one to ten dollars, and the editor of one poultry journal defends the business of advertising secrets, and ends up by saying it is everybody's privilege to let them alone if they do not want them. Some of our foreign journals editorially *advise* their readers to pay ten dollars for the Hogan secret. Now, the editor of any industrial journal can, if he has energy and enterprise, get hold of all information of this kind, and do it, too, in an honest and gentlemanly way. If he chooses he can *buy* the secret and give it to his readers free, or he can get the experiment stations throughout our land to assist him in giving people every thing that is of value to them. Our different experiment stations have as a unit declared over and over again that nothing of value is *ever* peddled out in the way of secrets. Let me give you an illustration. Suppose your neighbor's potatoes are being eaten up by potato-bugs, and that his patch will be ruined before night. We will suppose he is new in the business, and does not know what to do nor how to do it; and suppose you have just bought the secret, for which you paid one or even five dollars, as the case may be; but when he comes to you in his distress you tell him, "I would let you have my recipe, friend A., in a minute; but I have signed a contract not to divulge nor to let anybody 'look into the book' containing the directions. if it were not for that contract, with my name to it in black and white, I would help you out of your trouble straightway; but as it is, I do not see but you will have to let your potatoes all go. You see I am tied up and helpless."

May be I have put the above a little too strongly, but I think not. I once remonstrated with a young physician because he refused to tell his patients what the medicine was he was giving them. He turned on me with scorn, saying something as follows:

"Do you think I am going to give away my secrets that I have learned by long study and much experience? Not much! Shall I tell the people what I use to cure them so they can go to the drugstore and buy their own medicine without consulting me? Not if I know it."

I have never heard of that young doctor since. In fact, I doubt if he *is* a doctot at all by this

time. When I call a physician I always tell him plainly at the outset that I very much prefer to have advice rather than medicine—that is, if no medicine is *really* needed; and when he tells me it is something I need not be at all worried about I sometimes have to urge him to take pay simply for giving me the benefit of his advice and experience.

Now, in every thing I have to say, dear friends, please remember that I may be mistaken and in the wrong. Please keep in mind that I am simply making suggestions to you and giving you *my* point of view and observation. Now, when I give you a little of my experience of years past, please do not think I am boasting. It is the Lord Jesus Christ I want to hold up and not poor faulty A. I. Root. When I began reading my Bible, something over thirty years ago, I turned right square about in a good many things; and that beautiful text, "Give, and it shall be given unto you," helped me greatly in turning right square about. I had at that time no patent on my all-metal honey-extractor; and my impression is now that if nine-tenths of all the patents had never been taken out or granted, the world would be just as well off. I have no doubt our older readers will remember that when Gleanings was started I commenced ransacking the face of the whole earth, if you will excuse the expression, in order to get hold of every thing that was valuable to bee-keepers; and then I sat up nights (and set type myself at times) to get these valuable facts before our readers just as soon as possible. When I had worked out a better plan for sending queens by mail I sent a special circular free of charge to all the friends who were mailing queens. If anybody advertised any *secrets* in bee-keeping, making artificial honey, etc., I sent the money and gave you the secret free of charge.

There is another text along the same line from the same chapter from which my first one comes. It says, "Do good and lend, hoping for nothing again; and your reward shall be great, and ye shall be called the children of the Highest." Why, is not that promise just glorious? I never fully realized it until *just this minute* as my eye alighted on it in the open Bible that lies before me as I dictate. Jesus not only says our reward shall be great but that we shall be the children of the Highest—*God's* children.

Well, if I am correct I made the first all-metal honey-extractor, toward forty years ago. I told you all about it in the old *American Bee Journal*. Although I might have patented several features of it, I took out no patents. Just about this time some visitors from Toledo, O., came to see us. One of them asked a good many questions about my new extractor; and he even took out his rule and made measurements of different parts of it and put it down in a notebook. I supposed he was thinking of making one for his own use, and said nothing about it, and thought but little about it until a few weeks later, when an advertisement appeared in the *American Bee Journal* that read something as follows:

"Honey-extractors made just like A. I. Root's, but $1.00 cheaper than the Root extractors."

Of course, I felt a little hurt at this, but concluded to say nothing. A little later my good friend Prof. Cook got out his first edition of the B ee-keepers' Manual," and I felt still more hurt to see that he had pictured *this* extractor (copied from mine) with the manufacturer's name on the printed picture. I did not lower my price on account of the advertisement; but I tried hard to make a *better* machine than I had been making for the same money. Some of the veterans will remember this first frail machine, and the amount of work it did was really remarkable at that stage of proceedings.

Now, friends, we are about ready for the second text. I first got hold of it at a union revival meeting here in Medina. Somebody got up in meeting and said in a voice that startled us all, "Great peace have they that love thy law, and nothing shall offend them." Whenever I feel hurt I try to remember about the "great peace"—that it is your privilege and mine to have it; and then I try again not to be *offended*, no matter what may happen or come up. Oh what a bright and happy world this would be if people would not take *offense* too easily! When we get to the stage (or *age*) where we shall not take offense, no matter what shall happen, we are getting pretty close to heaven.

Some time ago I criticised somewhat the *Woman's National Daily*; but now it is getting to be not only right on the side of the *temperance* war, but it gives me some happy surprises in regard to other things. In a recent issue there is an editorial headed "Revolverless Robbery." A trolley car in Philadelphia was held up and robbed, and the robbers went right through without hindrance because there was not a revolver in the whole crowd—not even in the hands of the conductor. The editor rejoices over this fact; and I want to add, "May God be praised that Philadelphia had at least *one* carload of people without a revolver." It is intimated that the robbers themselves did not even show a revolver; and Editor Lewis thinks it was a great deal better than to have a fusillade of bullets that would be more likely to injure innocent people than to kill the robbers, as happened in the following case, which I quote from the very same paper.

FIVE SHOT IN MAN-HUNT.

Sergeant, Ky., May 27.—Officers of the county have been on a man-hunt in the Blackberry Creek region near here. Their special object was to capture Sam and Thomas Followay, wanted for lawlessness, and believed to be trying to escape across the Virginia line. In a Hungarian settlement where it was thought the two men were concealed, there was a general shooting-scrape, and five of the Hungarians were shot. Two of them were women, and their wounds are mortal.

It is the old story of Nimble Dick, who not only failed to hit the obnoxious crow but destroyed a valuable cat sitting in the window.*

Well, while I give a hearty amen to that part of it, I *do* think the police of that great city should leave no stone unturned in order to get hold of those highwaymen. And let me suggest that the first and foremost "stone" to be rolled over would be to get rid of the saloons that curse not only Philadelphia but every other great city in our land.

* As some of the children may never have heard about "Nimble Dick" I have asked our stenographer to give you a verse that sent my memory back fifty years or more as soon as he suggested the application of the moral to the shooting of five persons.

Nimble Dick, he was so quick
He tumbled over a stick of timber;
He bent his bow to shoot a crow,
And killed a cat in the window.

I have just one other illustration to give you; and I have been thinking that perhaps I *may be* a little more out of the way than the good friend whom I am going to criticise just a little. When I heard that beautiful hymn for the first time in St. Louis, "The King's Business," I spoke of it in these Home papers, and I said the most I could remember of it was the closing words, "Be ye reconciled to God." Just as soon as that journal had gone out, somebody tore a leaf out of his hymn-book and mailed it to me, giving the words and music. I mentioned it in GLEANINGS, and promised to give our readers the words and hymn. After I got the electrotype plate of it, however, Mr. Calvert called my attention to the fact that it was copyrighted, and that I could not print it in GLEANINGS, nor even have copies printed for use in mission Sunday-schools in Michigan and Florida and other places, without permission. I accordingly wrote to the owner of the copyright. I also inclosed some copies of other hymns, words only, that I had been using in Sunday-schools so the pupils and all could sing the new pieces as they came out, even if they did not have the books. Below is his reply:

*Dear Mr. Root:*—I am very glad indeed that you discovered that "The King's Business" was copyrighted, for under no conditions do I allow anybody to reproduce the hymn. It is too valuable a copyright; and, while you might think it would be a good advertisement to send free copies out, at the same time I prefer to advertise in another way, so you will please not distribute any copies of the song as per your reproduction.

Chicago, Ill., July 13, 1907. E. O. EXCELL.

Of course, I felt a little hurt, but let the matter drop. Some time afterward, however, it occurred to me that friend Excell would probably have no objection to my using the *words* only without the music, and I wrote him, telling him I wanted to use the leaves to distribute to poor children who had no money to buy books. Below is his reply to that:

*Dear Mr. Root:*—I have yours of the 27th. Replying I will say I am not in the habit of allowing my copyrighted hymns to be printed words only. The fact is, it might vitiate the copyright, inasmuch as my songs are all copyrighted, words and music. You ought to be very careful in printing Sunday-school songs words only, for fear that you print some copyrighted hymns and thereby throw yourself liable. There is a fine of $1.00 for each copy so printed. I am sorry I am not in a position to accommodate you this time. E. O. EXCELL.

Chicago, Ill., Aug. 30, 1907.

Now, I shall have to confess that it seemed to me a little severe that a great Christian worker, whose fame extends all over the world, should object to letting these beautiful hymns revive and gladden the Sunday-schools of our land,* but that other text, about "great peace" and not being "offended," brightened me up again. And then I remembered that friend Excell might have said, in defense of his course, that the very hymn I wanted, with a dozen others, including the celebrated "Glory Song," were published in pamphlet form for just the purpose I needed, at the exceedingly low price of $2.00 a hundred; and that if these poor children could not afford two cents for a copy the superintendent and officers of the school could easily raise the sum needed.

It is my privilege, without question, to give *my* time and money and inventions to the world without charge; but I should certainly be out of place, and a very poor Christian, if I should say that *all* inventions should be given to the world without the protection of any patent. Friend Lewis says in that editorial I alluded to that the world would be very much better off without revolvers, or perhaps without so *many* revolvers. He says, "A few drinks and a ready revolver is a combination that has sent many a man and woman too to an untimely death, and many more to the gallows, and prisons for life, or for a long time."

Well, in looking back over the years, and especially in getting the Patent Office Reports, as we do regularly, I am forced to believe that not only could we get along with fewer *revolvers* but also with fewer *patents* and *patent rights.* The man who copied my extractor very soon stopped making honey-extractors, and for years nobody else went into the business—at least very much; for while I had no patents, my profits were so close there was not much temptation to try to "cut under" my prices. When foundation-rolls came out, there were half a dozen or more invented and as many patented; but although I never applied for any patent, I rested for security on making a machine at so low a price that nobody else would care to undertake it. In just a little while the trade gradually and peaceably settled down into our hands. We have had no trouble in litigation or in fighting rivals; and so with all or nearly all of our other improvements in bee-supplies; and over and over again, as the years have passed, have I seen money wasted in getting out patents, and perhaps more still wasted in fighting claims, when in a little time, had the owner of the invention waited, he would have seen something come up much better, or else found that the great busy world did not need his improvements, and that he would have been better off in dollars and cents, and still better off in having a good time in this world of ours had he followed that wonderful text, "Give, and it shall be given unto you;" and in a few years, or only a few months or weeks, he would have had reason to believe in the promise in the other part of the text, "Good measure, pressed down, shaken together, and running over."

A great part of the exhortation of our Lord and Master while here on earth was against selfishness. Over and over again he begged and entreated and *implored* humanity to forget self and to find happiness and enjoyment in laboring for the good of others. What a tremendous rebuke his pure and unselfish life is to the grafters of the present day! Just think of it, friends. We hunt the world over to find honest men—men who can be trusted with our public funds and our public business. Some good man, or one who is supposed to be so, is appointed as inspector of the fertilizers manufactured for the use of farmers. A great good has been accomplished along this line; but every little while some greedy manufacturer goes to this inspector and tries to buy him off; and they can afford to give him large sums of money if he will favor their particular brand, or persuade him to "look the other way"

*When I was tempted to feel hurt at the position friend Excell takes, it looked to me something like this: The hymn supposes an ambassador has been sent from the King of kings—

"An ambassador to be
Of realms beyond the sea;"

and this ambassador has a message from the King; in fact, the chorus reads:

"This is the message that I bring—
A message angels fane would sing."

Well, this "message" the "ambassador" brings, I should have given you all had not brother Excell objected.

while they are fleecing the farmers. When such a man is exposed he is put out of office, and perhaps sent to the penitentiary—that is, providing he and the manufacturers back of him have not enough ill-gotten gains to get him off scot free. Now, these men who succeed in tricking the government and the people are not happy. The money they have stolen does not do them any good. When they are exposed, as you will notice by the papers, they often commit suicide; and *I* maintain that such a course is only "jumping out of the frying-pan into the fire." It may not be a *literal* fire, but I am persuaded it is something even *worse* than fire. Now, Jesus came from his home in heaven down to earth to bring us glad tidings—peace and happiness and enjoyment that God in his great mercy has provided for all of us; and he tells us to be liberal and to lend, hoping for nothing again. He tells to lay up treasure in heaven where it will not get away from us—to lay it where we can find it when we get to heaven. Naked and penniless we came into this world, and naked and penniless we shall go out of it. Oh! why do not men and women recognize that all this wealth and property and money that they are raking and scraping together may have to be given up in just a few hours?

I remember a friend who could not be happy; in fact, he could scarcely eat or sleep because he was likely to lose something like $500 that *he* thought he ought to have, and some of his relatives did *not* think so; but after a lot of jangling and hard feeling he got the money. Did he buy something with it to make him happy? No, he just put it out at interest, and in a little while he died suddenly without ever having had any good at all from the $500, and a great lot of money *besides*, that he had been spending his life's energies in piling up where it would bring in more.* Do you know of such people? Now, my dear friends, let us come a little closer home. Are you sure *you* are not one of that sort? If so, suppose you get down your Testament and read that sixth chapter of Luke that I have quoted from, and see how many other passages there are (that contain the precious words of God's only Son) that read something like our text—"Give, and it shall be given unto you, good measure, pressed down, and shaken together."

# Poultry Department

### HOW TO MAKE A HEN'S NEST.

Some of you may laugh at my title; in fact, I have heard there has been *considerable* laughing at my poultry talk, and *perhaps* at my poultry knowledge; and some people may wonder what there can be new about making hens' nests. Well, now, friends, there are a good many who do not know how to make a hen's nest, and I begin to think *I* belong in that crowd. In the last issue I spoke about sitting hens breaking their eggs; but it did not occur to me that one great reason for sitting hens breaking their eggs is because they are not provided with proper nests. The eggs broken by sitting hens are costing this nation alone annually thousands of dollars; and if you will permit me to go so far as to "count chickens before they are hatched" (just this once, you know), I do not know but the loss will run up into the millions. I have been advocating giving the hens fifteen or twenty eggs; but a cousin of mine had a White Leghorn hen that stole her nest up in the hay-mow, and hatched *twenty-one* chickens all by herself. The chickens kept rattling down from the hay-mow until they thought there was no end to them. Well, now, this little hen successfully brought up the twenty-one chicks, and they were sold in the market at a good price. If a little White Leghorn hen can hatch twenty-one chickens, how many could a Light Brahma or some of the other big breeds hatch? You may suggest that these big breeds are the ones that break the eggs; but if I should be able to convince you that it is the fault of the *nest*, instead of the awkward and contrary hen, you would have to admit there is a great need—in fact, I might say, a "long-felt want" of a *better* hen's nest. Biddy breaks an egg, and in rolling them around, as she should do, about every egg in the nest gets more or less daubed, and this daubing cuts off the pure air from the baby chick. We are making a great ado about pure air nowadays, you know. Well, chickens even before they are hatched need pure air as much as they do after they are hatched. If you love the chickens, and even a contrary sitting hen, and keep due watch, you can wash off the eggs in hot water; and if it has not been on too long the chicks will hatch out all right. This breaking of the egg not only soils the other eggs and the mother hen, but it gets a whole lot of fowls into the habit of eating their eggs; and if they once get into that habit you may finally be obliged, in desperation, to get a sharp hatchet for a remedy. Somebody says that broken eggs and filthy nests harbor vermin. I have good reason to believe that many a severe attack of hen fever has resulted in a disgust and dislike for the whole chicken business just because of a little carelessness in the start in letting a hen break her eggs. Well, what is the remedy? It has been suggested to me by a good friend whose letter I append at the end of this talk. She says "plenty of litter." But that is not all.

I have been watching sitting hens quite a little lately, and have finally succeeded in getting some pretty fair hatches. I confess I do not *know* how to make the very best kind of nest; but when I explain to our readers my conclusions they will, perhaps, tell me of something better than mine. First you want the right kind of box to hold the material. In the summer time I suppose a box without a bottom would be better; but as we often want to carry these nests around, hen and all, to some other place, I suggest that a bottom made of inch poultry-netting would be the right thing. This would let the fine litter sift through. Now, I would have the box about 15 inches wide and 30 long. Many of you will say this is too large, beyond all reason. Just wait a bit. If you have this poultry-netting for a bottom, chaff will not do. You want some soft straw—at least

*When I heard of this friend's sudden death I could not help thinking of Luke 12:20, where God says, "This night shall thy soul be required of thee. Then whose shall these things be which thou hast provided?"

I do not know of any thing better than that. The loose straw that has been trampled up so it is soft and loose will do very well. Perhaps clean oat straw that has been used for bedding would be about the thing. The hen will fix it herself better than you can do it for her. The nest ought to be shaped about like a wooden bowl—not so deep in the center that the eggs will pile up on top of each other, and not so flat that they will roll off into the corners of the box. The corners of the box should be well filled with straw packed in hard. I do not know but the right kind of wooden block nailed in the corners would be a good thing so as to make the interior of the box to a great extent bowl-shaped, say about like a common wash-basin.

Give the hen enough straw so she can toss it over her back and tuck it up nicely around her. Now, if your straw is soft enough, and if there is enough of it between the eggs and the sides and bottom, she can not very well break an egg. The eggs will sink down into the soft straw out of her way before they break; and in order to have plenty of room for material I would have the box about 8 inches deep inside.

We all know that hens like seclusion; and I have studied somewhat as to how to cover this nest so as to give about the kind of seculsion a hen wishes. Another box just like the one I have described, but only half as long, placed upside down over the nest, seems to be about the right thing. The nest should then be in the back end of the lower box; then the hen, to get in, steps down in the open end and walks over to the end that is covered. If she is a large hen perhaps you had better cut out the end of the upper box, say in the form of a half-circle, in order to let her get over the eggs with less trouble. And, by the way, this upper box must be fastened in some way to keep it in place. If it is hinged with leather or metal hinges on the back end of the lower box this will make a very nice arrangement. Any style of nest with a cover over it should permit of the easy removal of said cover. If an egg is broken you want full access to all the eggs, litter, and every thing else in order to clean them off. With the nest I have described you can set your basin of hot water in the end of the box opposite the nest; then your eggs can be quickly cleansed and put back on clean straw. If the water is up to 100 or 103 it will not chill the eggs at all, and the heat will dry them off when placed on clean dry straw by the time you are through. Now, if Biddy has got her feathers soiled, *she* ought to be washed off too.

May be you will say if we have got to have all this fuss with sitting hens we had better get an incubator; and I confess an incubator is much nicer to work with than a sitting hen—especially one of the pugnacious kind; but if your nest is made right, as I have tried to direct, I do not think you will very often have to wash off the eggs.

Just a few days ago I found a sitting hen in a box without a particle of straw. She had broken all of her eggs but six at different times, and not one of the six hatched a chicken. All this worry and bother, with nothing to pay for it, just for the want of a handful of the right kind of straw!

I would not have this nest in the yard with other hens if I could help it. No other hen should be allowed by any possibility to get on when she is off. Place the box and all in a little yard by herself where she has feed, water, and gravel. This is much better than letting her be annoyed by other hens. But I do not like that as well as letting her have her liberty to go where she pleases and to stay off the nest as long as she chooses. I have several times had hens hatch and bring out eighteen chickens; and they always had a convenient nest, and had things largely their own way.

Do not let any one persuade you that there is a patent on making a little yard for each sitting hen, or on having an arrangement so the door shuts while the hen is on. All such devices are pictured and described in poultry-books printed years and years ago. Trap nests are a good thing on some accounts with sitting hens; but I do not like any of them as well as the simple box I have described. The little house like the one pictured on page 638 of last GLEANINGS is a very nice place indeed for a sitting hen. You can put the sitting hen upstairs, where it is an easy matter to handle and look after her. Where you have a lot of chickens in a fireless brooder downstairs, the doors and poultry-netting make it a very easy matter to give the sitting hens all the conditions that may be required when we have all kinds of weather unexpectedly. Now read the following letter from a good woman who not only succeeds with *poultry* but in managing a whole farm after the death of her husband:

*Mr. A. I. Root.*—My sister, who is interested in bees, subscribes for GLEANINGS and she has read to me your articles about the chickens, which have given us many a good laugh, and I believe there is nothing better for people who are hard at work than laughter; so, please give us more, for you are doing missionary work. You asked for the names of women who make a specialty of selling day-old chicks. Now, I do not make a specialty of that branch, but this season have advertised chicks hatched with hens, the mother to go along if necessary to care for them. My sister and I are city women who came to this farm four years ago, when my husband died, and engaged in the difficult but always interesting task of building up a run-down farm — a beautiful old place of 42 acres situated ten miles from Buffalo. My expenses are heavy, as I hire two men by the year, and a girl for the housework. We all work all the time, and my brains are "worn thin" with hard thinking over the best way to manage affairs, and the various problems which are continually arising. Many of the difficulties of the first years have been overcome; and a growing income, together with an increasing number of satisfied customers for our produce, gives us confidence to keep on, although expenses will not be materially lessened until the farm is made to produce better crops. The soil is good, but has been robbed for many years. I have an acre of fine alfalfa, and mean to have more. If I keep on with a dairy it is a necessity.

The chickens have proved a profitable branch, even with buying nearly all the feed. I winter about 300 hens, get my chickens out in March and April, usually hatching about 1000, and thus have broilers when prices are high, and pullets for winter laying. I also sell eggs for hatching, and have been successful in the show-room. I have one incubator, a 300-egg model, and I am frank to confess that the hatches are far from satisfactory, as 60 per cent is the best one. The very early hatches bring out only about 25 or 30 per cent. This year, with 243 February eggs I got 55 chickens, while hens from the same stock hatched nearly 75 per cent out of 60 eggs; and I know that incubators are a necessity, but I regret the necessity. I acknowledge all the shortcomings of the hens, and it is exasperating to have them break eggs and step on the baby chicks; but after all, one is working more in harmony with natural laws, wherein there is strength.

This year I have 30 hens sitting in the house cellar where there was a furnace fire early in the season. This took the chill from the air. The nests are roomy, and filled with oat chaff and a little straw. One can not be too careful to give plenty of litter, as the hens scratch it away in the center and leave the eggs on the bare boards, which makes her break them. Every morning the hens are lifted from the nests, fed, exercised, and replaced. They are each marked with strings on their legs. It takes more time than an incubator, out it pays. Of course if one were hatching chicks by the ten thousand I suppose this method would be impossible. I never give hens over 13 eggs.

I could talk chicken all day, for I dearly love to work among them. The only part of the business that I do not like is having them killed. It does not seem right to kill the pretty gentle creatures, and it always makes me uncomfortable. I should like to know the actual percentage of eggs hatched in incubators at the Bloom establishment very early in the season, and whether their incubators are heated with hot water or air. Unfortunately, in most of the advertisements for incubators, exceptional hatches are made the basis for their claims, and naturally the numerous failures are unmentioned; and it is a satisfaction to have, if possible, authentic reports direct from such a business as you describe. I think there should always be a cover over their heads, which gives them the sense of seclusion they love. In all classes of live stock, over-stimulation in any direction brings a corresponding reaction, and often results in disaster. My cows are out every day in winter. I have healthy lively calves to sell for breeding, at good prices; and if, instead of the interminable discussions in regard to tuberculosis, the farm journals would all preach "fresh air, fresh air, fresh air," and exercise for all domestic animals, there would certainly be less disease, and city people could drink a glass of milk without a shudder. Probably after a while they will be afraid to eat fresh eggs, but so far there is no trouble on that score. This free open-air life has been the salvation of my physical health, and my sister Louise wishes you could have some of the beautiful spring water near here, which has been a powerful factor in my recovery. Mrs. Stephen Walker.

Williamsville, N. Y., May 7.

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### SPROUTED OATS; MORE ABOUT IT.

We clip the following from *Commercial Poultry* for May:

Hens will lay as well, and perhaps better, when kept in confinement than when on free range, if all their requirements are met; but if they are restricted to one or two kinds of grain, with no meat, grit, dust bath, shells, or exercise, and poor water, their production will be small. Green food must be supplied them, and this can be grown, as mentioned above, or it can be served in the form of sprouted grains, which are highly esteemed as an egg-producing food.

More than twenty years ago the value of sprouted grain was recognized by a few, and the process of preparing it published in the agricultural and poultry papers; but owing to the work involved it never became popular. Some years ago the *Reliable Poultry Journal* published an account of the method employed in Ireland — how they sprouted oats in boxes for the growing stock. This method was hooted at by some of our leading poultry-keepers who are now feeding sprouted grain to hens in confinement, and some even assert that it can be made the principal feed. That it does solve the question of green food, and makes it possible to keep poultry in more limited quarters than ever before, there can be no doubt.

Some place great stress on the cheapness of this feed, as a bushel of grain, especially oats, when sprouted, will increase in bulk and make four bushels; thus a bushel of oats costing sixty cents will make four bushels of feed, the cost being but fifteen cents per bushel. It is not, however, a cheap feed: it requires considerable labor to prepare. The increase is not as great as where the grain is sown in the ground, neither is there as much space required; but the labor to sprout a single bushel of oats is as great as to sow and harvest the same.

Grain can be sprouted in almost any place where it will not freeze. The warmer the place the better. In winter a warm cellar or workroom can be used; and in summer, if no better place affords, it can be done out of doors. It is best to have racks for this purpose. A frame of 1x3-inch stuff, set edgewise, 4x4 feet, with a partition in the center, is first made. To this frame securely nail lath, placing them from ⅛ to ¼ inch apart. This makes a box 4x4 feet, three inches deep, with a slatted bottom and a partition in the middle. The center partition is only for the purpose of strengthening the lath. The lath should be soaked in water over night so they will not split when nailing. The number of these racks required will, of course, depend on the number of fowls to be fed.

Place the grain to be sprouted in a tub and cover with water (warm water is best) and allow it to soak for twenty-four hours. Pour off the water and let them drain for half a day, then cover the racks with old bran-sacking, single thickness, and spread the grain upon them to the depth of about two inches. If space is limited, the racks can be piled one upon another; and if out of doors a cover should be made for them that will turn rain. Night and morning the racks are taken down and the grain sprinkled with hot water, the hotter the better, using a hand watering-pot or spray-pump. The racks can then be replaced. It does not matter if the water in the upper racks drains down into those beneath, as it will all run off in time. In from ten days to two weeks, depending on the temperature, they will be ready to feed. When in proper condition for feeding, the sod will be three or four inches thick, and the growth of green food on top of this, four to six inches high. When feeding, give a block about a foot square to fifty hens. Each rack holds about a bushel and a half of grain before sprouting, and will make sixteen feeds for fifty hens. It will answer the purpose of one grain feed and green food. With a block of this feed in the morning, corn and wheat at night, and a mash meal, grit, shells, and beef scrap in hoppers where the hens can supply any deficiency, a good, simple, and inexpensive ration is served.

I do not quite agree in regard to the expense of these sprouted oats. Where facilities are at hand, say on a farm, and land is cheap, it is, no doubt, a better way to sow oats every few days in the open ground, and let the chickens dig them out; but sprouting them in crates can be done evenings or during bad weather; and it can all be done in the cellar or in any out-building during warm weather. Where hens must be kept in confinement, sprouted grains are, without question, *the thing* to keep up a properly "balanced ration."

After the above was dictated I found the following in the *Rural New-Yorker* for May 23:

#### SPROUTED OATS FOR CHICKS.

A recent issue of the *Rural New-Yorker* gave Mr. Cosgrove's method of supplying hens with green food in winter. We get an ample supply at a minimum cost from sprouted oats. A furnace in the cellar or other warm place is necessary for the operation in winter; we expect to continue it this summer out of doors. The oats are placed in a water-tight vessel and covered with warm water, and allowed to stand 24 hours, when they are emptied in a box that will allow the water to drain off freely.. Oats are left in this box, and wetted twice a day with warm water until the oats have sprouts a quarter of an inch long, when they are spread in boxes about one inch deep. The sprinkling is continued until the oats are as large as you desire. We usually use them when four or five inches high. The hen will eat the roots as well as the tops. With a temperature of 60 degrees, ten days will bring this result; so after the first start this green feed can be provided for each day. Chicks will eat the oats when a week old, and leave all other feeds for them. As the fowls all prefer the oats to green clippings of fresh-cut lawn grass, I shall continue the feeding of sprouted oats all summer. Since using this method of getting green food I learn that this information is being sold as a secret for $5. As we were using this method before we heard of our friend with the $5 secret, we feel free to offer it to your readers, having obtained the idea from the Chinese in San Francisco in 1870. The green color can be given to the oats by one day's exposure to the light. They grow as freely in the dark, and the boxes can be stacked over each other if short of room. I believe this to be the cheapest green food that can be given in the winter. Jesse B. Upson.

Illinois.

Some of the friends may think I am giving a large amount of space in a bee journal to this matter of sprouted grains; but after you have once made a test of it you will find it is well worth attention. It just occurs to me that the man alluded to, with his $5.00 secret, has done the world a considerable service after all, even if the thing was not entirely new when he brought it out, for he with his persistent advertising gave it a wide publicity that it might not have had otherwise.

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### THE FIRELESS BROODER A SUCCESS IN UTAH.

I am using the fireless brooder, and like it far better than the ones used with artificial heat.

H. A. Pinegar.

Wellington, Utah, May 12.

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### TWO INTERESTING BULLETINS.

The United States Department of Agriculture has just issued two bulletins which are of interest to many bee-keepers. One (323) is entitled "Clover Farming on the Sandy Jack-pine Lands of the North." The other (No. 325) is "Small Farms in the Corn Belt." We think both bulletins are free. Apply to the Superintendent of Documents, Washington, D. C. W. K. M.

H. C. Phelps

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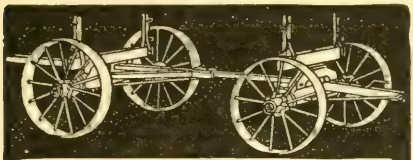

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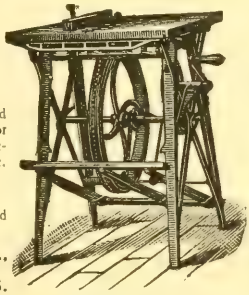

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FALL RIVER, MASS., April 10, 1908.

*F. Danzenbaker:*—Kindly send booklet about your smoker as per your ad. in GLEANINGS, current issue, and for which I thank you in anticipation. I had **ten hives, average good, last fall;** now I have **five that survived, and in Danzenbaker hives,** and as I write they are lugging in pollen in good shape. Yours, H. N. BRIGHTMAN, Fall River, Mass.

(The **defunct** bees were in **ten-frame Langstroth.**)

Pretty good! five Danz. lived, five L. died.

**F. DANZENBAKER, Patentee.**

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We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

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The list of prize-winners in our word contest is published in another column of this journal. See page 734.

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| Select untested queens | 1.25 | 6.75 | 12.75. | Select untested queens | 1.00 | 5.50 | 10.00. |

SAFE ARRIVAL AND ENTIRE SATISFACTION GUARANTEED.

*No bee disease* ever in this section. Descriptive circular and testimonials free.

**LESLIE MARTIN, :-: Birdcroft Apiaries, :-: LEBANON, TENNESSEE.**

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# CARNIOLANS, BANATS, ITALIANS.

**Carniolans.**—Our strain of Carniolans has been *line-bred* for 23 years, and they are very gentle, hardy, prolific, great honey-gatherers, and builders of white combs. One untested queen, $1.00; 6 for $5.00; 12 for $9.00.

**Banats.**—This new race of bees is gentle and hardy; the bees are good honey-gatherers, and builders of white combs, and are not inclined to swarm like other races of bees. One untested queen, $1.50; 6 for $7.50; 12 for $12.00.

**Italians** are from best imported stock; prices the same as Carniolans. NO DISEASE, AND SATISFACTION GUARANTEED.

**F. A. LOCKHART & COMPANY, :: LAKE GEORGE, N. Y.**

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**Read This!** I am now prepared to ship queens promptly. Goldens, 3-banders, yellow or dark Caucasians, Carniolans, and Banats. Assuredly you need look no further as you know there are no other very desirable races to be had. My bees have no disease, are excellent hustlers, and all tested queens are *guaranteed* to produce pure stock. My Goldens are almost as gentle as Caucasians, can be handled without smoke at any time, and contain no blood. They are the yellowest bees I have ever seen, perfectly hardy and wonderfully prolific; three-banders are of uniform color, gentle, and extra-good hustlers. Caucasians are the gentlest bees on earth. Banats are extraordinary honey-gatherers. Banats, $2.00; tested, $2.50. Caucasians, $1.50; tested, $2.00. Goldens, 3-banders, or Carniolans, $1.00; six, $5.00; tested, $1.50; six, $8.00; select tested, $2.00; six, $10.00. Golden virgins, 50 cts. Breeders, guar'td, $6. **C. Oscar Fluharty, Sandusky, W. Va.**

**Queens**

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## Taylor's Strain of Italians is the Best

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3.00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

J. W. TAYLOR & SON, Beeville, Bee Co., Texas.

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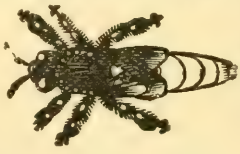
## ITALIAN QUEENS



Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J. L. FAJEN, . ALMA, MO.**

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## NOT CHEAP QUEENS, BUT QUEENS CHEAP

500 Best Strain Italian Queens Ready to Mail March 1st.

Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK ARK**

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## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, 75 cts.; tested, $1.00.

New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.

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## Golden Italian Queens, $1;

**Six for $4 50.**

Safe arrival and satisfaction guaranteed. 18 years' experience. Circular.

**J. B. CASE, . . . . Port Orange, Fla.**

# QUEENS

**GOLDEN AND CLOVER STOCK.**

Prices for May and June: Choice queens, $1.00 each, 6 for $5.00, or $9.00 a doz.; after July 1st, 75 cents each, 6 for $4.00, or $7.50 a doz. Tested queens in May and June, $1.50; after July 1st, $1.25. Two-comb nucleus, no queen, $2.00; three-comb nucleus, no queen, $2.50. Full colony on eight frames, no queen, $5.50. Five per cent discount on five, ten per cent on ten or more.
CATALOG FOR 1908 FREE. SEND FOR ONE.

**GEO. W. BARNES, box 340, NORWALK, OHIO**

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**ITALIAN**

# QUEENS

Having purchased the apiaries and queen-rearing business of Mr. A. E. Titoff, at Ioamosa, Cal., I hereby politely tip my hat to the bee-keeping world and wish to say that I shall use every endeavor in my power to serve you faithfully and honestly.

Send for circular and price list.

Yours for the best queens and bees,

**E. M. GRAVES,**

**Ioamosa, San Bernardino Co., Cal.**

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## Westwood Red-clover Queens

Are the bees that got the honey in 1907.
Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

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**W. H. Laws** is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled. Testimonials enough to fill this book. If you are going to improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10.00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

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**ITALIAN QUEENS BY RETURN MAIL OR MONEY REFUNDED.**

Warranted, $1.00 each, six for $5.00; tested, $1.50 each. Circular free.

**D. J. BLOCHER, PEARL CITY, ILL.**

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**MILLER'S SUPERIOR ITALIAN QUEENS**

By RETURN MAIL; bred from best Red-clover working strains in U. S. No better hustlers; gentle, and winter excellent; untested, from my SUPERIOR breeder, 1, $1.00; 6, $5.00; 12, $9.00. After July 1st, 1, 75c; 6, 4.00; 12, $7.50. Special prices on lots of 50 or more. Satisfaction and safe arrival guaranteed. Circular free.

**ISAAC F. MILLER, :: Reynoldsville, Pa.**

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# Queens Queens

of the

## FINEST POSSIBLE BREEDING

BRED BY

**F. J. WARDELL,**

**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen | $1.25 |
| Select untested queen | 1.50 |
| Tested queen | 2.50 |
| Select tested queen | 3.50 |
| Breeding queens | 6.00 |
| Select breeding queens | 9.00 |
| Extra select " 1 year old, | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

---

# 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders, $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

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# When You Need Queens and want Your Order Filled By Return Mail.

Three-band Italians bred for business. Tested, $1.00; untested, 75c; $8.00 per doz. Send for price list.

**J. W. K. SHAW & CO.,**

**Loreauville, Iberia Pa., La.**

CHOICE

# QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3 00.
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

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**GOLDEN-ALL-OVER and RED-CLOVER**

# ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested . . . . . | $1 00 | $5.00 | $9 00 |
| Select untested . . . . | 1 25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2 00 each.

Positively all orders filled in rotation.

**Wm A. Shuff, 4426 Osage Ave., Philadelphia. Pa**

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## DANIEL WURTH'S QUEENS.

**Golden Five-banded and Three-banded.**

Finest that can be had at any price; large and prolific. Have had 35 years' experience. Having moved from Pitkin, my address is Fayetteville, Ark., R. F. D. box 5, A.

**Untested, $ .75 each; 6, $4.35**
**Tested, 1.00 each; 6, 5.50**

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# THE DANZENBAKER SMOKER

PAT. OCT. 3,'05, JUNE 4,'07

**GOLD MEDALS**
St. Louis Exposition, 1904
Jamestown Exposition, 1907

**IS THE BEST, STRONGEST, COOLEST, CLEANEST, CHEAPEST, AND LARGEST SMOKER SOLD FOR A DOLLAR**

The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case,** and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed,** giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot:** no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt,** expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

**Price, $1.00; 3 for $2.50; by mail, add 25c. each**

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**

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# At St. Louis

On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

## Root's Bee-supplies

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**

DEPT. B.

1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

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# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**

**Dallas, : : . Texas**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**
**Dubois, .. Pennsylvania**

# TO LAND SELLERS

There is a continual demand for farms or ranches suitable for bee-keeping. If you have the right kind of place, and can satisfy us on that point, we are certain you can dispose of it to one of the 35,000 readers of GLEANINGS IN BEE CULTURE, by inserting a small advertisement in its pages.

There is no other medium by which you may reach the great constituency of bee-keepers. The cost of such an advertisement is small when compared with the results.

WRITE TO

THE ADVERTISING MGR. OF GLEANINGS IN BEE CULTURE
MEDINA, . OHIO

Big Stock of Root Co. and Marshfield Co.

**BEE-SUPPLIES AT FACTORY PRICES**

to close out on account of poor health. Parties sending me cash order for $15.00 or over before June 30, I will give 10% off. If not enough in stock to fill order, will order balance from factory and give 5% off on same.

**S. D. BUELL, . . UNION CITY, MICH.**


## Convention Notices.

The third field day of the Massachusetts Bee-keepers' Society will be held at Littleton, Mass., by invitation of the former President, Mr. F. H. Farmer, on Saturday, July 18. Come with your friends and have a pleasant day. Try to come on forenoon trains, which leave North Union Station at 8 and 11 o'clock. This is a basket-lunch picnic. Fare from Boston, 60 cents each way; ten-ride tickets, $6.30. It is impossible to give exact time of trains, as the new time-table does not go into effect until June 22. There are several forenoon trains, also an afternoon train at 2:10. We expect to meet members from the Worcester County Society there. Practical demonstrations will take place.

Belmont, Mass. X. A. REED, Pres.

The ninth annual meeting of the Texas Bee-keepers' Association will take place at the Farmers' Congress at College Station, Texas, on the grounds of the A. and M. College, July 8, 9, 10. There will be many topics of special interest to bee-keepers this year — serious questions in which all who can should take part. Several new features will be introduced in the program also, the chief of which is that of practical demonstrations instead of the heretofore many long papers that were read before the conventions. The question-box is always to be open, and all are asked to help make this the liveliest meeting of bee-keepers that Texas has ever had. Low rates of transportation, attractive grounds, good entertainment, and reasonable meal rates, help to make the attendance both pleasant and profitable. There will be exhibits of bee-keepers' products, for which special premiums will be awarded, so that all are requested to send what they can. All information may be obtained from Louis H. Scholl, New Braunfels, Texas. The following is a copy of the

PROGRAM.

Call to order; prayer; President's address; reception of new members; general business.

Location of apiary.—W. C. Conrads, New Braunfels; W. E. Crandal, Floresville.

Where to commence preparation of apiary for a honey-flow.—D. C. Milam, Uvalde; Willie Atchley, Beeville.

Foul brood in Texas, and what to do with it.—Prof. Louis H. Scholl, New Braunfels.

Prevention of swarming, and increase.—F. L. Aten, Round Rock.

Best methods of queen-rearing, and success with baby nuclei.—W. H. Laws, Beeville; John W. Pharr, Berclair.

Production of extracted honey.—T. P. Robertson, Bartlett; O. Sueltenfuss, San Antonio.

Marketing honey.—Udo Toepperwein, San Antonio.

Is it profitable to have apiaries in another State?—W. O. Victor, Hondo.

Comparative profit in the production and sale of extracted chunk comb and section honey.—A. H. Knolle, Hondo; Hugo Sattler, New Braunfels.

Bee-keepers' exhibits at fairs.—Dr. C. S. Phillips, Waco; J. M. Hagood, Enloe.

The value of hives made from Texas pine.—W. H. White, Blossom.

Report of the College apiary.—Prof. Ernest Scholl, College Station.

Report of committee on awarding premiums, etc.

Election of officers, and completion of all business that should come before the association.

The question-box will be taken up at each session.

F. L. ATEN, Committee on Program.

LOUIS H. SCHOLL, Sec'y and Treas.


CHEAP LUMBER

The Gordon Van Tine Company are now prepared to supply buyers with all kinds of ordinary lumber for building purposes at sawmill prices. Car lots may be purchased and delivered anywhere in the United States at one-third under dealers' prices for similar quality.

If you intend to build a house or barn, factory, church, store building, or any other structure, send the list of material to the Gordon Van Tine Co. for an estimate of cost.

You may also obtain an immense free catalog of 2000 items, simply by sending a written request for it. Address all correspondence to Gordon Van Tine Co., 763 Case St., Davenport, Ia.

## CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Help Wanted

WANTED.—Man of some experience to work with bees. State age, experience, and wages. Unless these particulars are given, no attention will be paid to reply.
THE ROCKY MOUNTAIN BEE CO., Berthoud, Colo.

## Poultry Offers

FOR SALE.—White Wyandottes, best breeding, 15 eggs, 75 cts.; 30, $1.25. J. F. MICHAEL, Winchester, Ind.

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Indian Runner duck eggs from choice stock, $1.00 per 12; $4.00 per 55; $6.50 per 100.
KENT JENNINGS, Mt. Gilead, O.

Fifteen S. C. B. Leghorn eggs given free with every order for six or more queens if mentioned with the order. See advertisement, page 481. Regular price for eggs, $1.00 per 15; $1.25 per 30; positively by return express.
J. E. HAND, Birmingham, Ohio.

## Food Products.

Send for circular and price list of Smucker's apple butter. Guaranteed to be absolutely pure. Agents wanted.
J. M. SMUCKER, Orrville, Ohio.

## For Sale

FOR SALE.—Bee-supplies at Root's catalog prices.
SUPERIOR HONEY CO., Ogden, Utah.

FOR SALE.—Cheap. Small gasoline-engine; also some supplies at wholesale prices. ARTHUR LAING, Woodstock, Ont., Can.

FOR SALE.—Mated thoroughbred homer pigeons at $1.00 per pair. FRANKLIN G. FOX, Erwinna, Pa.

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—300 lbs. Dadant's thin brood foundation, size 8x17 inches. C. J. BALDRIDGE, Kendaia, N. Y.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—Pure-bred Berkshire pigs of the best type and breeding: age 2 months; price $7.00 each.
A. M. BAKER, Hartmonsville, W. Va.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

Don't bother with cans. Kegs are cheaper and easier to fill and handle. 160-lb. pine kegs, with 2-in. hole and plug, 50 cts. each, f. o. b. factory. Orders given prompt attention. Send list of supplies needed. I can save you money.
N. L. STEVENS, Moravia, N. Y.

FOR SALE.—Ten shallow extracting-supers, new, 40 cts. each; $3.00 for the lot. H. J. AVERY, Katonah, N. Y.

FOR SALE.—Root sections, foundation, and all other bee supplies. Send order to SUPERIOR HONEY CO., Ogden, Utah.

FOR SALE.—Thoroughbred O. I. C. pigs, to be shipped in July and August; guaranteed to please or money refunded—and will guarantee safe arrival. FRANK E. SMITH,
R. F. D. 1, Queen City, Mo.

FOR SALE.—200 cases of 5-gallon cans. All are free from rust inside, and the majority have been used but once. Two cans in a case; 10 cases or more, 25 cts. per case.
J. E. CRANE & SON, Middlebury, Vermont.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

FOR SALE.—Best Wisconsin sections, 1000, $4.00; 2000, $7.75; 3000, $11.00, 5000, $17.50; No. 2, 50 cts. less; plain, 25 cts. less, 24-lb. 2-in. glass shipping-case, 14 cts. Catalog free.
H. S. DUBY, St. Anne, Ill.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cents each, postpaid. FRANK ALEXANDER,
Delanson, N. Y.

FOR SALE.—Complete shirt-factory outfit, consisting of 20 stitchers, one zigzag machine, one two-needle machine, and one button-hole machine, tabling, shafting, and pulleys for same. One 3½-horse-power gasoline engine; also cigar-box-factory machinery. S. Z. MUSSELMAN, New Holland, Pa.

## Complete House Plans

Complete blue-print plans, $10. For concrete cottage: Six rooms; bath; full basement. Est. cost, $1200. Circular free
CHAS. JAMISON, 444 Board of Trade, Indianapolis, Ind.

## Real Estate for Bee-keepers

FOR SALE.—Five acres of ground, eight-room house, barn, chicken-houses, carriage-shed, vinegar-cellar, honey house with all appliances, and 150 stands of bees.
C. R. ELLIS, Mancos, Colo.

FOR SALE.—New house, four large rooms and porch, well-made and finished; two town lots, 104x140, in a live incorporated town, healthful location. 35 colonies of pure Italian bees.
H. F. HITCH, box 2, Pineville, La.

## Wants and Exchanges

WANTED.—Refuse from wax-extractors and old combf or cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

WANTED.—To lease 100 or more colonies of bees for 1909, in location favorable to specialty, or will work for some good bee-keeper. Western States only. CLYDE CLEMENS,
Crawfordsville, Iowa.

## Bees and Queens

Untested queens (shipped from South), 60 cents each. Also bee-supplies. List free. A. RATTRAY, Almont, Mich.

FOR SALE.—Nuclei: 1, 2, and 3 frame, with fine queen, $1.50, $2.50, $3.50. R. R. FOSLER, Milford, Neb.

FOR SALE.—100 Heddon supers, wired combs, for 50 cents each. W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Italian and Carniolan queens, untested, 75 cts.; tested, $1.00. GEO. E. KRAMER, Valencia, Pa.

Golden mortgage-lifters, untested queens, $1.00; tested, $1.50 to $3.00. D. E. BEST, Best, Lehigh Co., Pa.

FOR SALE.—800 colonies of bees; for particulars, address DR. GEO. D. MITCHELL & CO., Ogden, Utah.

FOR SALE.—Italian queens, hustlers. Untested, 65c; tested, $1.00. MRS. J. W. BACON, Waterloo, N. Y.

FOR SALE.—Northern-bred red-clover queens. Untested, 75 cts.; tested, $1.00. E. S. WATSON, R. F. D. No. 2. Madison, Maine.

Red-clover Italian queens exclusively, one of the best honey-gathering strains in existence. Untested, 75 cts. each; 6 for $4.25; virgin, from pure Italian mothers, 30 cts. F. M. MAYBERRY, Lederach, Pa.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry. N. V. LONG, Biscoe, N. C.

CLOVER AND ITALIAN QUEENS. Untested, 75 cts.; tested, $1.00 each; Caucasians, 4-frame nuclei with fine queen, $4.00; full colonies of bees, 8-frame hive, $6.50. Send for my circular. G. ROUTZAHN, Biglerville, Pa.

FOR SALE.—25 colonies Italian bees, No. 1 condition, no disease; four-frame extractor, extractor bodies with knives, heater, and all other appliances for successful bee-keeping. Reason for selling, no place to keep them. GEO. L. HERRICK, 11938 Parnell Ave., West Pullman, Ill.

FOR SALE.—After May 15, Italian, Carniolan, Caucasian queens, untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Nuclei, after June 10, 1, 2, 3 frames, including queens, $2, $3, $4. Orders booked now. (Stamps not accepted.) EDWARD REDDOUT, Baldwinsville, N. Y.

## Honey and Wax for Sale

FOR SALE.—White comb honey, $3.25 per case; also fancy white or amber extracted honey in 60-lb. cans or barrels. HAROLD HORNOR, Jenkintown, Pa.

FOR SALE.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Choice extracted honey for table use — thick, well ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts. J. P. MOORE, queen-breeder, Morgan, Ky.

## Honey and Wax Wanted

WANTED.—White ripe extracted honey; will pay cash. GEORGE RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water Street, Chicago, Ill.

## Bee-keepers' Directory

Root's goods reach you from us quickest. SUPERIOR HONEY CO., Ogden, Utah.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden Italian queens, 75 cts. each. Satisfaction guaranteed. WALTER S. HANS, 1127 Blaine Ave., Indianapolis, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

Are you prepared for swarming. Order hives from SUPERIOR HONEY CO., Ogden, Utah.

SWARTHMORE Golden-all-over queens—the famous original stock. Queen-rearing outfits and books; 40-page catalog. E. L. PRATT, Swarthmore, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND, Birmingham, Erie Co., Ohio.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.— Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# SPECIAL NOTICES

## BY OUR BUSINESS MANAGER

We have had a number of shipments of queens direct from Italy, and in every case they have arrived in first-class shape. In fact, their condition is very remarkable, and we do not recollect ever receiving them so uniformly good. If you are on the outlook for young vigorous imported queens we have them.

### ONE-FRAME OBSERVATION HIVES.

We still have a few slightly shop-worn observation hives, one-frame, with super, which sell for $3.00, which we offer to close out at $2.40 each.

### FOUNDATION SPLINTS.

Some have been writing Dr. Miller for foundation-splints. He does not have them for sale. We are prepared to furnish them for 10 cts. per 100, 50 cts. per 1000 postpaid, or 40 cts. per 1000 with other goods.

### FIRE AT ST. PAUL BRANCH.

Just as we go to press we have a despatch advising of a fire damage to St. Paul stock. Particulars are not at hand. We are shipping them a car of stock, and they will doubtless soon be in shape to take care of orders as usual.

### HIVE NUMBERS.

We can supply hive numbers with figures 1⅝ inches high, printed on tough cardboard, then boiled in paraffine so as not to be injured by the weather. They may be fastened to the hive with tinned tacks. We have them in sets up to 400 numbers. Price $4.00 per set postpaid, or $3.50 with other goods; 100 postpaid, $1.15, or $1.00 not prepaid; 50 postpaid for 65 cts.; not prepaid, 60 cts.

### BEESWAX.

For good average beeswax shipped before the end of June we will pay 29 cts. per lb. cash, or 31 in trade delivered here. The season is so far advanced that we make this raise of 1 ct. per lb. for two weeks only, because we do not want to stock up at the close of the season at high prices. If you have any to furnish send it on at once and secure this temporary rise in price.

### ROOT'S WEED FOUNDATION.

During the month of May we shipped over 33,000 lbs. of comb foundation, which is about 9000 lbs. ahead of our best previous month in this or any former year. The aggregate of our shipments for April and May is also in excess of the same months in former years. This goes to show that we are pushing out goods at a rapid rate in our efforts to supply the excessive demand this season.

### PROMPT SHIPMENTS.

In spite of our best efforts a goodly number of our customers, for orders sent here as well as to some of our branch houses and agencies, have had to wait longer than seemed to them reasonable. Conditions are about normal again; and as we go to press we are much closer up on orders, and prepared to give prompt service. Hives are still in demand. At no time have we been short on sections. We have a good stock ready for immediate shipment, and are turning out new stock at the rate of over 2,000,000 per month. We are well supplied with most sizes of shipping-cases. If in need of goods promptly, send on your orders.

### SIMPLEX HONEY-JARS.

The factory people have advised us of a carload of these jars as already on the way to us, with more to follow in due course. By the time your order reaches us we shall have a supply in the warehouse, ready for instant shipment. They will be packed in reshipping-cases of two dozen each, and the price will be $1.10 per case; six cases, $6.30.

### NO. 25 HONEY-JARS.

During the past year we have had an unusual amount of trouble with breakage of this jar, even in the reshipping-cases packed with corrugated paper. The breakage occurred either in the porcelain cap or the top rim of the jar where the cap rests. We find we can get this same jar with lacquered tin cap without the center being cut out. This cap is lined with a waxed paper wad which seals tight on the top edge of the jar. This style of cap not only does away with nearly all breakage, but enables us to furnish the jar at a lower price. We are now ready to fill orders. They will be packed as usual, two dozen in reshipping partitioned cases. No. 25 jars, tin cap lined, 90 cts. per case; 6 cases, $5.10. We can still furnish from stock the usual style of No. 25 with porcelain caps at $1.10 per case; 6 cases, $6.30.

### SPECIAL DANZ. SUPERS.

Of the special Danz. supers offered from Floresville, Texas, we still have to dispose of 80 to 90 in which little can be counted on for sections and foundation starters; otherwise they are complete regular Danz. supers, 16¼x20 outside measure, fitted with Danz. section-holders, H. S. M. fences and springs, nailed and painted; worth from regular stock $1.00 each; will sell them at $5.00 for 10, or the lot at 40 cts. each.

There are also 400 shipping-cases for 20 Danz. sections, put up 50 in a crate, which we offer at $6.00 per crate or $10.00 per 100 for the lot. These goods, of course, are offered subject to previous sale, and should be taken quickly at these prices.

### JAPANESE BUCKWHEAT.

The season for sowing buckwheat is at hand. We have a choice lot of seed grown for us last season, which we offer, bags included, at 15 cts. per pound, postpaid; not prepaid, 5 cts. per lb.; 45 cts. per peck; 85 cts. per half-bushel; $1.50 per bushel; 2 bushels, $2.50; 10 bushels, $11.50.

### SECOND-HAND FOUNDATION-MILLS.

We have to offer the following second-hand foundation-mills in good condition. We shall be pleased to hear from any one interested. To such we can send a small sample of comb foundation representing the kind of work produced by the particular machine you inquire about.

No. 079.—6x2½-inch hex. cell thin-super mill, in very good condition. Price $12.00.

No. 078.—6x2½-inch hex. cell thin-super mill, in good condition. Price $12.00.

No. 086.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $12.00.

No. 075.—2x9 hex., very old style, on frame with wood base; in fair condition. Price $10.00.

No. 085.—2½x6 hex. thin-super mill, in good condition. Price $12.00.

No. 086.—2½x6 hex. extra-thin-super mill in extra-good condition. Price $15.00.

No. 096.—2½x10 hex. light-brood mill; almost new; in fine condition. Price $20.00.

No. 097.—2½x10 hex. light-brood mill; in fine condition. Price $18.00.

No. 077.—10x2-inch medium-brood round cell, old-style frame, in good condition. Price $14.00.

No. 092.—6x2½-inch hex. cell extra-thin-super mill, in fine condition. Price $15.00.

No. 2275.—6x2½-inch hex. cell extra-thin-super mill, in good condition. Price $13.00.

BEES AND QUEENS.

Everybody nowadays, with any pretentions to success, tries to keep pure-bred stock, whether it is horses, cattle, swine, poultry, or bees. With mongrels you are working in the dark. Pure-bred stock of any kind is a credit to all concerned—breeder, dealer, and purchaser. We have tried to keep the best stock possible; and that we have succeeded is best borne out by the testimonials we have received and are continually receiving from customers. Here is a sample testimonial (we have others).

Streator, Ill., June 5, 1908.

*A. I. Root Co:*—My hive and bees I have received. I received the hive Wednesday and bees Thursday. I have them in their new chaff hive. They cost me $22.25, but I would not take $50.00 for them; well pleased; without doubt the nicest bees I ever saw in my life. Yours truly,

HERSCHEL E. MOFFITT.

If you wish to breed bees for sale or show purposes you must have fine stock to begin with. A discriminating public will have no other. We are always ready to quote reasonable prices for fine stock in large lots. We do not breed the other kind. Now is the time to purchase bees.

PRICES OF NUCLEI.

| | Oct. to July. | July to Oct. |
|---|---|---|
| 1-fr. nucleus without queen | $3 00 | $2 00 |
| 2-fr. nucleus without queen | 4 50 | 3 00 |
| 3-fr. nucleus without queen | 5 50 | 3 50 |
| 5-fr. nucleus without queen | 6 50 | 4 50 |
| | Oct. to July. | July to Oct. |
| Col. in 8-fr. Dov'd hive, no queen | $10 00 | $7 50 |
| Col. in 10-fr. Danz. hive, no queen | 11 00 | 8 00 |
| Col. in 10-fr. Dov'd hive, no queen | 12 00 | 9 00 |

We can supply with the nuclei any of the queens mentioned in list. When one buys an extra-select queen, or any high-priced queen, he would do well to have her come in a nucleus. This will assure safe arrival.

# Special Notices by A. I. Root

"LYDIA E. PINKHAM" AND FAKE TESTIMONIALS.

We are rejoiced to learn by the *Mail Order Journal* for June that the Lydia E. Pinkham Co. has been fined $6000 for using the photograph of a young lady, together with a *forged testimonial* in favor of their medicine, without the permission or knowledge of the young lady whose photo was used. Now, if this will establish a precedent so the Duffy whisky people and all medicine companies can be prosecuted likewise, we can all "rejoice and be glad." Heretofore it has seemed that this sort of forgery could not be reached by any existing laws; but I think it is high time that these medicine-swindlers be taught better.

THE WRIGHT BROTHERS AND THEIR FLYING-MACHINE.

Since the report in our last issue, the elder of the Wright Brothers has gone to France. The following, clipped from the *Woman's National Daily*, gives a glimpse of what is going to be done:

PARIS, June 2.—One of the men associated with Mr. Wilbur Wright in the æroplane trials that are to take place in the north of France said to day that Wright was confident of meeting conditions laid down by Lazarre Weiler, who has offered $100,000 for the Wright æroplane if it will make two flights of 50 kilometers within a week, carrying two passengers and enough gasoline for a 200-kilometer flight, or ballast equivalent to this. "I have already equaled this distance," said Mr. Wright, "in the flights at Manteo, N. C. Fifty kilometers is 31 miles, and I shall be disappointed if I do not sail further than this in a single flight. Our machine has sailed with two passengers, though we have never carried a weight equal to that imposed by Weiler."

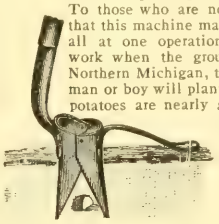
With what is now going on in other parts of the world with successful flying-machines, I think it is quite likely that *some of us*, at least, will see them going over our heads before another winter.

THE "STAINLESS-FLAG" PAMPHLET.

I find we have at present something like 200 copies left, and therefore we can not undertake to furnish in the future more than one copy to each applicant. If you did not get one last year, and would be glad to see a copy of this great temperance tract, let us know and we will mail you one as long as they last. If you should be in need of more than a single copy, apply to your own State Superintendent of the Anti-saloon League. I think the 100,000 copies or more, distributed, of this temperance pamphlet have had much to do with the great prohibition wave that is now circling not only all over our land but all over the world.

THE ACME HAND POTATO-PLANTER.

As we are now out of the seed-potato business we offer about four dozen Acme potato-planters at a big bargain to close out.



To those who are not familiar with them we will say that this machine makes the holes, and drops and covers all at one operation. Once over the field does the work when the ground is fitted. In the soft soil of Northern Michigan, the great potato region, one expert man or boy will plant two acres in a day. Up there the potatoes are nearly all planted with this little implement. A year ago we offered them at 55 cents each, or three or more at 50 cents each, or one dozen for $5.25. While they last we will make you a price of 45 cents each, or three planters for $1.20, or a crate of 12 for $4.00. If you want them at the above price you had better get your order in before they are gone.

"A LITTLE LAND AND A LIVING."

The above is the title of a new book, just out, by the author of "Three Acres and Liberty." It is along the same line with what I have to say in our book on tomato culture, about supporting a family on a quarter of an acre. The book is specially valuable because it gathers up a great number of illustrations taken from the various agricultural periodicals in regard to what can be accomplished on a little piece of land—or perhaps I should say in regard to what *has been* accomplished. As the dates and references are all given, it is an easy matter to verify these statements, telling us what is possible to be done on a little piece of ground by one who is *really in love* with old Mother Earth. The only thing that troubles me about recommending books of this kind is the fact that many people forget that these good results are accomplished only by indefatigable labor, early and late. The price of the book is $1.00, and can be had by addressing the Arcadia Press, 150 Nassau St., New York, or from this office.

THE ROMANCE OF THE REAPER.

On page 585 I said it was impossible for me to read or even look through very many of the books and papers which the kind friends are sending me day by day; and I have been thinking for some time that I should probably not read many more *books* clear through. But I had one of my happy surprises when I got hold of a little book of 184 pages, entitled "The Romance of the Reaper." The book was first issued serially in *Everybody's Magazine*, with which many of you are familiar. Its beautiful print, making it easy to read, and its magnificent illustrations, caused me to read it almost from beginning to end without any tired or "sluggish feeling" in the least. One reason why it took such a mighty hold on me was that, for the first time in my life, I fully comprehended how the evolution of the reaper has helped to feed the starving multitudes all over the face of the globe. It also appealed to me particularly because I can well remember seeing in my boyhood days the mower introduced, later the reaper, then the binder that used wire, and finally the *twine* binder. The history of these great inventors, who worked day and night unflaggingly for a term of years, reminded me most vividly of the evolution (in our own industry) of the honey-extractor and the present hives and appliances that we have for producing comb honey. The book does not give *any one man* the credit by any means; but we have most interesting sketches of a score of great inventors who helped to make the reaper what it is now, and also who helped to make the *farmers* of our land what *they* are now. The book is beautifully written by Herbert N. Casson, whom I should pronounce one of the most talented writers of the present day. There are passages in certain parts of the book that would do credit to a Fourth-of-July orator. The price is $1.00, and I do not know how you can invest that amount to better advantage. Read it yourself, and then lend it all over the neighborhood. In some places it seems to defend the trust business; but if great trusts have been the means of feeding the hungry in the uttermost parts of the earth we can thank God for this one thing at least. If some of the millionaires who have more money than they know what to do with should all at once take a notion to use some of their means to feed the starving *women and children* in the different corners of the earth, I should certainly feel that the millennium is coming. So far as I can learn from the book, I believe our great inventors of reapers and mowers, most of them if not all, reaped a rich pecuniary reward.

The book is published by Doubleday, Page & Co., of New York, to whom letters of inquiry should be sent.

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THAT SELLS AND EXCELS
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# TO OUR PATRONS

For the convenience of our patrons we some time ago established a series of agencies in the principal business centers of this country, chiefly with a view to the much more expeditious shipment of goods. Every one knows, who has much to do with railroads, that they are provokingly slow just at the very time the buyer is waiting for the goods. This is particularly true of bee-keepers who do not know what their requirements will be until the season has almost arrived. Then they order the goods in a great hurry, expecting to get them in a few days, whereas the railroad people consume weeks in getting the goods to the destination. To overcome this we have covered the country with agencies. Some of these are our own, and some are not. It is immaterial to the consumer which is which, for they all sell (or nearly all) at our Medina prices. They can do this because the charges on a carload of bee-supplies are small compared with the individual charges on small lots. There are other advantages. Many can go to some nearby city and purchase the goods *after* having inspected them. Others drop in to have the uses of the various apiarian articles explained.

### OUR NEW YORK BRANCH.

This branch was established chiefly to take care of our foreign trade, which had grown to large dimensions, and which we found impossible to cope with from Medina alone. We have made no effort to draw local trade to this office because we have branches at Syracuse and Philadelphia, but in spite of ourselves a trade has grown up tributary to the city of New York. Persons doing business in the metropolis, but living in the suburbs, found it very convenient to call at our office and order their supplies as needed. Others living at a considerable distance from the city, but who occasionally visit it on business, took the opportunity to call and see us, and in consequence gave us their business. The office is located in the *Evening Post* building, opposite St. Paul's Church, and just around the corner from the old Astor House. It is near the postoffice.

We have no stock of goods there, the warehouse being located in Hoboken for convenience to the shipping. The address is Evening Post Bldg., Vesey St., Telephone 543 Cortlandt.

### OUR PHILADELPHIA BRANCH.

This is in charge of William A. Selser, a veteran in the bee business, and a prominent authority on the subject of honey. Having been so long in the business, all the time in the vicinity of the Quaker City, Mr. Selser is peculiarly able to give assistance and advice to beginners and others not so well informed perhaps. Usually we carry quite a stock of goods there, wherewith we supply Eastern Pennsylvania, New Jersey, Maryland, and Delaware, and even points much further away. Twice a week during the season the manager gives lessons to persons who wish to see how various appliances are used. For this purpose the spectators need not leave the building as we have an apiary on the roof. We also have other large apiaries near the city where are bred bees and queens. Here we have had "field days" when as many as 1000 bee-keepers assembled to see some of the leading experts do stunts with bees. This shows the strength of the bee-keeping interests in and round Philadelphia. If you can make use of this branch we shall be glad to have you do so, as our facilities are full and complete in all departments. Mr. Selser has a big fund of information to draw on, and is at your service. The address is The A. I. Root Co., 10 Vine St., Philadelphia.

### THE WASHINGTON BRANCH.

This branch was established to cope with the trade of Virginia, Western Maryland, and adjacent territory. Contrary to general opinion, the capital city of our nation is very favorably situated for business purposes. This is more particularly true of Virginia and Western Maryland, which can be served with great promptitude and despatch by the railways from Washington, also by way of the Potomac River steamers. Lately this branch has been greatly favored with orders, and we judge from this our friends have found out its value as a shipping-point. Our manager there is Mr. W. T. Kerrick, an experienced bee-keeper. This office is situated at 1100 Maryland Ave., S. W., and may be easily found by strangers on a visit.

### OUR CHICAGO OFFICE.

As the greatest railroad center of the world, it was long manifest to us before we actually decided on it that we ought to have a branch establishment in Chicago from which we could ship orders that are needed in a great hurry. In a number of other ways there are great advantages in having a Chicago warehouse, chief of which is the opportunity of being able to ship on the very railroad near which the bee-keeper lives. This insures better service, quicker transport, and lower rates. Then, again, many of our customers who perchance may visit the city find it convenient to call on us, and in this way we become more conversant with their wants and desires. We need not enlarge on the advantages of this office, as they will be obvious to most of our readers who live in the region tributary to Chicago. Our manager there is R. W. Boyden, who is always on hand to attend to the wants of our friends, and who is very glad to see callers who are interested in bee-keeping. The office address is, The A. I. Root Co., 144 E. Erie St., Chicago, Ill.

### THE A. I. ROOT CO. IN SYRACUSE.

Here we have in complete charge Mr. F. A. Salisbury, whose name was familiar to American bee-keepers 25 years ago, and has been ever since. He has many friends who enjoy sending him an order every year with clocklike regularity. Syracuse is right in the heart of a bee country, and last year when every one else was complaining of "hard times" Mr. Salisbury did quite his usual amount of business, possibly a little more. Much of this is due to his personal qualities as a business man with years of good reputation behind him. He is, in addition, situated in a fine business center so as to reach New England and New York. He also knows the importance of getting out orders in a hurry when the honey-flow is in sight. He has been there himself, and has a fellow-feeling for the belated customer who leaves off ordering to the last moment. The A. I. Root Co., Syracuse, N. Y., is sufficient.

The A. I. Root Co., Medina, O.

# SENT ON APPROVAL

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To show our confidence in the Laughlin Fountain Pen, you may try it a week, if you do not find it as represented, a better value than you can secure for **three times this special price** in any other make, if not entirely satisfactory in every respect, return it and we will send you $1.10 for it. The extra 10 cents is for your trouble in writing us. (Two customers in 3000 have asked for return of money.)

**Cut in center is our famous and popular Red Gem—the Ink Pencil, a complete leak-proof triumph—may be carried in any position in any pocket or shopping-bag; writes at any angle at first touch. Platinum (spring) feed, Iridium point, polished vulcanized rubber case, terra-cotta finish. Retails everywhere for $2.50.**

**AGENTS WANTED.**—Write for our money-making proposition and terms. **Write now,** "lest you forget." Address

## LAUGHLIN MFG. CO.

**316 Majestic Bldg. :: :: Detroit, Mich.**

# Gleanings in Bee Culture

A Model Ohio Apiary in Mid-summer.

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI July 1, 1908 No. 13

# ABC AND XYZ OF BEE CULTURE

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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z. HUTCHINSON, editor and proprietor of the *Bee-Keepers' Review*, and author of Advanced Bee Culture.

No bee-keeper's library can be at all complete without a copy of this magnificent apiarian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal.*

This work of 536 pages is, as its name implies, a complete cyclopædia of everything pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of GLEANINGS, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and out-apiaries; Dr. E F. Phillips on the eye, parthenogenesis, and scent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say any thing about a book of which already 100,000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee-keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner; and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal.* Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide" and "The Honey-bee."

# C. H. W. WEBER

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Yours truly, CHAS. T. DOWNING,
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**Office and Salesroom, 2146-2148 Central Ave.**
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**CINCINNATI, .. .. .. OHIO**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

Fancy.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 White.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 Light Amber.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

Cincinnati.—The market on comb honey is very slow; some new goods have arrived, but there is no demand, and it is selling slow at 14. There is some new white-clover extracted honey coming in, selling at 7½. Amber in barrels is selling at 6 and 6¼. Beeswax is selling at $33.00 per 100 lbs.

June 22. C. H. W. Weber, Cincinnati, O.

San Francisco.—It appears now as though there would be a very short crop in the West this season. The season for honey-making was much delayed by the cool weather, and so far very little of the new crop has arrived. The feeling of the market on these reports is very firm, and the prices are expected to advance rather than drop. Water-white comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, extracted, 7 to 7½; dark amber and candied, 5¼ to 5¾.

June 20. *Pacific Rural Press.*

New York.—Comb honey: The demand is next to nothing, and has been so for the past four months. A few crates of fancy No. 1 white are called for once in a while, while off grades and dark are entirely neglected. As there is practically no demand, quotations are simply nominal. We have more in stock than we can dispose of. The honey will have to be carried over until next fall. We can not encourage shipments of comb honey, as we do not think we shall be in position to render account of sales within reasonable time. Extracted honey: Demand better and market slightly improving. New crop is arriving quite freely from the South, where the yield seems to have been pretty large. We quote California white sage at 8½ to 9; light amber, 7½ to 8; amber, 6 to 6½; new crop Southern from 58 to 75 per gallon, according to quality. West India honey is arriving in fairly good-size lots and finds ready sale at from 60 to 62 per gallon, duty paid. Beeswax in good demand, and firm at 30 to 31.

June 4. Hildreth & Segelken, 265-7 Greenwich St., New York.

Cincinnati.—The demand for comb honey has fallen off considerably in the past twelve months. Last year the comb-honey market was bare in February, but this season finds an abundance of that article everywhere at this date, which is late for last season's crop. We can not tell at present what effect this state of affairs will have upon the market when the new honey comes in. The market on extracted honey shows some life, but is not moving rapidly. Quote amber in barrels at 6 to 6½, according to the quality; fancy extracted honey, 7½ to 9. For choice yellow beeswax, free from dirt, we are now paying 28 cts cash and 30 in trade, delivered here.

June 15. The Fred W. Muth Co., Cincinnati, O.

Philadelphia.—The prospects at present are for one of the largest crops of honey we have seen in the East for the last ten years. The result is, prices are uneasy and have a strong downward tendency. Some few little lots of comb honey are being offered, but not enough to establish a price. We are looking for very low prices the coming season. Beeswax is firm at 28.

June 22. Wm. A. Selser, Philadelphia, Pa.

Indianapolis.—With the exceptions of a few lots of old comb honey the local market is practically bare of honey. Dealers are awaiting arrival of new crop, but as yet no prices are established. Beeswax brings 28 cents cash or 30 in exchange for merchandise. Walter S. Pouder,

June 16. Indianapolis, Ind.

Boston.—Fancy white comb honey, 17; No. 1 white comb, 16; California white sage, extracted, 9; California light amber, 8; Southern honey in barrels, slow sale, 5 to 6.

June 12. Blake-Lee Co., Boston, Mass.

Denver.—Our market is now entirely cleaned up of comb honey, and the first consignments of the new crop should find a ready sale at good figures. We quote extracted white, 8 to 9; light amber and strained, 6¾ to 7½. We pay 25 cents per pound for clean yellow wax delivered here.

The Colorado Honey-producers' Ass'n,

June 15. F. Rauchfuss, Mgr., Denver, Colo.

Liverpool.—The market for honey and beeswax is steady and quiet. We quote honey, Chilian, 4 to 6⅓ cents; Peruvian, 3½ to 5⅓; California, 7½ to 9; Jamaican, 4 to 5⅓; Haiti, 6⅓ to 6½. Beeswax is very firm — African, 30 to 32; American, 30 to 33; West Indian, 29 to 32; Chilian, 30 to 36; Jamaican, 34 to 35. Taylor & Co.,

June 16. 7 Tithebarn St., Liverpool.

St. Louis.—The honey market is very quiet. There is absolutely no demand for comb honey. Extracted honey is also neglected, consequently the prices have declined. Quote as follows: Fancy white comb honey, 15 to 16; No. 1, white and amber, 12 to 14; broken and defective, less. Extracted white, in cans, nominal at 8 to 8½; amber, 7 to 7½; in barrels, 5½ to 6; granulated extracted honey sells at less. Beeswax, 29 for prime; impure and inferior, less. R. Hartmann Produce Co.,

June 11. St. Louis, Mo.

Zanesville.—So light is the demand for honey at the present time that it is almost useless to quote the market. Stocks are pretty well reduced, and there is a tendency to cut prices, especially on the part of one-horse dealers. While the remnant of last year's crop is moving very slowly, some revival is anticipated with the arrival of the new crop. For good quality beeswax I offer 30 cts. in exchange for bee-supplies. Wax wholesales at 40 to 45. Edmund W. Peirce,

June 18. Zanesville, O.

# Our Wants for Honey are Unlimited.

It will pay you to mail us a sample and correspond with us, as we are always buying all grades of amber and fancy extracted honey, as well as **Fancy Comb Honey** in no-drip shipping-cases. .. .. .. ..

NO MATTER HOW MUCH OR HOW LITTLE YOU HAVE TO OFFER.

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## The Fred W. Muth Co.

**THE BUSY BEE-MEN**

**51 Walnut St. Cincinnati, Ohio**

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Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

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# HOW TO KEEP BEES

*by* Anna Botsford Comstock.

The novice in bee-keeping usually seeks for a simple book on bees, and in this he is wise. The modern text-books relating to bees are excellent in their way, but most of them are too technical for a mere beginner, however well they may be written. A simple book written in clear every-day language is much better, even if it does not treat of quite so many little details which interest only the professional bee-keeper. In this respect "How to Keep Bees" fills the bill. The gifted authoress, who is a charming writer as well as an artist-engraver and bee-keeper, made a start with bees three different times, hence she had the opportunity of finding out for herself the difficulties and trials that beset the beginner with bees. She had no desire to make money with bees, but did so, however, because they prospered under her care and skill. For this reason she writes as an amateur to amateurs, making no attempt to discuss the knotty problems which the expert bee-keeper is interested in. The book is written in a charming literary style, easily understood, almost entirely free from the technical language used by bee-keepers. It is arranged in chapters, and is so eminently readable withal that any one interested in the subject can sit down and devour it clear through, the same as he would a modern novel. Every thing the average beginner desires to know is discussed, including what to order if you have no bee-supplies or bees. The print is large, and some very beautiful engravings adorn its pages, for the authoress is one of the most skillful wood-engravers in America. We can not do better than recommend this work to every beginner in bee culture.

There are twenty chapters in the book as follows: 1. Why keep bees; 2. How to Begin Bee-keeping; 3. The Location and Arrangement of the Apiary; 4. The Inhabitants of the Hive; 5. The Industries of the Hive; 6. The Swarming of Bees; 7. How to Keep from Keeping too Many Bees; 8. The Hive and How to Handle It; 9. Details Concerning Honey; 10. Extracted Honey; 11. Points about Beeswax; 12. Feeding Bees; 13. How to Winter Bees; 14. Rearing and Introducing Queens; 15. Robbing in the Apiary; 16. The Enemies and Diseases of Bees; 17. The Anatomy of the Honey-bee; 18. Interrelation of Bees and Plants; 19. Bee-keepers and Bee-keeping; 20. Bee-hunting.

There is also a bibliography and index. From a beginner's standpoint it is a complete treatise on bees.

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Patent Counsel of The A. I. Root Co.

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Wood Co., O.

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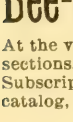

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### SOMETHING NEW AND VALUABLE.

Producers of fancy comb honey will be greatly interested in the advertisement of Mr. Sackett, which appears elsewhere in these columns, wherein he calls attention to his new wrapper for enclosing sections of comb honey, thereby affording protection from dust, etc. The wrapper is made of transparent paper so that the honey is sufficiently seen by the customer before purchasing it. Instead of detracting from the appearance of section honey the paper really adds to it. It is, furthermore, quite a protection from drip, because, if a section leaks, the leakage is confined to that one section. The cost of these wrappers is small — more especially so when we consider their manifest advantages. We know Mr. Sackett, who is the inventor, will be delighted to correspond with prospective users of these wrappers, and would be glad to furnish necessary samples to all those who are interested in the production of comb honey of a superior grade.

### THE AMERICAN BEE JOURNAL.

We take great pleasure in giving a few words of commendation of the "old reliable" *American Bee Journal*, whose home is 118 West Jackson St., Chicago, Ill. As the mother journal of American bee papers, it is only right and proper that we should say a word in praise of our old friend. Recently it has taken on a new lease of life by reducing its subscription price to 50 cts a year, and becoming a monthly magazine instead of a weekly newspaper. Considering the low rate of subscription we can not see how a bee-keeper can afford to pass it by when making up his list of periodicals for the family library table. It has a strong corps of editors — men and women who are experts in the science of bee-keeping, and who know how to write interesting matter. As a further inducement to subscribe, the editor promises to give an untested queen to all those who send in their subscription now, at the rate of $1.00 for the two. In other words, the paper is free.

The *American Bee Journal* has a record that carries it back into the misty past, when bee-keeping was in its infancy and there were only about three bee journals published in all the world, whereas there are more than eighty now. At the helm it has Mr. George W. York, who does all in his power to turn out a clean up-to-date bee magazine and thus sustain the best traditions of the "old reliable." We know he is always ready and willing to accept suggestions for the improvement of his journal; therefore the future policy of the paper lies largely with bee-keepers themselves. We therefore suggest that you remember the *American Bee Journal* when making up your list of papers for which you intend to subscribe.


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136 W. Main St., Zanesville, O.

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## COLORADO INTERSTATE FAIR AND EXPOSITION.

DENVER, SEPTEMBER 7—12.

PREMIUM LIST OF THE APIARIAN DEPARTMENT.

*Supt., W. L. Porter, 3522 Alcott St., Denver.*

| No. | CLASS NO. 59—BEES, HONEY, ETC. | | | |
|---|---|---|---|---|
| 984 | Italian bees and queen in single-comb observatory hive | $5 | $3 | $2 |
| 985 | Carniolan bees and queen in single-comb observatory hive | 5 | 3 | 2 |
| 986 | Caucasian bees and queen in single-comb observatory hive | 5 | 3 | 2 |
| 987 | Largest and best display of bees of various races in observatory hives | 10 | 5 | 3 |
| 988 | Largest display of queens of various races in mailing-cages | 3 | 2 | 1 |
| 989 | Best display, manipulation of bees | 10 | 5 | 3 |
| 990 | Best case of white comb honey | 3 | 2 | 1 |
| 991 | Best case of light-amber comb honey | 3 | 2 | 1 |
| 992 | Best and largest display of comb honey | 10 | 5 | 3 |
| 993 | Best display of special designs in comb honey | 3 | 2 | 1 |
| 994 | Best dozen jars of white extracted honey | 3 | 2 | 1 |
| 995 | Best dozen jars of light-amber extracted honey | 3 | 2 | 1 |
| 996 | Best and largest display of extracted honey | 3 | 2 | 1 |
| 997 | Best display of extracted honey in granulated form | 3 | 2 | 1 |
| 998 | Best 10 lbs. of yellow beeswax | 3 | 2 | 1 |
| 999 | Best and largest display of beeswax | 3 | 2 | 1 |
| 1000 | Best display of special designs in beeswax | 3 | 2 | 1 |
| 1001 | Best display of honey-producing plants in mounted form | 3 | 2 | 1 |
| 1002 | Best display of fruits preserved in honey | 3 | 2 | 1 |
| 1003 | Largest and most attractive display in department | 20 | 10 | 5 |

For entry-blanks, complete premium list and rules, or further information, call on or address G. C. Fuller, Acting Secretary, suite 416 Tabor Opera House Building, Denver, Col.

---

The following is the premium list in the apiarian department of the Indiana State Fair, to be held at Indianapolis, September 7—11:

| Sec. | | 1 | 2 | 3 |
|---|---|---|---|---|
| 1522 | Display of comb honey—quality, quantity, and manner of putting up for market considered | $25 | $15 | $8 |
| 5123 | Display of extracted honey—quality, quantity, and manner of putting up for market considered | 25 | 15 | 8 |
| 1524 | Display of beeswax, quantity and quality to be considered | 10 | 8 | 6 |
| 1525 | Honey vinegar, not less than one gallon, in glass | 5 | 3 | 2 |
| 1526 | One-frame observatory hive of Italian bees, showing queen, workers, and brood in all stages | 10 | 8 | 6 |
| 1527 | One-frame observatory hive of foreign bees, other than Italian, showing queen, workers, and brood in all stages | 10 | 8 | 6 |
| 1528 | Display of bee-supplies | 20 | 10 | 5 |
| 1529 | Best general display of honey, wax, supplies, and other material pertaining to the bee industry | 20 | 10 | 5 |

The above sketch shows Mr. Oliver Harris, hauling a load of hay across his marshy meadow. He writes The Electric Wheel Co., Quincy, Ill., that this is the first load of hay ever hauled over this meadow in April as he could never get through the mud with his high wheel, narrow tired wagons. With a low wheel, wide tired Handy Wagon such as The Electric Wheel Co. make, he finds it an easy job and claims he saves $23.00, the price of this wagon, in horse-flesh alone, every year.

Our readers with muddy meadows or soft roads will be interested in a catalogue of these wagons which the above company sends free for the asking.

# RASPBERRY HONEY

Our bees in Northern Michigan are storing raspberry honey. At this writing, June 19, some colonies have on their second super, and by the time this issue of GLEANINGS reaches its readers it is likely that some colonies will have on three supers. By the time another number of GLEANINGS is sent out we shall probably be extracting.

Heretofore we have never offered the honey for sale until it was actually in the cans and stored at the railroad station. This causes a delay. Sometimes the honey has been extracted a month before we get orders for it. It would be an advantage to us and to buyers if we could have orders in advance. Then we should not have to go to the trouble and expense of storing it, but could ship it at once as soon as off the hives, while customers would get their honey that much earlier in the season. If any one cares to send us advance orders, such orders will be greatly appreciated, and the honey will be shipped the very day that it goes into the cans.

The honey will be put up in bright *new* 60-pound tin cans, two cans in a case, and the price is ten cents a pound, or $12.00 for a case of two cans. Remember, this is wild-red-raspberry honey, and will not be extracted until all sealed over and thoroughly ripened, and will be thick, rich, and delicious.

**W. Z. HUTCHINSON, Flint, Mich.**

# LISTEN!

## DO YOU HEAR THOSE BEES WORKING?

Soon they will want room or will swarm.

Have you gotten your hives and supplies? If not, send your order at once. If you have The A. I. Root Co.'s catalog you can order from it. We sell their goods at their factory prices. We can fill your orders promptly now. Write for further information and our 40-page catalog.

**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTG CO., MISSOURI.**

# BEE KEEPING will be a profitable industry this season.

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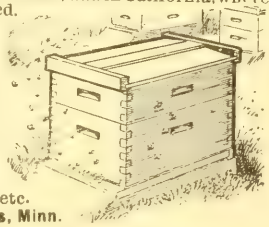

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# THE SEASON FOR

I Hives

II Sections

III Foundation

IV Inside Fixtures

V Bees and Queens

VI Veils and Smokers

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SYRACUSE :: :: :: NEW YORK

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Hitherto we have said very little about our new hive-tool, but after submitting it to some of the foremost bee-keepers of America for their candid opinion—for or against—the universal verdict is that it is a good thing; though it looks like a very simple tool it is very surprising how useful it is to an apiarist. The bent end, for example, is just right for severing Hoffman frames. A slight twist of the wrist does the business without angering the bees, and one's hand is so placed the bees do not see it. For scraping wax and propolis nothing could be finer, and it is better than a chisel, screwdriver, or putty-knife for opening hives. Any bee-keeper will be glad of one in his pocket ready for all occasions. It is made of the finest hardened steel nickel plated.

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*Mr. Root:*—I have been using your nickel-steel hive-tool this spring, and am very much pleased with it. It is the best thing I have tried yet. I, with my helper, have been using tack-pullers heretofore; but this is better because so much stronger. It leaves nothing to be desired except that there should be a hole in it a little nearer the crooked end. I tried to get one drilled but had to give it up—too hard; so I fastened a strap around it to fasten to my pants button.

Oberlin, Ohio. CHALON FOWLS.

**Price 50 cents postpaid. Hive-tool, and Gleanings for a year, $1.25.**

**THE A. I. ROOT COMPANY, . . . . . MEDINA, OHIO.**

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**"If goods are wanted quick, send to Pouder."**
**Established 1889.**

# A LITTLE KNOWLEDGE OF THE BEE BUSINESS

*By the Bee Crank.*

A certain young lady who was visiting in the country sat down to the dinner-table, which was loaded with all the good things that are found on the farm. With the other good things she noticed a dish of honey, and she exclaimed, "Ah! I see you keep a bee."

Of course this was an extreme case, yet many bee-men are but little better posted than the young lady mentioned. The successful bee-man, like the modern farmer, is the one who uses his brain as well as brawn, and who leaves no stone unturned in gaining knowledge of his specialty. It seems to me that no other agricultural industry has developed the improvements and conveniences that are now at the command of the bee-keeper. The bee-man who can get along with "a good enough outfit" usually hangs on instead of pushing on.

I do not believe you can afford to use goods inferior to these which I am shipping all over this great country. I notice that the demand for the Danzenbaker hive is on the increase, and rapidly too. Sections, smokers, and every thing used in the bee-yard, here and ready for you. My Catalog is free.

Save your beeswax for me and send it here and secure highest market price, cash or in exchange for goods.

Hoosier-Italian queens are being sent by immediate return mail. If the world is producing any thing better, I do not know it. Gentle, beautiful, and hustlers. Select untested, $1.00; untested, 75 cents, or six at one mailing at 65 cents each.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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VOL. XXXVI JULY 1, 1908 NO. 13

## STRAY STRAWS

DR. C. C. MILLER

NORTH CAROLINA is the latest addition to the list of prohibition States. Next!

ALL BEES disappear at 65° north latitude, *except bumble-bees.* So when bees are reported in arctic regions proper they must be bumble-bees. —DR. V. BUTTEL, *Bienen-vater*, 50.

J. A. CRANE gives a good plan for starting nuclei, p. 757. But instead of caging the queen three days would he not be more sure to get cells started, and to get more of them, if he removed the queen entirely for three days?

REFERRING to a Straw on page 411, A says he didn't want his money back because the queen died several months after introduction, but on account of the poor stock he got. Perhaps I got cases mixed.

"SMOKING is not allowed during office hours." That's one of the latest rules issued by the Rock Island R. R. [Good rule, and it ought to apply to all business offices in the land, especially if women are in the room.—ED.]

THANKS, Bro. Crane, for your tender consideration of my feelings, p. 747; but haven't I always advised beginners to begin with such sections and separators and bees as will give solid combs? And I've never been able to get such sections as well without the two pieces of foundation as with.

MEHRING, in 1857, made the first comb foundation, in a press with wooden molds. In 1874, Frederic Weiss, a German at Chicago, made the first foundation cylinders. Improved at Medina they are now used for nearly all the foundation made in this country. Weiss died in the poorhouse at Chicago. The fate of so many inventors!—*Ills. Monatsblætter.*

B. F. AVERILL says, page 756, "If bottom-bars are not of good thickness to support the weight of heavy combs, there is going to be sagging sooner or later." Is it not the top-bar instead of the bottom-bar that supports a heavy comb? and if the top-bar does not sag, will the comb sag, even if there is no bottom-bar at all? Mr. Averill has struck the right thing in putting horizontal wires closer at the top than bottom.

E. G. HAND, *Canadian B. J.*, p. 73, refers to a Straw, page 78, where I said a bee-moth with its head pulled off would lay an egg between the thumb and finger—perhaps several. He thinks I ought to have said "perhaps several dozen, and possibly several hundred." All right, friend Hand, I accept the "several dozen," if you or any other good authority has proved it. "Several" is as far as I ever tried it, and I am skeptical about the "several dozen." Positively, however, I'll not accept the "several hundred," for that's more than a moth lays in her lifetime. Prof. Cook puts the total output at 100 or 200 eggs.

K. GUENTHER, *Leipz. Bztg.*, 79, says that in shipping bees the proper place to give ventilation is not at the top nor yet at the side nor front. In either of these cases the bees will crowd upon the wire cloth and shut out the air. He puts the wire cloth under, with strips, of course, to prevent shutting off the air. Thus prepared he sends swarms to all distances, even from Germany to America. [Mr. Guenther is right, according to our experience; but we go one better in the case of long-distance shipments, putting wire cloth on *top* and bottom. But in the case of weak colonies in a regular standard hive, and for moderate distances, wire cloth at the top is sufficient.—ED.]

ALUMINUM figures, indestructible, for numbering hives, are advertised in German journals, about two inches high, at ¾ cent each.—*Deutsche Bzcht.*, 17. Please let us know when they can be had at Medina. [These aluminum figures, when imported to America, with duty added, would come rather high. As it is, they are rather expensive, even in Germany; for most hives, where there is much numbering at all, would have three figures. This would cost 2¼ cents per hive. Figures printed on heavy tagboard manilla, boiled in paraffine, can be secured for very much less; and we have been informed that, when the material is boiled in paraffine, it holds its color and shape. —ED.]

A COLONY queenless for a time is sometimes stubborn about accepting a queen. Even after it has stung several queens, giving it one or two frames of brood will bring it to its senses.—*Leipz. Bztg.*, 77. [It is certainly true that a colony queenless for several days is very often stubborn about accepting an introduced queen. We have had that experience over and over again. The sooner one can introduce after the colony is queenless, the better. It has happened with us a great many times that, when cells are started, the bees seem to put their faith in the cells rather than in any foreign introduced interloper; but we never found that the giving of frames or brood, sealed or unsealed, helped the matter any. It has been our rule to let the bees have their own sweet will, making them build cells from choice larvæ. —ED.]

OCCASIONALLY bees may be seen loading up their pollen-baskets with wax from old combs. Dr. Brunnich, *Leipz. Bztg.*, 35, reports an especially interesting case. A bee was observed all day long for three days carrying loads of

beautiful white wax from a new comb lying on a board. To make sure it was the same bee, a dab of yellow paint was put on its thorax, and for fully eight days longer came the marked bee and carried its fifteen to twenty loads a day. [This is very interesting; but the trouble with the average American is that he is too much in haste for the dollars and cents to learn some of the hidden secrets of nature. This one bee referred to was making a specialty of gathering wax. It is a little strange that it did not bring others.—Ed.]

Louis Scholl thinks the queen would not pass a dummy between brood-combs in the breeding season. Well, that's one of the things I've tried; and with one or more dummies between brood-combs (only one dummy in a place) the queen passes freely from one comb to another. As he says, a bad comb will stop her, but not a good dummy. [We have had just exactly your experience, doctor. A few days ago, in going through the south yard we found where the queen had gone behind the dummy to lay eggs, for we had placed one or two combs in the cool weather outside in order to make the breeding-room smaller to fit the small cluster; but the cluster had increased in size in the mean time, and the queen had occupied the comb the other side of the dummy, and with her a lot of bees.—Ed.]

Mrs. J. W. Bacon, p. 693, speaking of caging a virgin queen for a few days in the nucleus before taking the laying queen away, says, "I find her dead nine times out of ten." I suppose that means she finds the virgin in the cage dead. I'm not sure it ever occurred here. How is it in Medina? And please tell us whether you still value the plan. [We suspect the trouble with Mrs. Bacon is that, in practicing the dual-introduction plan, she puts a second queen in too many days before the other queen is expected to lay; that is to say, No. 2 is too old at the time of getting out of the cage. Ordinarily we should say that the second queen should be given not more than three days before No. 1 lays. You ask what we think of the plan. While we made it work, we are not practicing it now, as we find we can get much better queens from cells put into a nucleus than from two or three or four day old virgins introduced to the same nucleus. The trouble is that the virgins are likely to receive rough treatment on being released, the degree of rough handling depending upon her age at the time of being let out from the cage. Years ago it was not deemed practicable to introduce virgins five or six days old. But they can be introduced very readily to baby nuclei, because these little weak stocks have less of a colony feeling, and will take up with conditions that they would not tolerate if they were stronger.—Ed.]

"Would you advise me to try bee-keeping again? Stings affect me seriously. Some 18 years ago I gave up bee-keeping. Since then, but several years ago, I had three stings. One of the fingers swelled to the shoulder, and I carried the hand in a sling three days. Another on the face affected the side, numbing my arm, lasting about three days. The third, near left eye, closed that, and right eye partly, neck and shoulder swelling; was in fair health, but stronger now." Thus, in substance, writes L. R. Penfield. Hard to advise. If for the money alone, don't think of touching bees. If you like them so much that it's hard to let them alone, try it in conditions that will allow you to give them up any day with little loss. Avoid many stings at first by means of veil, gloves, and gentle bees, and it may be that, after a few stings, the effect will become less. If not, quit. [Mr. Penfield can overcome his difficulty easily if he will submit to a process of immunizing, such as we explained in Gleanings some time ago. Let him take a bee up by the wings, or get some one to do it for him; cause the bee barely to prick the skin of the hand or arm with its sting, then instantly brush it off. This should be done very quickly, so as not to get much of the poison into the wound. If no serious effect follows it may be repeated in about a week's time. After a month or two the dose may be repeated, a little oftener, say once in three days; but in each case care should be taken to get the smallest quantity of the poison through the skin. If this be repeated at intervals for a period of six months, the system will become gradually immunized to the effects of the poison, just as it does to other poisons; and in the same way increasing doses may be taken, and oftener. We had one case exactly similar to that of Mr. Penfield, in which the party can now go among the bees, and can be stung ten or a dozen times without any bad effects. One thing Mr. Penfield can not do; and that is, to take the whole of the effects of a sting. If it be left in the wound, and the entire contents of the poison-bag are injected into the flesh he will, of course, experience just the effects described; but if he presses the bee just hard enough against the flesh so that it barely pricks the skin, and no more, and *immediately* brushes it off, being sure not to press the poison-sac, the effect will not be serious; in fact, he may not notice it at all. —Ed.]

# EDITORIAL

Market early—or at least be sure that all honey is sold before the holidays.

We have been using the Alexander wire-cloth bee-veil. With this, one does not have to use a hat; and in spite of the awkward looks of the thing it is decidedly comfortable. We really felt sorry for Mr. Alexander when we first saw him working in one of those head-gears. While it is not particularly pretty we can say of it, "Handsome is that handsome does."

### MORE PURE-FOOD LAWS.

Oklahoma and Rhode Island have recently enacted pure-food laws for the protection of their citizens. The law in the first-named State is said to be quite stringent in its provisions, and requires the name of the producer or wholesaler on all goods. It may be well to remind our readers right here that they can render the inspectors considerable help by reporting cases of adulteration with reference to the sale of syrups and similar sweets. Laws of this kind require the co-operation of all good people to make them thoroughly effective. W. K. M.

FOUL BROOD IN CENTRAL CALIFORNIA.

J. T. DUNN, County Bee Inspector, inspected apiaries on the west side, in the vicinity of Coalinga. Conditions among the honey-bees were not found to be the best. Forty-one apiaries were inspected, 2553 healthy colonies found, and 302 with foul brood. The inspection was one of the most thorough that apiarists on the west side have been subjected to.—*Fresno Republican.*

THAT INJURED EYE.

To the many inquiring friends who have expressed their regret and sympathy, we would state that the injured eye of which the editor spoke on page 683 is no worse; indeed, it is holding its own. We have begun to read proof again to some extent, and to read manuscript as before. But in the mean time we have been finding rest and recreation among the bees at the south yard. Possibly the reader has noticed that some of the editorial buzzings are fresh from the hive.

While the injured eye will never see perfectly again, yet it is of great assistance to the good eye in that it helps to relieve the strain on the other member.

TIERING UP UNDER OR OVER.

THE question often arises whether to tier up during the height of the honey-flow by putting an empty super *under* the one partly filled, or whether to place supers in the reverse order. This year at our out-yards the first set of supers were filled full or nearly full from alsike alone, and the flow is now only half over. White clover is just coming in, with basswood to follow. We therefore place all the empties under those partly filled. The effect in every case has been to check swarming, and inspire new energy in the bees, as these two portions of the hive must be connected with honey. A little later we shall place the empties on top.

POISONOUS HONEY WANTED.

PROF. H. A. SURFACE, Economic Zoologist of the Department of Agriculture, Harrisburg, Pa., so well known to our readers as a zoologist and enthusiastic bee-keeper, is desirous of receiving samples of honey supposed to be made from the laurel in the southern part of this country, and from the loco weed of Arizona, or any poisonous plants supposed to yield nectar or honey that poisons either human beings or the bees themselves. He is conducting an investigation, and we hope our readers in possession of any poisonous honey will send through the mails a good-sized package of it, which he will examine. Send also a few hundred dead bees that are alleged to have died from the effects of the poison.

THE PRODUCTION OF COMB AND EXTRACTED HONEY IN THE SAME HIVE A MEANS FOR THE PREVENTION OF SWARMING.

WE are satisfied that swarming can be allayed and checked to a great extent, even in the production of comb honey, if the brood-nest is never allowed to become very much crowded. There is no harm in putting the super on a few days ahead of time—better by far than one day too late, resulting in the bees hanging out and the starting of initial swarming-cells. That is the beginning of the swarming fever, and after that it is almost impossible to break it up; but if one is forehanded enough to be a little premature in putting on supers and giving large entrances (whereby the bees are less inclined to lie out in front), it will go a long way in checking the swarming nuisance, especially if the honey-flow is good.

BERLEPSCH, DZIERZON, AND HUBER, AND THE INVENTION OF MOVABLE FRAMES.

DR. BRUNNICH, who writes so entertainingly of bees and bee-keeping in another part of this journal, takes issue with me in respect to the position of Berlepsch in the history of bee-keeping. Any reader of GLEANINGS who read my article on bee-hives in the issue for May 1 can not help coming to the conclusion that Dzierzon did not invent movable combs, neither did Berlepsch invent movable frames. Both inventions were known (*and used*) before either of these famous men was born. Huber, the Swiss, is the undisputed inventor of movable frames. He also discovered the main facts connected with the theory of parthenogenesis. Our German bee-keeping friends could do nothing better than to cut loose from their present system and adopt the Langstroth frame and hive just as the French and English have done. One of those same Texans can look after 500 colonies as easily as anybody in Europe can look after 100 Berlepsch hives. At least, that is our opinion on this side of the herring-pond, and quite a number of other nations are following us. W. K. M.

FREE HOMESTEADS.

IN Northern Wyoming, 75 miles east of the Yellowstone National Park, 300 farms, from 40 to 160 acres each, have been thrown open for entry under the terms of the Reclamation Act. This tract embraces about 15,000 acres, constituting the first unit of the great Shoshone irrigation project. The charge for water rights has been fixed at $45.00 per acre, payable in ten annual installments; but the second installment of $5.50 does not become due until the fall of 1909, so that the settler can secure two crops before that time. The extra dollar is for maintenance—that is, to keep the dam and ditches in good repair. Actually, the settler pays nothing for the land, only for his share of the dam, etc., in which he is a shareholder. The land and the water are inseparable. At present the only way to reach these lands is over the Chicago, Burlington & Quincy Railway; but a north and south trunk line is in course of construction, connecting Billings, Montana, with Denver. It is estimated that a settler ought to have at least $1000 to make a fair start. It is almost unnecessary to add that this will be a fine bee range just as soon as the settlers get their alfalfa started. The climate is unexcelled. Bees may be wintered out of doors, with a fair amount of protection. Employment may be obtained from the Reclamation Service in digging canals and other work, and homesteaders will have the preference. The project is being extended so that there will be work for several years yet in extending the present systems of canals. Further information may be obtained by addressing the "Statistician," United States Reclamation Service, Washington, D. C. W. K. M.

STARTING STUBBORN COLONIES UP INTO THE SUPERS.

We advocate (and always have), giving a shallow extracting super to a colony backward in going into the sections. After it begins on this a little, we take it away and give it sections. In the case of a *particularly* stubborn colony we practice giving an extracting-super from another hive in which the bees are nicely started in *building comb* and *storing honey*. This is kept on for three or four days, after which we give it to another stubborn colony.

These shallow extracting-supers that the bees have begun to work in are splendid to coax the bees upward. When the honey crop has been secured, one will have both comb and extracted honey. The proportion of either can be regulated to suit the local demand.

A PAINLESS STING.

We had a strange experience yesterday, June 23, and we desire to know whether anybody else has ever had any thing like it. We were stung on the wrist about one inch above the palm of the hand, at a point where, ordinarily, it would be very painful; but, strange to relate, there was absolutely no pain. The bee had lodged its sting so well that it had difficulty in freeing itself. As a matter of fact, we did not discover that we had been stung until we saw the bee whirling around and around in the effort to free itself. We removed the sting, located the small puncture, but there was no blister or swelling, *and no pain*. It would look as if one bee, at least, had been possessed of all the parts of the sting save the poison. Has anybody else had the pleasure of receiving a painless sting in a tender spot where the skin is thin? We have had dozens and dozens of stings where the skin was thick and calloused, without feeling it, but never before at a tender spot.

PRICES OF HONEY THIS SEASON.

The situation so far as California, Texas, and some other portions of our country are concerned, remains practically unchanged. In spite of premature reports to the contrary, we are satisfied that those sections will not yield a large amount of honey. California will have but very little, and the same is practically true of Texas. The market was demoralized in some sections by a good many left-over lots of Western comb honey which have now candied. If these had been sold before the holidays, when there was a crying demand for it, and when it could not be obtained for love nor money, the market would now be in a much better condition.

The indications for a fine flow in some of the Eastern States will have a tendency to lower prices a little from last year; but if the times pick up (as we confidently hope and expect them to do) the market will be nearly able to hold its own.

AN ALSIKE YEAR.

The flow from clover in many sections of the rain belt seems to be exceptionally heavy; in fact, it appears to be one of the old-fashioned clover years of ye olden time. Some untoward weather conditions might cause it to stop short off; but this hardly seems probable at this date.

The high price of red-clover seed early this spring induced farmers to try alsike, which is an easy grower, and in connection with timothy it makes a very fine quality of hay. The experiment stations as well as farmers have been recommend-it for dairy purposes. This fact, with the high price of red-clover seed, has resulted in a vast acreage of alsike this year. If the farmers would only test it carefully from the standpoint of milk and butter, and not from the standpoint of the tonnage of hay, they would probably be induced to grow it more largely in the future. If they do, localities ordinarily poor or fair will be made good for the bee-keeper.

Alsike comes on a little ahead of white clover, or at least it did so this season. As the former begins to wane, the latter fills up the gap and thus keeps up an uninterrupted flow; and then basswood, wherever there is any, nicely joins hands, so that this year especially many bee-keepers will have a continuous flow of from one month to six weeks.

But the clovers have not yielded as finely in every section. In parts of Minnesota, Iowa, Michigan, and New York, there has been too much cool weather and rain; but the recent hot spells must inevitably have changed the situation for the better.

CAP-MELTING APPARATUS AND ITS PATENTABILITY.

In our issue for May 15, page 626, and also for May 1, page 560, we gave an opinion to the effect that the Beuhne patent, issued January 8, while narrow in its general claims, was broad enough to prevent any one else from covering the same principle. Since that time we have had a call from Mr. Beuhne, of Tooberac, Australia, and during the course of our interview with him we called attention to the weakness of his patent. As he appeared to be prior to any one else in the use of any and all methods for melting cappings as fast as they leave the knife, we suggested to him the possibility of securing a reissue of his patent, with broader claims. He consulted his patent attorney, and the latter has since informed us that he thinks it is entirely feasible; and then, moreover, he is of the opinion that his client can secure a broad patent on the *method* or *process*. For this Mr. Beuhne has filed his application. If this latter is granted it would bar any one else from securing a patent if he is not already barred by the patent of Jan. 8th last, and at the same time prevent any one from using the principle in any manner whatever, providing that such a one is unable to show that he used the method or process prior to July 10, 1907, the time that Mr. Beuhne filed his application. But Mr. Beuhne will not be disposed to be unjust or unfair to any inventor, providing any such inventor can give satisfactory proof of his use of the principle.

In this connection we may say that we have examined the Beuhne apparatus, and feel satisfied that it is a long way ahead of any thing else that has so far been presented to the public. As he is a pioneer in the melting of cappings as fast as they leave the knife, he has tested almost every method that has thus far been presented, either in this country or abroad, and is prepared to show why the special construction that he uses is superior to any other design. Later on we hope to show drawings of his machine.

# GLEANINGS FROM THE PACIFIC COAST

By Prof. A. J. Cook.

"Man proposes, but God disposes." How true of our honey harvest! I have always thought since coming here that California was in the lead as a honey-producing State. We get such phenomenal crops when the seasons are favorable that this might be the bee-keepers' paradise except for the too frequent off years. We thought till lately that we had only to reckon with the season's rainfall. We thought, as we would know of this in the early spring, we could know of a surety whether a golden harvest awaited us, and so we would not have to provide for fixtures unless a harvest was certain. With ten or twelve inches of rain in winter we were sure of a great harvest. With less rain we would not purchase supplies, and would arrange to busy ourselves in other ways than in working with our pets of the hive.

We now know that we reckoned without our host in this regard. I fear that we are behind our brother bee-keepers of the East. With good weather conditions for the season, they are quite sure of a crop. We must have abundant rainfall and a favoring season as well. For the past three seasons our rains have been abundant and timely, and we felt sure of a generous harvest. But our springs have been cold, and we have failed to realize our expectations. This works in three ways to knife expectancy: It keeps the bees from breeding in the months of February, March, and April; it hinders flight when the time of harvest comes, and it prevents the flowers from nectar secretion at the time of the regular harvest. I never knew a better season, so far as the rains go, than this, yet I fear that the harvest will be as light as that of two years ago. The weather is delightfully cool. I once heard a physician say that the time of which he was speaking was "distressingly healthy," so we may say here in California, this spring, that the weather is distressingly cool and delightful.

### FRUIT-BLOOM HONEY.

We have just been eating a little honey that is almost surely pure citrus honey. I presume I might say orange honey; but as the lemons are also in bloom, and thickly planted close by the bees, it is quite likely from both orange and lemon. It is of delicious flavor, and we wish that we might have more of it. I had the good fortune in Michigan to secure, more than once, fruit-bloom honey. It, too, was very delicious. Of course, we can not usually get much of this honey, for, like the honey from soft maple and from the eucalypts here in California, it comes when there are but few bees, and so can never be important in the markets. It is of great value, however, in stimulating brood-rearing. The bees are also of equal or greater benefit in cross-pollenating the bloom and so in augmenting the crop.

### A WORD REGARDING ANTS.

Ants are insects that must interest every bee-keeper. They are of the same order as the bees, the *Hymenoptera*; in development they approach nearest to bees; in habits and social instincts they are very much like the bees, and in brain development and functional differentiation they are strikingly like our honey-bees. They also interest us as enemies of bees. Indeed, in differentiation of function, and in intelligence, they are superior to our pets of the hive. Their habits of slave-making and habits of division of labor are wonderful indeed, and must challenge admiration from any that study their ways and habits.

We say of our bees that they are polymorphic, for they are of three forms; while most species of insects, and, indeed, of all animals, are of only two forms, the male and the female. Ants eclipse even bees in this respect. We not only find in the formicary (the nest of ants) the queen, the true female, whose sole function, in many cases, is to lay eggs; the male bees, the ants that are comparable to the drones of the hive, and the workers, which, unlike the others just mentioned, are wingless. But we find others with large jaws and heads that are often called soldiers. These do work to defend the home against intrusion. Again, in some species there are more than one kind of worker. These will be found of different sizes, and with difference in the development of several of their organs, like the mouth organs and other parts of the body.

There have been several theories advanced as to the cause of this polymorphism. I think the real cause is the one that is generally believed by the wisest and best informed of our bee-keepers. It seems that the same agencies that have worked in the evolution of different individuals in *Aphis mellifera* have also prevailed to modify the ants, the white ant, and the wasps. It seems certain that parthenogenesis, in all these cases, has differentiated the males from the females. The males come from eggs that have not been fecundated. This is also called agamic reproduction—that is, fecundation without males. It is strange that eggs can and do develop without receiving the male element, or sperm; but this is known to occur in other insects, like gall-flies and plant lice. In some cases the result of such development is a female and not a male. This is generally true of the *Aphids*. In the bees, wasps, ants, and white ants, it is, without doubt, true that the males come always from unfecundated eggs, and so are the fruit of parthenogenesis. We are greatly indebted to the great Dzierzon for the discovery of this great truth. The generally accepted theory, that the difference in the development of females, so that in some cases we get a true, perfectly developed female, the queen, and that in others we get the usually smaller workers, comes from difference in quantity and quality of food. That there is in case of bees qualitative difference as well as quantitative, is certainly true; but in case of wasps and ants this difference is often wholly quantitative; and so we may believe that the cause of variation of development is principally from difference in amount of food. A sort of starvation process causes a stay in the development of the ovaries. It is interesting that, in case of other organs, there is greater development in the workers than in the queen. We know that the tongue of the worker is longer; and that the pollen-basket, or corbicula, is not developed in the queen. There are tremendous puzzles to be

worked out in the matter of the evolution of these polymorphic forms, and the student of this subject has great prospects before him. Darwin, Spencer, and Weismann all attacked the problem, and gave us much that is helpful; but there is a vast deal to be discovered even yet; and the one who comes to the subject with the time and ability to discover the ways that God works out these changes will be, like the great Dzierzon, a benefactor.

Claremont, Cal.

# CONVERSATIONS WITH DOOLITTLE

UTILIZING THE CELLS IN COLONIES THAT ARE TRYING TO SUPERSEDE THEIR QUEENS.

"I had quite a little trouble last year in carrying out my plan of non-swarming, Mr. Doolittle."

"What seemed to be your trouble?"

"I bought quite a lot of queens during the summer of 1906, and for some reason these queens seemed to have hard work to keep up the strength of the colony. Some of the colonies having these queens increased in bees very little after they were set from the cellar, and some died outright. Many colonies would build supersedure cells, and, although not very full of bees, quite a few of them would swarm on these cells unless prevented."

"About what time of the year was this?"

"Along the latter part of May and the fore part of June; and, although not by any means as strong in bees as those colonies mothered by queens of my own raising, quite a per cent would swarm on these cells."

"Did any of your own stock act in this manner?"

"None, only some of my very old queens. I had two of my best old queens which did the same, but one was three years old and the other four. I had started in to control swarming, and every queen that seemed able to do reasonable service till the flow should come was retained and the cells cut out. To do this I handled over the brood-combs of the entire apiary, once every ten days to two weeks, and it was a job I don't care to go through with again; and that is the reason I came over to have a talk with you. These colonies with those poor queens that I bought gave the poorest honey-yields of any."

"Why did you not requeen these colonies having the poor queens?"

"I thought it would be no better to requeen, because it was a hard time to rear queens; and, besides, to have those colonies rear young queens would get no more brood for the flow than just to keep the poor queens a while longer."

"It would look to me as if you were not thoroughly posted on the superseding-queen matter, because you go on and tell me how the bees reared cells to supersede those old queens, and swarmed with those cells, or the queens from them, I suppose you meant; and then you tell me that you kept all of those old queens that you thought would possibly do any thing, because it was a hard time to rear queens. You further said to have let these colonies rear young queens would get no more brood for the flow than to keep just the old queens a while longer, and so you just worked and worked, cutting cells to keep down supersedure swarming."

"What else could I have done?"

"Let me tell you that the queens which emerged from those supersedure cells were as good as any queens you ever had."

"What? Do you call queens good reared from those miserable queens which I bought?"

"But you said that two of your best old breeders did the same things, and the cells from these were as good as any you ever had from those queens during the years before, and it was *not* a hard time to rear queens, for the bees reared them themselves, without any hard work on your part at all."

"But I thought the honey harvest must be on in order to rear good queens."

"That may be so where the novice is rearing forced queens; but with the bees superseding queens of their own accord during the latter part of May and the fore part of June, they are making no mistake, I assure you, as to the quality of the queens they raise. You should have taken every cell you could from these two colonies with your old breeders, and, after cutting out all the cells from other colonies, put one in each colony which was found trying to supersede its queen. You would thus have superseded all of those poor queens without any swarming, without cutting of cells, and without *expense* of brood-rearing, and done the whole at one stroke; for the old queens would have kept right on laying just the same for all the cell or the young queen emerging therefrom, till she got ready to die, so you would have had all the brood you could have had in any other way till this young queen began to lay, when she would have boomed the brood without much danger of any swarming during the whole season."

"That does look reasonable, as you tell it."

"Yes, and it is reasonable in practice, as well. This is as I manage with supersedure cells early in the season, when I find any of my best colonies trying to supersede their queens, and I find there is no work in the apiary pays better than thus saving all supersedure cells."

"But if other colonies are not known to have supersedure cells, how can you use such?"

"The record kept of the age of queens, and other records, show which are my oldest as well as poorest queens; and if none of these colonies are found to have supersedure cells started, the nearly ripe cells I may have from my good old breeder, or from any good stock which is trying to supersede its queen, are put in these colonies which I think may try to supersede their queen a little later on, and in this way I nip the thing in the bud, and have many colonies renew their queens without any expense save the insertion of one of these nearly mature cells."

"Do you leave any cell with your best queen which is being superseded?"

"No, not until I see she is about to give out entirely; for if I did, as soon as the young queen emerged therefrom that would stop any further building of cells from this source. I always consider myself very fortunate when I find any colony of real good stock trying to supersede their

queen at any time during the months of May, June, July, or August, for then I cut out all the cells every ten days and use them. If I do not have colonies which will accept them, as I have just told you, I form nuclei to take them, and, when laying, later on, after the main honey harvest is past, I supersede all queens, which do not come up to my standard of perfection, with these which are ready to be used at any time, and in any place I may wish. I fear bee-keepers in general do not fully realize the value of this superseding matter as they should."

Borodino, N. Y.

# GENERAL CORRESPONDENCE

## THE NATIONAL BEE-KEEPERS' CONVENTION.

### Of What Should the Program Consist?

BY DR. C. C. MILLER.

The article published in the *Bee-keepers' Review* by Secretary Hutchinson, as a sort of prospectus of the coming National convention, shows a careful consideration of some of the things that go to make up a good convention. Not only because of its bearing upon the coming National convention, but much more because of its bearing upon bee conventions in general, it is worth while to give the matter further consideration. Indeed, so important is it that, for the sake of emphasis, some of Secretary Hutchinson's points may be repeated, even if nothing is to be added to or subtracted from them. Moreover, it would be a good thing if members would take Secretary Hutchinson at his word, and give "help, hints, and suggestions" that may make the convention "vastly better." Like other things connected with bee-keeping, there is room for constant improvement in conventions, and worse use might be made of space in bee papers than in discussing the topic.

The discussion of some special topic for the first evening, or, for that matter, at any session, with stereopticon views is good. The only trouble is that it may not be practicable to have the stereopticon at all the smaller conventions. But that detracts nothing from its value wherever and whenever practicable.

Mr. Hutchinson suggests, as a thing never before attempted at a National convention, to have "at least one debate during each of the day sessions." Put in that general form, it is certainly nothing new, for more than one lively debate has occurred in many a session. But Mr. Hutchinson explains that he means something a little different—a regular pitting of two debaters against each other, prearranged, each an able defender, the two holding opposing views. That might be a good thing. Again, it might not. If a convention is made up of members who are slow to take part in the discussion of topics presented by the question-box, then it would help to have the time partly occupied as indicated. But if the time for formal debate is to crowd out impromptu debate—for almost any topic offered in the question-box is pretty sure to awaken discussion with opposing views—then it might not be a good thing. Mr. Hutchinson says that "we common folks can sit back and enjoy the 'flow of words and the feast of reason.'" Couldn't we enjoy the same thing just as well in our own homes by having the two speeches printed in the bee journals? Indeed, that's just what we do have in the bee journals, frequently and constantly. But the vim and the snap of the impromptu discussions, when many an idea is brought out that would not be presented in a prearranged debate, nor given in the bee journals, partly because some will take part in the offhand discussions who would not write for the journals the things they say in convention, these things we can not have except in convention, and we want to get there what we can not have elsewhere. In the days when more than now time was taken up in convention with prepared speeches or essays, one can recall that one gave scant attention to these many a time, thinking that one would get exactly the same thing to be read at leisure afterward, saving the attention for the wide-awake offhand discussions that could never be exactly reproduced on paper. Would it not be the same thing with any formal debate?

Most bee-keepers will heartily second Secretary Hutchinson's motion to cut out the banquet. The mass of bee-keepers are not nocturnal birds; and the banquet, with its late hours, would do more to unfit than to fit them for the next day's work. Whether all would favor an evening of prepared speeches, speakers not previously announced, is a question. But there is no disputing Mr. Hutchinson when he says: "To attend a convention at some distance from home is more or less of a strain, at best, and every precaution ought to be taken that the members should feel just as well and as bright as they possibly can; otherwise there is little enjoyment." There are breakers ahead in two opposite directions. There is danger that the long-continued strain of close attention may be so great that the sessions become a pain instead of a pleasure, and the tired mind may actually refuse to continue action. On the other hand, members feel they want to get in all the time they can in actual convention work—in real bee-talk. Well-meant but ill-directed kindness often suggests that something should be provided for the entertainment of members in attendance—an excursion by way of boat or trolley, etc. Some may enjoy this, but many will count it time lost. A mayor or other official, who doesn't know a drone from a worker, is chosen to make a welcoming address, enlarging upon the beauties of the place, its prosperous manufacturers, etc., and time is taken for a response, and this, too, will be counted time lost.

Well, if such things are not the best to provide proper relaxation, what is to be done to relieve the constant strain? It should be remembered that the strain comes, not from the number of sessions, but from the long-continued strain of each session. Plainly, relief should come by a rest in the middle of each session. In our public schools, instead of a continuous session from 9 A.M. till noon, a recess of 15 minutes is taken during the forenoon, and with that rest more is accomplished in the 2¾ hours left than would be

accomplished in the unbroken 3 hours. So let a recess of 15 or 20 minutes occur in each session. Have it distinctly on the program, so that by no possibility may it be omitted.

There is another matter of exceeding importance that helps to prevent the weariness of a long session—ventilation. In too many conventions there is no one whose special business it is to see to ventilation, and after the same air has been breathed over and over again for two to four hours it is no wonder that heads are not clear for close attention. Why not have a committee on ventilation? If there are not good means for constant ventilation, let all doors and windows be opened at recess, and let all arise from their seats and move about the room to avoid the chance of taking cold.

Marengo, Ill.

## HOW FAR DO BEES FLY?

### Some Evidence to Show that this Distance is Greater than that Commonly Reported.

BY J. J. WILDER.

I once lived in Arkansas, in a "point"—a small piece of woods extending out from woodland into a prairie. The forest was heavily timbered, and many of the oaks were hollow; and I have never seen in my ramblings as many wild bees as were in this section. Bee-hunting and game-hunting were the sports of the day.

During the swarming season it was nearly an every-day occurrence to see or hear swarms passing over, going in various directions. I have seen some swarms go out across the prairie in such a direction that, if they did not change their course greatly, they could not have reached a destination under 25 or 30 miles, there being no trees in the direction they went. There was nothing but prairie grass, and occasionally a small island of sassafras-bushes which were often burned off by fire. Sometimes points of wood could be seen in the far distance, but these could not be reached without a great change in their course, and most of these points contained only small growth.

It was believed by some that the swarms going out on the prairie took up their abode in the prairie grass; but this was not proven, as no swarms of honey-bees could ever be found in it.

Peddling was a part of our business, with Little Rock as our market, and to reach it this prairie had to be crossed, and about midway there was an island of trees with a pool of water in it. We made this our stopping-place at noon or camping-place at night. Here we sometimes saw honey-bees on the bloom of hazel-nut bushes, and at first we thought there was a bee-tree there until we made diligent search for it, and found there was not. Then we concluded that the bees came from trees in the distant points, which were about ten or twelve miles away, even if it was in the point and not in woodland below it.

I have seen enough facts to lead me to believe that the black (wild) bees are far better travelers than the Italians, and that they never could have made the progress across the continent the black bees have, and can never receive the same abuse at the hands of the inexperienced.

Cordele, Ga.

## THE HONEY-GRADING RULES.

### Too Many Grades Makes it Difficult to Distinguish One from the Other; a Plea for Simplicity.

BY L. C. CLARK.

The Eastern grading-rules for comb honey which head your market column are too complicated. There are too many grades for practical use. Here are three grades of honey, including No. 1; and it would puzzle an expert to designate the dividing line between these three grades. Why have any third-grade honey as described in your grading-rules? It would weigh from 7 to 9 lbs. per individual crate, and, taking your No. 2 as a basis, No. 3 might have only half of the surface capped over. It would not be any credit to a bee-keeper, nor would it pay him to ship or sell such honey in a retail way. It should be cut out and sold for chunk honey, or by weight in larger quantities, to the local trade. To make the matter more confusing to the novice you say in the last paragraph, "In addition to these grades it is to be classified (does this mean *graded?*) according to color—white, amber, and dark." Now, does this mean that each of the five grades named is to be divided into three more according to the three colors named? If this is intended it would make 15 grades, and no one could follow the rules with that number of grades. I realize that in some localities the honey might all be amber late in the fall, when it could be graded fancy amber, No. 1 amber, and No. 2 amber; but applying this rule to an entire crop of dark honey would give us fancy dark, No. 1 dark, and No. 2 dark. Who can imagine fancy dark honey or even No. 1 dark?

To simplify the rules I would suggest that A No. 1 grade be dropped entirely; for, according to the wording, there is very little difference between it and No. 1; and, for reasons before given, No. 3 should be dropped; also honey with any considerable part of the surface uncapped should be excluded from No. 2 or any other grade. This sanction of one-fourth uncapped in No. 2 and No. 3 is a temptation to some to send all kinds of unfinished leaky honey to market, to the detriment of the trade. Where is the trade that would take half-weight sections as specified in No. 3?

The rules of the Colorado Honey-producers' Association, page 490, are much simpler and more easily understood than the Eastern rules; and were it not for a class of amber honey there would be but two grades in these rules, which is enough except for the fancy trade of large cities. Bee-keepers may grade honey as they please, and it facilitates a fair understanding between the producer and commission men and dealers. But the retail buyer who is to consume the honey grades it with his eye before purchasing; and the color (white) is the most important consideration. Therefore it would seem that we should give color more prominence in our rules.

Bakersfield, Cal.

[The Eastern grading-rules were adopted at the convention of the National Bee-keepers' Association in Washington, in 1892. The matter had been thrashed out over and over again; but the rules that were adopted at that meeting, notwithstanding they did not please every one, have seemed to stand better than any thing else.

It is very seldom that dark or amber *comb* honeys are marketed if we except buckwheat; and in referring to it we say "fancy buckwheat," "No. 1 buckwheat," etc. But when one has a certain lot of nice comb honey that is dark or amber, or of unknown source, or of a mixed source, the only way to mark and grade that honey is by the qualifying adjectives; as, for example, "fancy dark" or "No. 1 amber." There is so little of this honey produced in sections that a very small quantity, comparatively, of it is offered. Practically speaking, we do not hear of "fancy dark" or "fancy amber;" but it seems unavoidable to have these gradings to take care of certain lots of honey that must occasionally be offered.

The Western grading-rules apply to a strictly Western honey, nearly all of which is white with some amber. In the West, at least in the Colorado districts, the honey is graded in the matter of weights *by the case*, and we are of the opinion that it would be wise for the Eastern bee-keepers to adopt the same scheme in their grading-rules. It is simply impossible to make every section of a certain grade of the same weight; but it is possible to make all of the sections in a case average up.

This question is open for discussion, and possibly it may be wise to modify the Eastern rules to take in the scheme of grading by the case as well as by the section. This would be a very proper subject for the next meeting of the National Bee-keepers' Association to discuss at Detroit. The matter is respectfully referred to Secretary Hutchinson.

We must beg leave to differ with our correspondent wherein he believes that fewer grades would be desirable. They might be for one locality; but a set of grading-rules must be expansive enough to take in *all* localities, say east of the Mississippi River or west of it. The time was when there were fewer grading-rules, and trouble resulted from the fact that there was too great a difference between one grade and another. No, no! we feel sure that there should be as many grades as now exist. To go to the other extreme would only be going back to our old difficulty. —ED.]

## THE TROUBLES OF AN AMATEUR BEE-KEEPER.

### Fall Fooling.

BY F. DUNDAS TODD.

"Leave well enough alone!" Not on your life, especially with such interesting possibilities as a hive of bees. I considered I had been dead lucky in landing up against trouble at the beginning of my bee-keeping career; and, having come well through my first campaign, I was ready to tackle something more difficult, just to keep myself interested. Happy thought! why not devote one hive to experimenting with the Ferris double-queen system which was then being described in GLEANINGS?

It was now well on in September—far too late to start with this scheme; but I set to work to make the necessary fittings, got deeply interested and made them for all three hives, and sent for a couple of queens as a starter.

Problem: given a hive, find the queen. In the sweet springtime it is apt to be rather easy, for bees are few and queens are big; but it is difficult in September, when bees are many and queens are shrinking. I read all the matter in all the books and magazines on finding queens, and could tell the proper procedure with all possible complications. First, choose a sunny day and have the sun at your back; pick out the first frame and quickly glance over the next in the hive, then examine the one in your hand. Then take comb No. 2 and glance at No. 3, then examine the comb in your hand, and so on to the last frame. If unsuccessful, repeat. If still unsuccessful, stack the combs in pairs for a little while. I did all this without success. I had bees everywhere, but not a trace of the queen. Dr. Miller says, and he is an authority, "When the queen must be found" (this was my condition exactly, and by this phrase I knew where I was at)—"put the bees through a sieve made up of a hive-body and a queen-excluder frame."

Great scheme! On paper it looked fine, and my boy and I both thought if we had been wise we would have tried the last scheme first. Just think of it! pass your bees through a sieve, and the remainder is a queen. No problem at all, for a problem is when you try to do a thing in an undoable way.

So we nailed a honey-board to the under side of a hive-body and shook into this sieve all bees from the frames and the hive, replaced frames in the hive, put the sieve on top, and awaited developments. Conditions were getting pretty tense as night was approaching, only two hours off, and we had thousands of bees in the air and in the sieve. Something was wrong somewhere. The bees would not go through the device. Then we smoked them, which started a few of them on the downward path. Smoking, I had often been told, had this effect; but I longed for a wholesale process, as this was too slow. At length I put the cover on the sieve and retired to have a smoke on my own account, believing it would be less irritating to the bees. Just before sunset I overhauled the contents of that sieve in a last effort, and decided that, first, the queen was lost; second, the queen was not lost. Either way it did not matter, for I had two queens, so I would divide the hive with the division-board, introduce a caged queen on each side, and let it go at that. The queenless side might accept; the other would take care of the intruder. This was done, and on examination a week later I found the old clipped queen in one side and a balled dead queen in the other.

Next day I opened the other two hives, found the queens without any trouble, put in the division-board, and the day following introduced queens to the queenless sides. One was accepted by the weakest hive, the other was not. A week later I tried again in the two hives where I had failed; but as the season was now far advanced I

felt I could not afford to open the hives again to overhaul the frames.

Does not Doolittle urge the importance of "millions in the hive" in the beginning of winter? So I proceeded to feed each side of the hives from above, night after night, until the bees seemed to be unable to take down any more. I noted particularly that No. 1, my original, and a very strong hive, took by far the most; No. 3, my second best, took down very little; but No. 2, the weakest, did fairly well. These facts are worth remembering in view of the developments in the following spring, and I had food for much thought in the summer and fall of 1907 in an endeavor to account for the unexpected way they behaved in the building-up season.

In the beginning of December, 1906, I bunched my hives side by side and enclosed them in a strong packing-box 8 feet long and 4 feet square, filling up every nook with dry leaves. I left an open space six inches wide in front of the entrances, and set a sloping portico to protect from strong winds and drifting snow. The entrances were contracted to 3 inches by ⅜ for each division. The bees wintered finely, very few dead being found at the entrances or on the bottom-board at the end of winter. They had a flight the first week in January and again in the middle of February.

Toward the end of December I saw a dead larva at the entrance of the side of hive No. 3, in which was the new queen. I had seen a few eggs and the queen herself at the last examination, so felt hopeful. January 5 I saw four drones flying from this side, and now I had cause for wonder; but all I could do was to wait until spring.

During the winter my interest in bees continued to develop at a rapid rate. In my day I have had many hobbies, but this was the first with living animals I had ever got inretested in. Chickens had never appealed to me, though I had kept them in a perfunctory way for the sake of their product. Speaking of chickens reminds me of one of my neighbors who, for several years, kept the finest strains in the market, and most methodically followed all the rules and regulations recommended by the authorities. Never did I see such beautiful birds as his Wyandottes and Orpingtons: never were chickens so comfortably housed, methodically fed and cared for, yet not one egg did my neighbor get for eighteen months. Of course, we teased him unmercifully —that is part of the fun of suburbanites. When I was busy trying to introduce the duplicate queens, one of my boys was reading up the subject in the books. When he came to where it is told that in the spring a queen may lay as many as 4000 eggs in one day he dropped the book and exclained, "Why does not Mr. Thomson get a cross between one of our queens and his chickens? He would get eggs then for sure." Thomson's hybrids added a little to the gaity of the village for a few days.

Two books I found specially interesting at this period, and some of my readers may be glad to hear of them. One was Mæterlinck's classic book on the bee, written in a style that is both poetic and scientific. It is not a book on practical bee-keeping, but is a charming study of the social arrangements of a hive. Even more fascinating to me is "A Level of Social Motion," by M. A. Lane, which is published by McMillan. Primarily this book is intended as a prophecy of the final outcome of the evolution of human society, the limit being when it shall become in stable equilibrium with its environment. Bees, the author considers, have already attained that condition; and, using the hive as a prototype, he works out a very interesting theory. Any bee-keeper who happens to be interested in sociological subjects will find in this volume an epitome of our present-day knowledge perfectly marshaled, and applied in a new way. A very important conclusion is arrived at.

Medford, Oregon.

## EXTRACTING HONEY IN COLD WEATHER.

### Leaving Honey on the Hives until Fall, and Extracting the Whole Crop at One Time by Warming it Artificially; the Use of Bee-escapes.

BY E. D. TOWNSEND.

Several bee-keepers in this part of the country have out-yards near the home yard, and draw all the honey home to extract. Mr. F. J. Miller, of London, Ont., Can., has a full equipment at his home yard, including a gasoline-engine, to run his extractor, honey-tank in basement, etc. The honey runs by gravity into the tank, and from the tank into the can on the scales. In this way there is no handling of honey, for it is necessary only to lift the full can from the scales and put an empty one in its place. Every thing is arranged with such complete system that Mr. Miller alone, with his one-horse wagon, draws home and extracts all the honey from 500 colonies.

One of the secrets of his success is in having plenty of empty combs, for he does not extract during the honey season, but on rainy days later, when nothing else can be done. He is thus independent so far as help is concerned, for if he gets in a "pinch" he can at least give his colonies more room.

We have drawn home considerable honey to extract, but we found the work a little on the strenuous order since we did not have every thing arranged for doing so much at once. With Mr. Miller's system I can see where failure might be turned into success.

Mr. E. E. Coveyou, of Petoskey, Michigan, has his two main bee-yards located along a railroad. Hs formerly shipped his eight-frame extractor, gasoline-engine, honey-cans, etc., to these yards each spring, and then, after the harvest was over, he shipped the apparatus and all the honey back to Petoskey where he bottled the honey for the grocery trade. Since his large bottling-room in Petoskey could just as well be used for an extracting-room also, he will now ship all of his honey there to be extracted, and he will, therefore, be able to have every thing arranged as conveniently as possible. In the spring the empty combs will be shipped back to the yards. Of course, there will be a large freight-bill to pay when following the new plan—possibly there will not be much difference in the expense of transportation between the new plan

and the old; and experience alone can tell which is the more economical.

It is evident that, if honey is taken from the hive with the bee-escape, and drawn home, it will be too cold to extract to good advantage, so it will have to be warmed artificially. The most feasible way to do this for the average bee-keeper is probably to set up a heating-stove in a small room in order to make matters more convenient, and also to save fuel. If this stove were set in the center of the room the supers of honey could be piled criss-cross around it. Since the hot air ascends, it is well to build an open platform two feet from the floor, on which to pile the honey, for supers placed next to the floor would not get warm, and they would have to be lifted up eventually to a warmer part. We have used three benches to good advantage, placed around the stove in the shape of a triangle, though leaving an open place through which to fire the stove. Of course, it would be possible to get the room so hot that the honey would be warmed, no matter where it might be placed; but in order to do this the heater should be large or else the room quite small. O. H. Townsend, of Otsego, Mich., has a plan similar to this, only he goes a step further and even cures that part of the honey that was not capped. Concerning this, he writes as follows:

For a fall flow of honey, the plan of extracting the honey after the flow is certainly a good one. If the building is put up properly the work can be handled very easily, and the honey extracted just as well in November as in July.

One thing must be remembered, however, that the supers, when they are stacked up, must not be covered tightly or else the moisture will not escape; and any unsealed honey will sour in two days in such a warm room. In taking off my honey last year I found that there were eighteen or twenty Heddon extracting-supers that had been put on very late, and these contained practically no sealed honey. I left them on the hives so that the bees might move the honey down if they would; but they did not, so I shook the bees from these supers on the ground in front of the hives and set them in my little bee-escape building, which is six feet square inside, with open screened windows. The weather was cool and rainy, so the honey was undoubtedly very thin, although I was not afraid of its souring, because of the cold temperature. I should have put it in my extracting-room; but as I was busy there I left it outside, where it was more out of the way. After these cases had been exposed to the damp air for five or six days it was set into my honey dry-kiln, where it was left just *seven* days, when it was extracted. I then found that it had been exposed to the warm air about four days too long, as it was possible to get only a part of the honey out of the combs. This thin watery honey was, therefore, evaporated down to the heaviest-bodied honey I ever saw, in seven days.

My building is built well. It is sheeted with planed unmatched boards, then covered with a good firm quality of building-paper, and finally sided over with ordinary beveled siding. The room at the end for warming the honey is 10 x 14 feet, and is lined on the sides and ceiling with the same kind of paper as that used between the sheeting and siding, this paper being lapped and fastened to the studding with lath, making good tight joints. I find that the paper retains the heat as well as or better than plastered walls, and it allows the moisture to pass through it, insuring a dry room. The paper cost 50 cents per roll of 500 square feet.

In the center of the room is a box stove with oval sides, the first joint of the stovepipe having a damper. As the fire-door fits tight, the draft can be regulated to perfection, which feature is important, as it allows the heat to be controlled, and prevents the waste of fuel. With wood of fair size the fire can be kept over night if the dampers are properly regulated.

When the extracting is to be done in cold weather I start the fire a day or two beforehand. As mentioned before, three or four days are necessary to ripen thin honey; and when the evaporation has been kept up long enough the covers can be placed tightly on the supers to prevent the further escape of moisture. There is some danger of melting the combs in the upper supers if the covers are tight; but if one is careful to keep the temperature right, there will be no trouble. I have quite an air-space above the supers of honey in the gable roof, which keeps the temperature of the room more nearly constant.

I do not depend upon the warm room for ripening all my honey, as it is left on the hives all through the season. However, there is generally some that is not sealed, and this is greatly improved by the evaporation. O. H. Townsend.

When following the plan of extracting the honey late in the year the combs may be freed from bees with the bee-escape or by brushing. At our Kalkaska yard, where both comb and extracted honey are produced in the same super, all supers are taken off with the escape. One day is sufficient to free the bees from a shallow super; but more time will be necessary to get the bees out of a full-depth super. Knowing that the Hutchinsons have had much experience in getting bees out of full-depth supers with the escape-boards, I asked Mr. Elmer Hutchinson, of Pioneer, Mich., to tell something of the plan. His letter is as follows:

We put only one full-depth super over an escape-board, for the bees are rather slow in leaving if more than one are put on at once. We give the bees a few vigorous puffs of smoke, driving down perhaps half of them, and then put on the escapes. If these are put on in the morning of a warm day, from one-half to three-fourths of the supers will be ready to come off by evening, and most of the others will be free of bees by the next morning. I have not noticed any difference in the time in takes, whether the combs are all sealed or only partly sealed; but a few dozen cells of brood will hold the bees in the supers a long time.

There is one thing about which I should like to caution beginners: Be sure the colonies have a queen; and, no matter how tight the covers are, keep a close watch, for there may be trouble from robbers. Elmer Hutchinson.

Remus, Mich.

## USING HONEY FOR CANNING.

### Honey Cheaper and Better than Sugar for Canning Fruit; Honey Better than Molasses.

BY MRS. FRANK McGLADE.

In the March 1st issue of Gleanings, page 278, I notice that the strawberries put up with honey were all right, as I was sure they would be. So far I have used honey for canning fruit only in a small way, but have watched the results carefully, and am fully convinced that it can be used in place of sugar for any kind of fruit with much better results than if the sugar were used. When using honey I have never had a can spoil, and have always found the fruit far better and richer than that put up otherwise. We have been eating some peaches this winter that were put up three years ago, and in that time we have moved once. In every instance the "gude mon" has handed up his dish for a second helping, which is always a sign that it "hit the spot." I would, therefore, advise those wishing to try the honey to do so by all means.

Formerly, when I canned strawberries I took two quarts of good firm berries, just from the vines, stemmed them late in the day, rinsed them quickly in cold water, and drained in a colander until I could prepare another can. I put them in a stone crock and covered them with a cup of granulated sugar and set them in a cool place until morning. I then put them on the stove, boiled them well, and canned them. With this amount there is enough to fill a quart Mason jar, and a little over for a taste. When using the honey in place of sugar the same method is followed except that only half a cup of honey is used, which is poured over the berries so that it goes down through and all around them. We are careful to use good fruit, as one over-ripe berry may spoil the whole lot. Cherries, raspberries,

and blackberries may be canned, using about half the amount of honey that would ordinarily be used of sugar. The larger fruits, such as peaches, pears, quinces, etc., are also improved by the honey.

Fruit must be handled right in order to be good, and we must be free from other duties while canning it. A very safe rule is to follow whatever plan has been found successful, substituting half the amount of honey for the sugar. I am sure no one will be disappointed.

For cooking purposes, making pickles, etc., honey is just fine. We never buy molasses, corn-syrup, or glucose—"ugh!" You should see some of my ginger-bread which Mr. McGlade says is the "cake that takes." Here is the recipe. Try it for yourself.

Two eggs, cup granulated sugar, cup and a half of honey, cup of sour milk or buttermilk; cup of butter or lard; teaspoonful of cinnamon and a teaspoonful of ginger. Beat all together and add two teaspoonfuls of soda dissolved in a little hot water; flour to make a thin batter (about five cups). Bake slowly.

We use honey in making pumpkin pies—a generous teaspoonful to the pie. Furthermore, we use honey on the table every day, and our little boy never tires of it. He helps himself with a spoon whenever he likes, at mealtime or between meals, and has not had a cold nor seen a sick day this winter, although he runs and plays out in the fresh air in all kinds of weather. Of course, honey can not be given entire credit for this, but it helps, and is cheaper than doctors' bills.

Some have asked whether fruit can be put up cold by simply filling the can with the fruit, covering it with honey, and sealing. I have never tried it, because I don't believe the fruit would keep or be good; but if any one wishes to be convinced, let him try it, for it would cost only about seventy-five cents.

Hebron, Ohio.

## FULL SHEETS OF FOUNDATION IN SPLIT SECTIONS A SUCCESS.

BY JAMES P. HOWARD.

In reply to the footnote at the end of Mr. Atwater's article on the use of full sheets of foundation in sections, p. 152, Feb. 1, I can say that we have used them to some extent for the past two years. We used the Coppin split section, which is made in two separate pieces. To fill in the foundation, a *holder* is placed in a *form*, and a row of the *half-sections* laid in, when the holder is keyed up in the form so that the sections are held in exact shape to go into the super; then the sheet of foundation, cut to the exact size to fit the row of sections, is laid on, the other half of the sections laid on, then a piece of board of suitable dimensions placed on the sections, and pressed down *very* firmly. I pound it with some solid light weight, after which I grasp the holder so that the sections can be held in place, lifted from the form, and placed in the super.

In the first season's trial I don't remember any failure of sections being *completely* filled and finished in *fancy* shape—not a single pop-hole anywhere.

We tried still more of them the last season, with about the same results during the first half of the season; but in most of the supers filled later there were more or less brace-comb attachments to the fence separators, which were a serious objection wherever they occurred. It seemed to be caused by the sagging and *bulging* of the foundation, bringing it too near the separators. The foundation used was all of the same lot, and all other things and conditions the same so far as we could see, except the weather, which was very cool the past season. On the whole we consider it a success. The sections are 4¼×5×1⅜, and fit finely in the regular Ideal supers.

### LIQUEFYING CANDIED HONEY.

In the light of our experience "in this locality," Mr. Holtermann's statements in the last two sections of his article, page 145, seem very absurd. Honey in the brood-chambers of our hives, when candied, remains so until thrown out, and some is always thrown out of some hives as soon as the bees began to uncap any in the fall. I think he would get very tired of waiting for such honey to liquefy at a temperature of 100 degrees.

Milwaukee, Wis.

### EXPERIENCE WITH FULL SHEETS OF FOUNDATION FASTENED ON ALL FOUR SIDES OF THE SECTION.

*Mr. Root:*—In the issue for Feb. 1 you ask for reports from those who have used sections with foundation fastened on three or four sides. We used several thousand the past season with fastenings on four sides in 4×5 sections in Danzenbaker supers, and the product was entirely satisfactory. I believe there were not two cases of ill-shaped or unmarketable sections in the whole of them.

The hives were fairly well shaded, and possibly that might help a little in preventing sagging and buckling. But in the same yard we used sections with foundation fastened only at the top in the usual way, and the honey was just as good in every way except some that was gathered later, and also some where only narrow starters were used.

I would say that, so far as quality of finish is concerned, nothing could be finer than the honey produced on foundation with four sides fastened; but the extra work is just that much added to the cost of production; and, in our experience last year, it was entirely useless.

### CONTINUOUS SMOKE THROUGH COMBS ON A WHEELBARROW TO STOP ROBBING.

Last fall I discovered what I think is a very good plan for getting the upper hand of the robbers when taking off honey to be extracted. We were only about half through a yard with extracting, and the robbers were getting so bad that it was next to impossible to do any thing. Robbers are bad in proportion to the size of the yard, and this was a good-sized one.

I took a tin dish and fixed it under the wheelbarrow in such a way that, with a small fire in it, it would send smoke up through the set of combs in the super on the wheelbarrow, and scarcely a bee would venture in. At first I thought it might injure the honey flavor; but if the right amount of smoke is used, and not too long continued, it will be entirely impossible to detect a trace of smoke in the honey.

Parma, Idaho. H. E. Crowther.

# EXTRACTED-HONEY PRODUCTION.

## Straining the Honey.

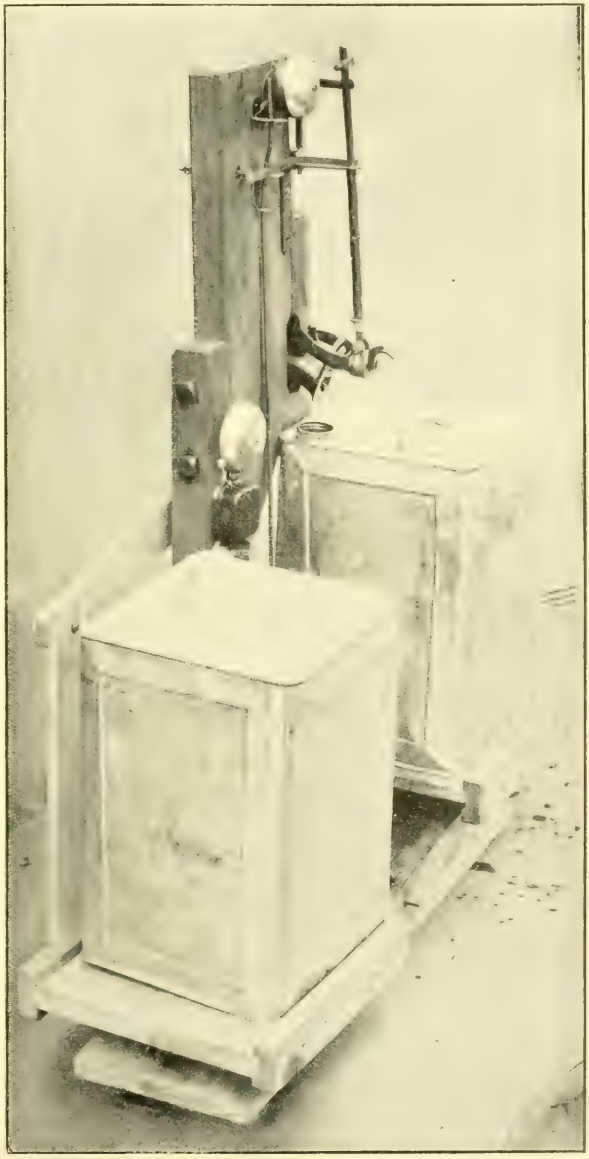
BY W. Z. HUTCHINSON.

*Continued from last issue.*

An extractor with a strainer in the bottom probably possesses some advantages. One is, that it can be set at a less height from the floor, as no space has to be used for the strainer-tub. We have always used an ordinary galvanized wash-tub, with a honey-gate in one side near the bottom, and the top covered with cheese-cloth sewed to a wire hoop slightly larger than the top of the tub. We have several of these cheese-cloth strainers; and when one becomes so filled up or covered with pieces of wax that it strains slowly we remove it and lay it over another tub, or a barrel of cappings, until the honey has all drained through, when the accumulation of cappings and thick honey is scraped off with the honey-knife. I have been told that it would be better to have the cloth strainer more in the nature of a sack, nearly large enough to fill the tub and rest upon its bottom; then the sides of the sack would remain free from cappings; and act as a strainer without becoming clogged. In a horizontal strainer, such as we have been using, the trouble is that the cappings settle upon the strainer and soon clog it, while the sides of a sack, being perpendicular, remain free from cappings, and do not clog in a long time.

### FILLING THE CANS.

Honey produced according to the plans described in the previous articles is ready to go directly from the extractor into the cans or barrels; in fact, it is better that it should be canned up at once, as there is less loss of flavor or aroma. There is also a saving of time, as it is only necessary to remove a full can and put under an empty one while doing the work of extracting. To know when a can was full, without standing by watching it, was one of the problems that I had to solve, and I did it by using an electric alarm, on the principle of an electric door-bell; in fact, I used the identical outfit that is used for a door-bell. Almost every one is familiar with this arrangement that rings a bell when a current of electricity is sent through its mechanism. When the button in the door is pressed, an electric circuit is completed, and, as a result, the bell rings out in the kitchen, or wherever it is placed. If the complete filling of a can or barrel could be made to complete an electric circuit within which is an electric bell, then an alarm would be given. I solved the problem by so arranging matters that the raising of the brass beam of a pair of platform scales closed the circuit. The battery used is one of the ordinary dry-cell batteries, such as are used for telephones, door-bells, or for furnishing a spark for a gasoline-engine. Be sure to get a good battery. If you can get only the cheapest kind, better get two cells and connect them, as the connections upon the scale-beam are



PERFECTION DUPLICATING SCALES.

This arrangement not only weighs the honey but it closes the gate when the can is full, and rings a bell to let the attendant know that it is full. It can be used to weigh almost any size of package or commodity, duplicating the weight exactly, and doing the work automatically.

not as close as are usually made upon a door-bell, and it requires a good strong current to overcome these imperfect connections and ring the bell. It won't answer to depend upon a bell that does not *always* ring —better not have any bell at all. Connect the battery and the bell by means of the insulated wire that comes with the bell, then cut one of the wires in two, scrape off the covering for a distance of two or three inches from each end, wind one end around the brass beam of the scales, near the back end, then support the other end just slightly above the other end of the beam, when the latter is depressed. Put your can on the scales, set them to the desired weight, turn on the honey and go about your business, provided the business is not out of sound of the bell. As soon as the requisite amount of honey has run in, the beam will rise and touch the end of the wire above it, thus completing the circuit and ringing the bell. The scales may be set a pound or two short, and then set at the correct weight after the alarm has been given, and the filling completed.*

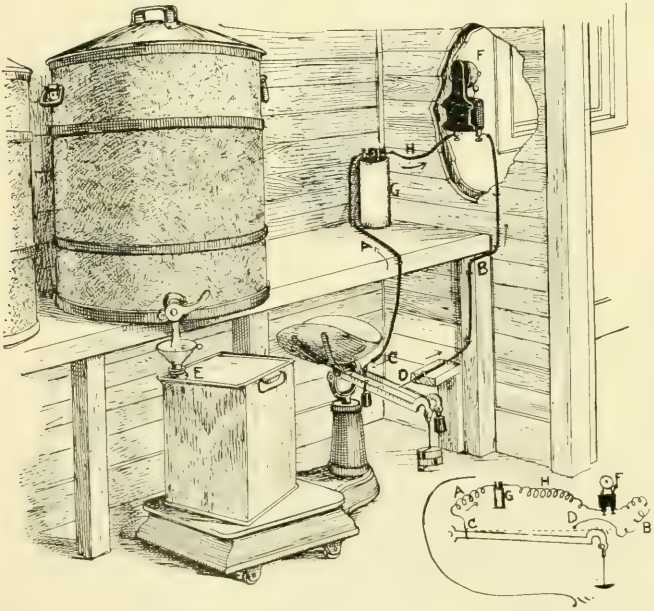
CHEESE-CLOTH STRAINER ON TOP OF A TUB.

This tub is set under the honey-gate of the honey-extractor, and the cans are filled from the honey-gate in the side of the tub. Extracting, straining, and canning are all in operation at the same time

AUTOMATIC SCALES THAT CLOSE THE GATE WHEN THE CAN IS FULL.

There is just one objection to the electric alarm just described, and that is, something may happen unexpectedly, making the electrical connections imperfect. A bit of wax once got upon the beam of the scales, just under the spot where it ought to have touched the wire above when it raised, and great were the consequences. Thanks to the inventive genius of Mr. E. E. Coveyou, of Petoskey, Michigan, even this point has been overcome. He has perfected and used successfully what he calls his Perfection duplicating scales, which not only give an alarm when the can is filled, but actually close the gate in a positive, certain manner Let me describe it:

First, there are two platforms suspended at the ends of a beam hung upon a pivot at the middle. This part of the machine is an almost exact duplicate of the druggist's balancing scales. Upon one of the platforms is placed a 60-pound can *full of honey*, or its equivalent in weight. Upon the other platform is placed the can to be filled. When the can becomes full it balances the can upon the other end, and thus it *settles down*. As it goes down it draws down a small brass rod connected with that end of the balance. The upper part of the rod is not straight, but bends out from the standard of wood to which the various parts are fastened. Just in front of the bent part of the rod is one end of an "elbow" of iron or steel; and, as the rod is drawn




THE ELECTRIC DOOR-BELL ALARM TO INDICATE WHEN THE CAN IS NEARLY FULL.

The plan of wiring up the battery, bell, and scales is here clearly shown. The contact at D is made when the beam lifts, connecting the electric current.

*This plan is also clearly shown by the engraving accompanying Mr. Townsend's article, p. 761, June 15.

down, the bent portion presses against the end of the elbow that is in front of it, and swings it around slightly, thus throwing the other end of the elbow to the right, forcing it out of a notch cut in the side of an upright rod, the lower end of which is fastened to the upper part of the honey-gate. When this last-mentioned rod is thus released it quickly shoots downward, closing the gate. The force that causes it to shoot downward is a spiral spring, coiled around the rod between a "bulge" near its lower end, and a projection from the standard that comes out just below the "elbow" above mentioned.

As the rod goes down, a projection on its upper end catches the projecting lever of a little gong, causing it to give out a sharp ring. When the gate is again opened, the rod rises, the spiral spring is compressed, the end of the "elbow" catches in the notch in the side of the rod, thus holding it up, a little spring behind the left end of the elbow pulling the latter around and causing it to catch in the notch.

The honey from the extractor or from the tank, as the case may be, is brought to the gate through a rubber hose. When the gate is opened, the honey continues to run, of course, until the can is full, when it again descends, which pulls down the rod, thus forcing around the elbow, again releasing the rod having the spring, when down it shoots, cutting off the stream and ringing the gong.

As a double precaution, there is an electric bell that rings when the can is full and descends, thus making the connection. This bell rings continuously until the full can is removed.

DISPOSING OF THE CROP.

In my experience, such honey as this, thoroughly ripened, thick, rich, and aromatic, can be sold at from one to two cents more per pound than the ordinary honey thrown upon the market; but in order to do this the right class of customers must be found. Such customers will be found among those who buy honey for their own use, or to put it up for a retail trade. It will require some effort and some expense, however, to find these customers. You must advertise, and send out samples. Of course, this costs something; and if a man were to remain in the business only one year or for a short time it might not prove profitable — probably would not; but a man can gradually build up a trade and secure a class of customers who will eventually buy his honey without any advertising. After I had advertised only one year, and sent out samples and filled orders, I began receiving orders the next year from my customers of the previous year. They did not even ask for samples; they said, "If your honey is like that of last year, you may send me so many cases," and they sent on the cash.

Now, friends, isn't it worth while to have such a trade—to be able to sell your honey, year after year, to the same men, those who willing to pay you from one to two cents above the market price, and send cash with the order, because they *know* that no finer honey can be produced, and that it is worth what you ask for it?

The whole thing can be told in a few words: Produce honey of a superior quality, and then let consumers know about it — the latter is fully as important as the first.

Flint, Mich., March 13.

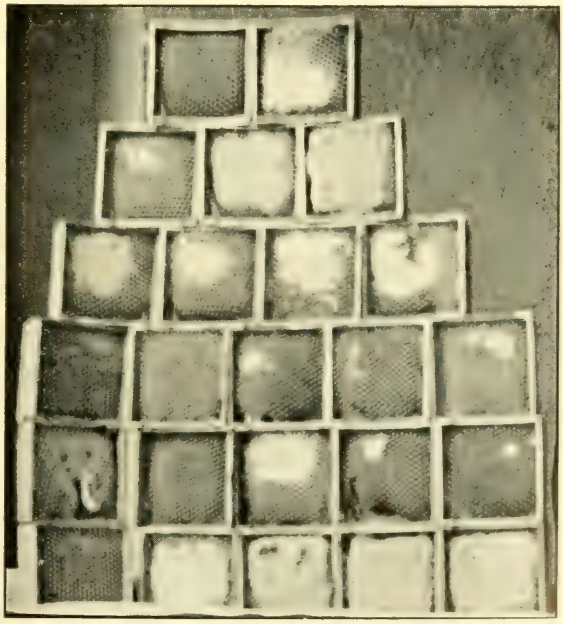
*To be continued.*

## ANOTHER INSTANCE OF DISHONESTLY GRADED HONEY.

BY S. J. GRIGGS.

We inclose you a photograph of a case of honey which we received in the car of honey which we bought from the ——— Co., of —— We found in looking this honey over that we had about 200 cases of this class of goods. The four bottom sections were placed along the glass in order to hide the rest of the honey and to deceive the purchaser. We have written these people several times, and on the 200 cases we secured a refund of $150. A case of this honey originally cost $3.50, so this leaves us a cost of $2.00 per case, which you know we could not get for it. We found a card in several of these cases of the —— —— producers, ——; and we are satisfied that a large percentage of it came from them. Mr. N. E. France has written them several times, and we are having some correspondence back and forth, but the eastern dealers must do all in their power to stop this practice, as it is certainly an outrage for people to have such stuff as this poked on their hands.

We think you can do considerable good by



A SAMPLE OF DISHONESTLY GRADED HONEY.
The four full sections at the bottom were placed next to the glass to deceive the purchaser.

putting this in GLEANINGS; and while you can do as you like about mentioning any names, they ought to be shown that this matter has got to be advertised if they continue this kind of work.

Toledo, O., April 30.

[We have suppressed the names for this time, but desire to warn the parties that if this kind of work is repeated again we shall give the names the prominence they deserve. The question may arise, "How will the parties know they are the ones referred to?" The "shoe will fit" when it is tried on. If it doesn't, it won't need to be worn.—ED.]

## A NON-SWARMING RACE.

### What Can be Expected of Such a Bee? Some Statistics to Show the Percentage of Swarms in Several Apiaries in Switzerland.

BY DR. BRUNNICH.

On p. 1554 of GLEANINGS for 1907 Dr. C. C. Miller, in speaking of our race of Swiss bees, says, "If not more than two or three in a hundred colonies are likely to swarm, I'd like a queen of that stock, no matter how black."

This note induces me to tell something about swarming in our country, where the conditions for the crop are, I think, not greatly different from yours. Our principal crop lasts till the hay harvest — middle of June; after that, but little honey comes in except in localities where there are great forests. In earlier times, when bees were kept in straw hives, and when sugar was too dear for feeding, the colonies swarmed but very seldom; and when they did swarm it was not later than the middle of May. This is accounted for by the process of selection and acclimatization, because bees that swarmed much and late would die and not propagate. So it was that our grandfathers had a stock which began to breed very late (end of March); but they would then breed with great intensity to be ready when the honey harvest began. After the harvest, the brood began to diminish; and in August there was but very little brood in the hives. This bee, so well acclimatized, possessed a great longevity, and, in consequence, the hives were always full of bees, though there was but a small amount of brood.

Then the movable frame came to our land, and, soon after, a great many of our bee-men were seized by a certain disease — the mania for strange races of bees. They imported Cyprians, Italians, and especially the gentle and productive Carniolans. This disastrous blending of our stock with strange blood generated, in most bee-yards, a deterioration of the bee, and bee-keeping in straw hives gave such poor results that they began to diminish rapidly. The Carniolans brought us a mania for breeding and swarming, and the Italians destroyed the harmony of the brood-nest by the changed conditions. Those Italian hybrids began to breed very early in the year, and hence had great losses in spring; further, they were short-lived in our climate, so that they were poor in numbers though rich in brood. Many a bee-keeper "crossed" himself about the quickness of the stiletto and the cleptomania of the Italian bees. By the way, I can not sufficiently emphasize the fact that our black race, as well as the Italian and Carniolan, is very gentle if purely bred; but nearly all hybrids are very cross.

When Mr. Kramer, and others later on, recognized the superiority of our native stock it was, fortunately, not too late. There still existed many remote bee-yards where were found the old home-bred bees with their noble qualities. They were supported by the great *hardiness* of the race, which tended, in spite of all intermingling of foreign races, to hold its own against the other races. By the aid of rational breeding, thanks to our mating-stations, we now have in many bee-yards a good number of queens—enough to satisfy all reasonable demands. I have some queens in my bee-yard which cause the heart of the bee-man to leap at any time of the year, particularly at harvest time — queens whose genealogy is noted in my books for several generations back, including that of the drones also. Their bees are exceedingly long-lived, as

FIG. 1.—DR. BRUNNICH, OF OTTENBACH, SWITZERLAND, IN THE ACT OF HIVING A SWARM.

FIG. 2.—A SWARM IN A VERY INACCESSIBLE PLACE.
Notice at the right a small cluster of bees around the caged queen.

are the queens. They begin breeding late, but then breed with vigor, so that in a few weeks the hive is full of bees. The brood-nest in spring is wonderfully regular. It is one of those queens that lived eleven months with her daughter in the hive. We do not clip our queens; but about five years ago I began to put on every queen a distinguishing mark every year, varying with different colonies.

How about the percentage of swarming of our stock? Dr. Miller demands not more than 3 per cent from all colonies. What does that mean? Let us suppose 100 colonies which are never requeened, but which supersede themselves at the proper time throughout many years. Then they ought, in 100 years, to swarm 300 times (3 per cent supposed). One colony, therefore, in 100 years swarms 3 times — that is, once in 33⅓ years. Well, doctor, you demand a stock which supersedes ten to twelve times without swarming. Then it is allowed to swarm, but afterward will have to support itself for 33 years, and so on. I think, doctor, this is asking a little too much, is it not? I must confess that our old stock, when still dwelling in little straw hives, swarmed oftener than every 33d year, and it was, indeed, compelled to do so. With the uncertainty of the honey harvest, and without feeding, these colonies would have diminished rapidly.

How is it to-day with the swarming of our best stock and with the movable frames? It is sure that our large hives are fit to restrain swarming; but, unfortunately, there is no bee-yard that has pure stock for a number of years. The purifying of a race takes many years; although the conditions with the bee are most favorable at mating-stations, yet scientific experimental breeding is not practiced much longer than about ten years. I myself have reared queens for only seven years, and therefore I can not give a decisive judgment. But I can, however, give you some statistics. Mr. Spuhler gives me the results of the past seven years in the field of the association of bee-keepers of Zurich and surroundings. Of these, in the year—

1900, 2733 colonies cast 569 swarms, or 20.8%
1901, 3110 colonies cast 162 swarms, or 5.2%
1902, 3158 colonies cast 145 swarms, or 4.6%
1903, 3116 colonies cast 351 swarms, or 11.0%
1904, 3441 colonies cast 321 swarms, or 9.4%
1905, 3706 colonies cast 488 swarms, or 13.2%
1906, 4020 colonies cast 590 swarms, or 14.7%

This gives an average of 11.3 per cent of swarms. But you must remember that it was not 11.3 per cent of the *colonies* that swarmed; for, taking care of the after-swarms, it might, perhaps, be 6 or 7 per cent of swarming colonies. Further, it must not be forgotten that, in the case of about 3000 or 4000 colonies, there were still a great many hybrids; and last, but not least, not all the bee-keepers were experienced enough — perhaps not even willing — to suppress

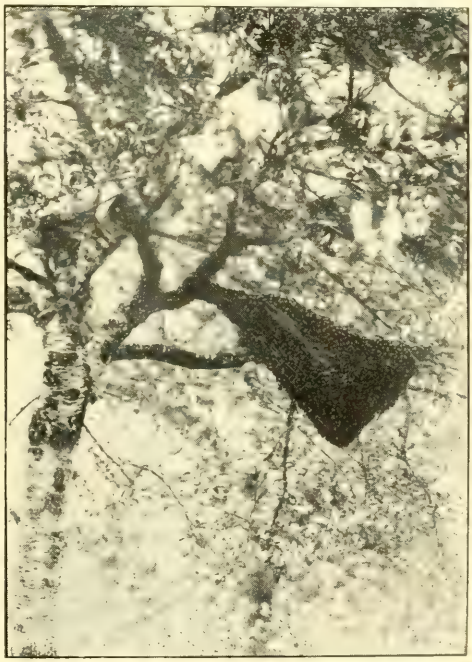


FIG. 3.—THE BEES OF THE SWARM SHOWN IN FIG. 2 IN THE NEW POSITION OVER THE QUEEN-CAGE.

FIG. 4.—DR. ERUNNICK'S SON ABOUT TO PLACE THE CLUSTER IN A HIVE.

swarming as much as possible. It is a well-known fact that a skillful apiarist will reduce swarming by not giving much drone comb, by enlarging at the proper time, etc. I think, therefore, that Dr. Miller will not be totally dissatisfied with these figures.

Mr. Spuhler, an old, experienced, and able apiarist, tells me that his average of swarms in those last years (he has 100 colonies at home and in two or three outyards) is about 6 per cent, or of swarming colonies about 4 per cent.

I can give you still better results from another friend of mine, Mr. Serf, also an experienced queen-breeder. He gives me the following figures, having in one single yard about 60 colonies (in our country you can not have profitably more than 60 colonies in one place).

| | |
|---|---|
| 1898, 12% of swarms. | 1903, 0% of swarms. |
| 1899, 0% of swarms. | 1904, 2% of swarms. |
| 1900, 2½% of swarms. | 1905, 5¾% of swarms. |
| 1901, 0% of swarms. | 1906, 1½% of swarms. |
| 1902, 4 % of swarms. | 1907, 5 % of swarms. |

This gives for the last ten years 3.3 swarms from 100 colonies. What do you say to this, my good Dr. Miller? Mr. Serf has, like myself and many others, a short honey harvest; but he has a good one because he has a very fine stock of bees.

That you do not possess in America a satisfactory race of bees is no enigma to me. It is due to the mania for new races and the roaring "tam-tam" of recommendation of foreign races that it is impossible for your bees to assume a fixed type and to become acclimatized.

And now a few words to Dr. Miller concerning page 36. You wonder how I can have the arrogance to say "that I am not yet convinced that a pure strain of blacks would not be the best for you under *your* conditions." I will tell you. In GLEANINGS for 1905, page 370, you can read a most interesting notice from Mr. L. H. Scholl, of Texas, whom I consider from this note alone to be a very clever and scientific queen-breeder. He told you that he possessed an exceedingly fine strain of blacks — fertile queens, excellent honey-gatherers, and — think! *gentle* bees. Queen-rearing was then an easy thing, thanks to the stability of his race. But it was otherwise when he introduced the beautiful yellow bee. In brief, the introduction of the Italian bee signified for him the deterioration of his bee-yard. Well, doctor, should not that which is possible in Texas be possible also in a northern climate?

A word about Berlepsch, who seems to be totally unknown to our American colleagues. In the "History of Bee-keeping," by Bessler (1885) the author says: "Through his book, 'The Bee,' the best existing apistic work till now, he has acquired immortal fame; and as long as bees continue, the name of Berlepsch will shine with the greatest splendor." Berlepsch invented the frame in 1852, some years after Dzierzon had given us the movable comb, which was fixed only at the bottom in a rabbet. Undoubtedly, in regard to the movable frame he was to Europe what Langstroth was to America. It is true it was Dzierzon who gave us the theory of parthenogenesis; but it was Berlepsch who, by the aid of Leuckart and Siebold, *proved* this theory to be true and gained the general acknowledgment of the scientific world to it. It was, indeed, with unflagging zeal that he investigated and solved the finest problems in apiculture; and what he claimed, he proved by numerous experiments backed by an exceedingly keen intelligence. It is a great pity that his work, "The Bee," is quite unknown in America, for even to-day it is a great delight to read this old book with its im-

mense number of interesting details concerning bees.

I do not quite understand W. K. M.'s remark, "France is not one whit behind Germany in scientific research, and yet it does not accept German ideas any more than we do," etc. Please look at Cowan's "Honey-bee," chapters on parthenogenesis, digestive apparatus, structure of the glands, etc., and you will find that, notwithstanding your assumption, a great many German researches have been accepted by all nations. But these are useless quarrels. We had better take the good, wherever we may find it, be it in Russia or America.

Ottenbach, Switzerland.

## THE DEVELOPMENT OF LOCAL BEE-KEEPERS' ASSOCIATIONS.

BY R. F. HOLTERMANN.

There is developing in Ontario a strong activity in the county or local bee-keepers' association, and the movement is receiving every encouragment from the Department of Agriculture. Our province (in standing equal to one of the States of the Union) gives to the various agricultural bodies such as bee-keepers, fruit-growers, vegetable-growers, dairymen, short-horn, Ayershire, horse-breeders' associations, an annual grant. This grant is in proportion to the importance of the industry and to the use the association makes of the money contributed. I must confess, when I see the results we obtain from this help, that it is a matter of surprise to me that the States of the Union do not adopt the same policy. The outlay, after all, is not great, and yet it is the very thing needed to give foundation for co-operative action to those interested in the development of the various branches of agriculture. I feel sure that all that is required to secure this system or policy in the United States is a brief, active, and energetic campaign on the part of those interested. If such demand such aid, it will be given by the state.

OFFICERS OF THE SIMCOE CO. BEE-KEEPERS' ASSOCIATION.
JOS. M'GINNIS. DENNIS NOLAN. C. H. WILSON.

That the desire for such help is strong, I know from coming in contact with people on the other side of the line. The feeling, however, appears to be that *this is not the general policy of the state*, and therefore there is no use in looking for a grant. Let the agricultural body at large ask for it; let the agricultural press take it up; let

E. T. BAINARD, SECRETARY AND TREASURER OF THE— E. J. MILLER, PRESIDENT OF THE—
MIDDLESEX CO. BEE-KEEPERS' ASSOCIATION.

them point out that agriculture does not receive the assistance that its importance demands, and the help will come. Our Ontario Bee-keepers' Association receives a grant of $500 per annum. It gives $200 per annum, to be divided between the various local or county associations in affiliation with itself. So far this has given the affiliated society from fifteen to twenty dollars of a grant.

The payment of one dollar gives a bee-keeper membership in the affiliated society, also in the Ontario, and has given each member the premium a member of the Ontario receives, which has in the past been a journal, a smoker, or a queen.

The local society can not become affiliated with the Ontario until it has at least ten members who also, as per the above, become members of the parent society, and the grant given it must be spent in certain specified ways in keeping with the advancement of bee culture.

The Department of Agriculture, I believe, is prepared to help bee-keeping more than it has, and I think it is prepared to give the Ontario association a larger grant if it can use the money to advantage, and if the affiliated societies become more numerous and active, the Ontario should give a larger grant to encourage this activity, and the latter will then be able to submit the best possible plea for more money.

In addition, the Superintendent of Farmers' Institutes, Mr. G. A. Putnam, is providing lecturers to affiliated socie-

ties. This has been done in New York, Pennsylvania, Wisconsin, and other States for years, and this movement will, no doubt, increase the usefulness and number of the local societies.

Those of us who have been in close touch with association work realize that State and provincial associations, in affiliation with the National, are desirable and necessary in order to give greater strength and influence to the National. It is also desirable and necessary in order to reach the largest number of bee-keepers. In order to carry out the greatest educational campaign, and reach, as it were, the very door of the bee-keeper, we must have county or local associations in affiliation with the State or provincial organizations, and these, again, with the larger. We realize that there is something needed to make bee-keeping a more permanent business with half of the bee-keeping population. Let us treat the industry more seriously and it will reward us.

NO. 2.—A. I. ROOT'S "CABIN IN THE WOODS" ON OUR ISLAND NEAR OSPREY, MANATEE CO., FLA. SEE ARTICLE ON ANOTHER PAGE.

RECENT LOCAL CONVENTIONS AND SOME OF THEIR OFFICERS.

On April 18 the Simcoe County Bee-keepers' Association met at Barrie. The attendance was good. Reports handed in indicated that bees had wintered well—probably not more than 10 per cent having perished, and these died on account of having improper stores for winter. Three members had their bees still in winter quarters. As is generally the case in Ontario, an unusual quantity of stores had been consumed by the bees during the past winter. R. F. Holtermann was present, and in speaking on the subject assigned him, "How to increase the average yield per colony," gave some of the following points: Give more and better stores, contracting the combs to the strength of the stock, for winter. When possible, shelter the apiary from prevailing winds. Use larger hives; shade and ventilate hives and prevent natural swarms, and thus have more uniform colonies; pay more attention to blood in bees.

Pres. C. H. Wilson acted as chairman, and Dennis Nolan, who is also a director of the Ontario Bee-keepers' Association, made an excellent secretary.

MIDDLESEX BEE-KEEPERS.

The above association met at London with Pres. Miller in the chair, who is also president of the Ontario Bee-keepers' Association. In relating experience, Mr. Kimball described a bee-house for wintering bees above ground. It had a four-inch hollow wall in the center, with 12 inches of sawdust inside and 8 inches of sawdust packing outside, giving four walls of lumber. In reply to a question, he admitted that sometimes the temperature varied greatly in a short time, but he did not find that this injured the bees. An inlet and outlet for fresh and foul air was provided.

John McEwen related his experience in wintering bees packed in outside cases or summer stands, and showed pretty conclusively the desirability of hav-

NO 3.—A. I. ROOT'S "COTTAGE IN THE WOODS" NEAR BRADENTOWN, FLA.

ing the bees sheltered from cold winds during the winter. In the spring, as soon as weather permitted, he filled the combs next to the sides of the hive with syrup (two of sugar to one of water). This resulted in the development of much early brood.

E. Bainard, the secretary, advocated stimulative feeding in late summer, where there is no honey-gathering by the bees after basswood. He had found that old queens would not lay, and young queens would lay; but in the latter case the bees would not rear brood from the eggs deposited.

SALT AND WATER.

Robt. Wallace, Jas. Armstrong, F. A. Gemmell, and John McEwen all strongly advocated giving bees regularly salt and water, a tablespoonful of salt to an imperial gallon of water.* Mr. McEwen stated that the day previous to the convention his bees had taken up 8 gallons of this water by means of feeders set out in the apiary by him.

D. Anguish and F. A. Gemmell strongly advocated flax chaff for packing for bees wintered in outer cases.

Quite a discussion took place in connection with foul brood, and the following resolution was passed unanimously: "That the Middlesex Beekeepers' Association would earnestly point out the need of a larger government grant and more inspectors to stamp out the disease known as foul brood."

R. F. Holtermann, in recognition of services rendered, was elected an honorary member of the association.

In connection with the above resolution the following announcement has appeared in the *Farmer's Advocate:* "At least as many foul-brood inspectors will be engaged this season at last, and probably one or two additional."

Brantford, Ont.

## BEES STORING HONEY BELOW THE BROOD.

### Do they Ever Do it if there is any Room Above?

BY J. E. HAND.

I am pleased to note that Dr. Miller, p. 1488, 1907, does not wish to go on record as saying that bees in Illinois are as likely to store their honey below the brood as above it. He even goes so far as to say that their general preference is to store it above the brood. However, I prefer to call it instinct. Now, if we admit that the general preference, habit, or instinct of bees is to store their honey above the brood, then we must look for some cause other than general preference, habit, or instinct that would lead or compel them to do right the reverse. I can think of but one thing that would cause bees to go counter to their natural instincts; and that is, an abnormal condition of the colony, which may be brought about in various ways. However, I am inclined to the belief that in Dr. Miller's case the cause was a played-out queen.

I would consider the act of storing and capping honey below the brood with plenty of room above it as *prima-faciæ* evidence of an abnormal condition of the colony, and for this reason a colony that would so store and cap honey would not be in condition to remove it quickly, since a vigorous queen is the all-important factor in this operation. I hardly think the doctor will care to say that those colonies were in a perfectly normal condition after what he has been saying of late about his superior strain of comb-honey makers, for it is needless to say that such colonies would be of no account for comb-honey production. However, if he will say that such was their condition, then I will cheerfully modify my statement to which our good friend takes exception.

Birmingham, Ohio.

*Let our United States friends remember that their standard measure is what we call *wine* measure; ours is *imperial*, which, of distilled water, weighs 10 lbs. I have been somewhat amused by a well-known United States bee-keeper's reference to the mistakes of Canadians as to the number of pounds of honey in a gallon. He stated that a Canadian scientist had given this as 10 lbs. I venture to say the scientist said *distilled water*, not honey. Again, the actual weight of well-ripened best-bodied honey, imperial gallon, our measure, will be found to be what Canadians state.

## THE NEST OF THE BALD-FACED HORNETS.

BY E. F. ATWATER.

The nest shown was about 18 inches long, and still being enlarged along the line where a careful search will show one of the inmates at work on the left-hand side. The insects are here called "bald-faced hornets," and the adjective *big* is also always applied. They are almost as large as small bumble-bees, and not fierce unless disturbed. Near by was another and smaller nest of later establishment.

NEST BUILT BY BALD-FACED HORNETS.
The nest was 18 inches long and still unfinished.

Meridian, Idaho.

# ARE BEES REFLEX MACHINES?

## Experimental Contribution to the Natural History of the Honey-bee by H. v. Buttel-Reepen, Ph. D. Translated by Mary H. Geisler.

*Continued from April 1st issue.*

### MEMORY OF PLACE IN BEES.

> In general, we should not set up a new unknown force to explain natural phenomena until it has been proven that they can not be explained by the known forces.—*Aug. Weismann,* Keimplasma, p. 539.

According to Bethe, bees are "led back to the hive by a force entirely unknown to us. This force does not adhere to the hive itself, and it does not lead bees back to the hive itself, but to the place in space which the hive usually occupies. It does not act at boundless distances. It is an old experience of bee-keepers that they can take a colony to another stand without fearing that the bees will return to the old place, if the new spot is only more than six kilometers from the old. It follows, then, that this force acts at most at a distance of six kilometers, since the impulse to return to the hive is the strongest of all impulses in bees. But I believe that the zone of action of the force is not a circle with a radius of six kilometers, but of only between three and four kilometers. If the circle had had a radius of six kilometers, then the bees of the transposed hive would be back into the circle of action if they got more than half that distance near the old position in foraging, and would have to return to the old place. But this only happens if the old position is less than six kilometers away from the new. We must, therefore, accept something near three kilometers as the boundary for this circle of action for this force." (Bethe, l. c., p. 89.)[57]

I believe that in the foregoing, and likewise in many other of his observations, Bethe furnishes such excellent proof of the existence of memory for location that one can hardly wish anything better. But Bethe supposes "a force unknown to us," with which we do not know what to do, which offers support for every investigation. Under this head I must depend more strictly upon Bethe's work in order at the same time to point out the errors in the chapter, "How do Bees Find the Hive?" (Bethe, l. c., p. 72.)

#### THE "PATHS" OF BEES AND THEIR DIRECTION.

If bee-hives are placed on an open heath, with no elevations such as trees or bushes, the particular kind of flight toward and away from the hive may be studied, undisturbed by local conditions. In August, 1898, I had opportunity to prove this condition on a moor in the neighborhood of Oldenburg, corroborating entirely my earlier experiences

The colonies were established on the moor by the bee-keeper shortly before the buckwheat-flow. The hive-entrances faced the east. On the first day the flight was weak, for as yet there was nothing to gather. The bees flew out irregularly in smaller or larger circles in all directions. There was nothing to be seen yet of "a path."[58] Great buckwheat-

[57] The "unknown force" must act at much greater distances under certain conditions, for other observations show that bees have flown five, six, or even over seven kilometers further under extraordinary circumstances. (See Bienenzeitung, X., No. 14; ditto III., No. 9, Dzierzon; Le Rucher, Amiens, 1876, IV., p. 30). In these cases there was no forage near at hand. According to Dzierzon, some bees under these circumstances scented a large "hundred-acre" rape-seed field which lay far outside their usual circle of flight. Roth, the leader of the Baden school for bee-keepers, in Durlach, observed that some of his bees returned in thirty minutes with full loads from a buckwheat-field six kilometers away. Granting that Roth's bees flew to the buckwheat-field from the south, there is no reason for thinking that bees from an apiary at the same distance toward the north had not hastened to this same nectar supply. Now if, for experiment, a colony should be taken from the southern apiary to the northern one, then they fly south to the buckwheat-field, and there, coming into the field of action, would again return to the southern apiary. The "unknown force" would reach twelve kilometers in this very possible case. If it be asked from what distance bees can find their way back, the answer can not be made in kilometer measurements, for it depends upon whether the bees in their flight of orientation (see the same) or in their search for food have flown to greater or less distances, upon the definite direction of the forage and the general orientation.

[58] "It is well known that, in front of the entrance to a strong colony, there is always a long dark cloud formed by the bees constantly going back and forth." (Bethe, p. 75.) This is Bethe's "bee-path."

fields stretched toward the north as well as to the south. When the flowers opened, the mode of flight changed. Part of the bees flew from a point close to the entrance, sharply to the left (north) and another part sharply to the right (south). In consequence of this the paths were very short, the terminations (the hives stood close to each other) coming together in a common wave.[59] It is apparent from this that the position of the pasture determines the direction of the flight in and out.

When, later, the buckwheat-fields ceased blooming and the moor was in full bloom, the same short, though perhaps a little lengthened, paths were seen; but the common wave was higher and apparently somewhat larger, from the great numbers hastening in from all sides.

"Long paths" of bees, which Bethe describes as normal, are found chiefly only in the case of bees in gardens where trees, houses, etc., modify the flight. The view is wrong (Bethe p. 80), that "it is a well-known fact to bee-masters that the steepness of bee-paths varies with the weather."[60] It is an error further, that "bee-paths always go out from the hive in the same direction with slight fluctuation. This is almost always east, southeast, or south. Not only for this reason, but also because bees need sun to be industrious, the bee-keepers place their hives toward the south or east." (Bethe, p. 81.) This last assertion is erroneous.[61]

It is clear from the above, even if Bethe had not stated it himself exactly, that there was nothing in the north for his bees to gather, since they never flew north (see Bethe's following conclusions). In that case the town (Strassburg) must spread out northward from the place of Bethe's investigations. Bethe supposes that the town remained "unknown" to the bees.

"The garden of the Physiological Institute in which my bee-hives stand lies close to the town wall. The wall is covered with green, and behind it stretch great blooming meadows which teem with bees. On the other side of the Institute lies the city. There are very few and very small growing plants in the city; and, in spite of many searches, I have only once seen bees in the inner part of the town, on two isolated sunflowers. At all events it must be admitted that only a few isolated individuals have been in the interior of the city at any time in their lives, particularly as my bees always fly toward the south to the meadows." (Bethe, p. 86.)

I must consider these assertions also as erroneous and not conclusive, for the handler of sugar wares, honey-sellers, gingerbread bakeries, and housewives who leave sweet preserves or jars of honey in the open windows well know they have to count upon much unpleasantness from visiting bees.[62] There is not always something to be gathered from the meadows (pause in the honey-flow, the cutting of the field); and, besides that, bees in their first flight, which is devoted to orientation, orient themselves not only toward the side of the pasture but naturally on all sides.

Bethe then let bees fly in the streets of the city, only within the short distance of 350, 400, and 650 meters from the hive, in spite of the "unknown force" which acts,

[59] I noticed that bees of one and the same hive followed both directions.

[60] I admit that the French boy learns in his lesson:

"Quand les abeilles volent en haut
Nous aurons bientôt de l'eau."

But this probably national idea is just as wrong as the one that a hard winter is to be expected if bees propolize entrances strongly. In general, many statements to be found in the literature on bee management should be taken with prudence. Safe judgments can be made only after a personal experience of many years.

[61] Dathe, Lehrbuch der Bienenzucht, 5 Aufl., p. 34, and following, Bensheim, 1892: Berlepsch-Lehzen, "Bienenzucht," Berlin, 1899, p. 28, and following; "Bienenzeitung," 2 Ausg., Nördlingen, 1861-'62, 2 Bd., p. 3 and following; v. Berlepsch, "Die Biene und die Bienenzucht," Mühlhausen, 1860, p. 219 and following; Dzierzon, Rationelle Bienenzucht, Brieg, 1861, p. 36, etc.

[62] Because of this kind of trouble, bees are forbidden in the precincts of the city of Paris. The Bw. Centralblatt, No. 19, 1899, announces: "In a small city a broker had stored comb from colonies with foul brood in a room accessible to bees. The following year almost all the apiaries of the city were infected," etc. During the dearth of nectar, specifically in Bethe's case, the flying in the town where there was always something at which to nibble might have been more vigorous than to the fields where nothing could be obtained. Moreover, Bethe himself furnishes a good reason that bees flew extraordinarily accurately through the city, for he asserts that he "had seen bees inside the city upon two isolated sunflowers." How very inquiring the bees must have been to find a single flower! We can be very sure that innumerable bees (even if not seen by Bethe) followed the same instinct which drew these sunflower visitors into the city, for there are no recluses among bees, none which separate themselves from the masses to follow a way of their own, and all possess the same kind of instincts A single linden-tree in bloom in the city is enough to attract hundreds of thousands of bees.

according to Bethe, within a distance of three kilometers. Because, when let go, these bees found their way home just as well as those from the meadow, he decides that "there can be no doubt at all that bees find their way back to the hive, *not* by means of memory pictures" (Bethe, p. 89).

I cannot find in the foregoing the slightest foundation for this view of Bethe's. If he wishes to disprove the investigations of Romanes,[63] then I think the attempt is unsuccessful, for Bethe leaves to us the proving that the city has remained actually "unknown" to the bees.[64]

But how is the mysterious behavior in the streets explained? We shall let Bethe speak for himself: "All bees, if let fly, go upward in a corkscrew line, then suddenly take a direction and fly off in a straight line. This happens when bees are let fly in the city streets almost always before they have reached the levels of the house roofs. It often happens at a height of four to six meters above the street level, therefore generally before they can have acquired a view of the neighborhood. Now, almost without exception, they take the direction of the Institute, where the hives are."

Before I give the explanation for this, other parts of Bethe's account continue: "Light is the incentive to flight in these diurnal animals" (Bethe, p. 83); further, "Light regulates flight."

I remember, too, in Herm. Müller's investigations that he could carry a bee in a drinking-glass, open beneath, the length of the garden without the bee flying out, for it constantly pressed to the top of the glass toward the light.[65]

I slipped a bee into a reagent glass and put it upon the window-sill so that the bottom of the glass was toward the window. For eight hours the bee strove inside the glass in vain efforts to reach the light. Then it died, although it would have been easy to crawl out of the open tube and fly out of the open window.

Now, if we remember that the city lies to the north of the seat of Bethe's investigations, we shall see that the sun must be in the direction of the Institute, and the bees were let fly in "quiet, sunny weather" (Bethe, p. 87). In the darker streets, perhaps unknown to them, they tried to orient themselves by mounting in circles, just as a carrier pigeon does.[66] Then they fly instinctively toward the bright source of light (just as in a room they fly unfailingly toward the bright window) until they became oriented in familiar regions. "Light regulates flight" (Bethe, p. 83).

I, therefore, can not consider the "unknown force" and the conclusions based on it as capable of proof.

I have held to Bethe's assertions with regard to these directions. From them I understand that on one side of the Institute toward the south are the meadows; and on the other (therefore toward the north) is the city. Possibly Bethe did not liberate the bees just in the center of the city but toward the edge, so that the Institute was shifted from its southern position a little toward the west or east. Further investigations might be necessary, perhaps, to prove that these bees did not return to the hive not through the "unknown force."

We learn from Bethe (l. c., p. 87) that eight marked bees were let fly in the city

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[63] Romanes, Nature, 1885, Vol. 32, p. 630, Homing Faculties of Hymenoptera.

[64] That Bethe's idea that bees had not been flying in the city is not at all convincing, follows from something written by the editor of "Elsass-Lothring. Bienenzüchters," Karl Zwilling, which reached me subsequently. In my publication in the "Biologischen Centralblatt" the same is given, therefore, in a later passage. I quote the following: "* * * Outside of Strassburg there are many apiaries close to the wall, the bees of which never think of flying into the city except in times when there is no forage. Then they enter the candy factory of Mr. Pale, Tiergarten Strasse, and annoy the workers as well as partake of the sweets. Even in the month of December, 1899, in the warm sunshine I observed bees flying in the middle of the city on the Kleberplatz, where hundreds of pots of flowers were displayed for sale. There they gathered honey and pollen. Every year some swarms fly into Strassburg and hang on the chestnut, linden, oak, and locust trees found in many parts of the city, and once a swarm hung on the showcases of a glove-store near the cathedral. When the trees bloom, bees fly about them vigorously. In the interior of the city there are beautiful rows of chestnuts along the Ill, rows of lindens around the Kleberplatz, etc., all of which are sought out by the bees when they are in bloom. The honey-venders and those who deal in sugar wares are not molested if they keep their wares covered. As I live in the neighborhood of Strassburg (ten minutes by rail), and have been President of the Bienenverein there for thirty years, I know the conditions exactly."

[65] Herm. Müller, Versuche über die Farbenliebhaberei der Honigbiene, Kosmos, Jahrg. 6, p. 276, 1882.

[66] H. E. Ziegler, Die Geschwindigkeit der Brieftauben, Zoolog. Jahrb., X. Bd., 1897, pp. 99, 278.

on a quiet sunny day at distances of 350, 400, and 650 meters from the hive. The result is as follows, from an observation of twelve minutes at the hive entrance:

| Distance of 350 meters. | | Distance of 400 meters. | | Distance of 650 meters. | |
|---|---|---|---|---|---|
| 1. | 1½ min. | 1. | 5 min. | 1. | 4¾ min. |
| 2. | 2¼ min. | 2. | 7 min. | 2. | 5¼ min. |
| 3. | 2¼ min. | 3, 4. | 10 min. | 3. | 5¼ min. |
| 4. | 2¼ min. | 5-8. | ? min. | 4. | 7½ min. |
| 5. | 2¾ min. | | | 5. | 9 min. |
| 6. | 3½ min. | | | 6, 7. | 10½ min. |
| | | | | 8. | ? min. |

This time experiment alone proves that there can be no explanation for an "unknown force" which "draws to the hive like a magnet;" for if it really existed these great differences in time would be entirely inexplicable. Since there was no wind, and the sun was shining, there were no hindrances to flight, and the bees ought to have reached the hive-entrance in the shortest period and at the same time. Further, supposing the existence of an unknown force which draws bees back to the hive directly, the length of time for flight is in itself too long because bees fly very quickly. A carrier pigeon would undoubtedly cover the same distances in question under the same favorable conditions in eighteen, twenty-four, and thirty-nine seconds, if we use as proof the calculations of Ziegler on the swiftness of carrier pigeons.[67] Their flight is found to be often as swift as 1000 meters per minute. If we now take the flight of bees to be half that, 500 meters per minute (a velocity which has been directly observed by Cowan[68]) then the "unknown force" should have led the bees back in thirty-six, forty-eight, and seventy-eight seconds. If we double the time because the bees in the experiment were carrying honey,[69] the time would be normally about one minute twelve seconds, one minute thirty-six seconds, and two minutes thirty-six seconds. Comparing this with Bethe's table we find a striking difference which is unintelligible if we accept the idea of the "unknown force," but this difference is easily explained if we consider that the bees had to orient themselves with their eyes, and that they at first made errors in direction so that they found the hive singly after three and one-half, ten, and ten and one-half minutes had elapsed.

Of nineteen bees which were let fly from a courtyard into the street, Bethe observed that seventeen of them ("at about half the height of the houses," "before they flew as high as the roof") "took the exact direction" for the hives at the Institute. That these bees probably followed only light stimuli in taking this direction I have said before, for that they really did not return directly to the hive is shown by the above table. If all the bees, "almost without exception," which were set free in an "unknown neighborhood" under the conditions cited, took "exactly the right direction" they would have come in very much more quickly.[70] I would here refer further to what I incidentally work out from the box experiment (see p. 25).

The "unknown force" does not lead the bees back to the hive, but, Bethe suggests, to the place where the hive stands or has usually stood. Is not this memory of location? What does Bethe understand by the "unknown force"? We receive no explanation. He thinks it is a power lying outside the bees, "which draws them to this place in space as a magnet draws steel" (Bethe, p. 93). He has made no investigations to find out whether this unknown force is connected at all with any organ of the bee.

But we shall attempt to get nearer to this mysterious power.

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[67] H. E. Ziegler, Die Geschwindigkeit der Brieftauben, Zoolog. Jahrb., X. Bd., 1897.

[68] Thos. Wm. Cowan, The Honey-bee, its Natural History, Anatomy, and Physiology. London, 1890; German edition, Braunschweig, 1891.

[69] "One can not take any bees at all for this experiment; but such as come into the hive laden must be chosen, for otherwise we have no guarantee that the bees will come home by the shortest way and not go foraging first." Bethe, l. c., p. 87.

[70] The assertion that bees would fly directly to the hive, but that on the way they alighted at any time, then flew again in the direct line, is in contradiction to the habits of bees. They fly many kilometers without resting.

DISAPPEARANCE OF THE MEMORY FOR LOCATION THROUGH NARCOTIZATION.

If bees are deafened with chloroform, ether, saltpeter, puff-ball, etc., the memory for location entirely disappears. After waking from the stupor they may be taken from the hive and they will not fly back to the place in space in which they are "accustomed to find it." They no longer recognize their own home nor the place where it stands; they have forgotten everything previously known. But an animal that can forget must have possessed something to remember. The memory pictures are wiped away. We see that the "unknown force" is identical with the memory for location which builds up memory pictures.[71]

It is necessary to mention that bees which have been stupefied become entirely normal again—that is, they orient themselves with regard to their new home, and gather new memory pictures by which they find once more the places for nectar and pollen as well as their new hive.

Bees, therefore, have capacity for learning—a fact which Bethe disputes.

Let us look more closely at the quintessence of Bethe's investigations. Upon pages 81 and 89 he formulates the view about the "unknown force," the counterpart of which is stated in this chapter (see p. 19). On page 94 we find further conclusions in the following words: "Yet I must repeat: Bees follow a force which is entirely unknown to us, and which causes them to return to the place in space from which they flew. This place is usually the hive, but it need not necessarily be. The influence of this force reaches over a circle of only a few kilometers."

But here we have no "repetition" of what has been said, but something that, on closer examination, shows statements which are contradictory among themselves, and which contradict earlier assertions, if one takes into consideration the observations which Bethe uses in formulating this conclusion (Bethe, p. 93). We shall now look somewhat more closely at these observations.

THE BOX EXPERIMENT.

If the unknown force acts at a distance around the hive of only three or four kilometers, as Bethe asserts, then all the bees of this colony which were set free within this circle must return unresistingly to the place from which they flew which "draws like a magnet." But this is not the case, as Bethe himself proves in the experiment given on page 93. He says: "In my first experiment with letting bees fly from other places I observed the following: I placed the box, in which the bees were transported, on one of the large pieces of sandstone lying around in a stone-cutter's yard and opened the lid. The bees all flew out; and most of them, after a few circles in the air, went in the direction of the Institute. Two bees mounted to a height of about three meters, made a few circles of four or five meters in diameter, and then alighted on the box. I drove them away into the air again. They flew in large circles around it, and then again alighted on the box. Now I took the box away and put it on another stone, having driven the bees into the air once more. Both bees flew so high that I could no longer see them; but a few seconds later they sank again and gradually flew around the place where the box had stood."

We see, then, that a few bees were influenced by the unknown force, but others were not. This changing condition Bethe can not and does not attempt to explain.

That the bees alighted on the stone where the box had been (which fact Bethe tells with astonishment) is very easily understood, and furnishes further proof of the excellent sense of locality in bees, for their admirable orientation with their eyes. Bethe's objection. "if they had been influenced by chemical or light reaction, then they would have flown to the stone only two meters distant, and easily visible, on which the box was placed. But they flew back to the place from which they had flown," signifies anthropomorphism brought in in its highest potentiality. It is not possible to conclude for bees that they would look for a box two meters away, which before had stood in the other place. Their

[71] I might ask our ant-investigators to take up similar experiments with ants. It would be of great interest to know whether a similar condition can be demonstrated.

memory of locality leads them with infallible certainty back to the place they had impressed upon themselves by the circling orientation.

But why did these bees not fly back to the Institute if they possess such an infallible sense of locality? For the simple reason that they were young bees which had not yet developed their orientation by flying out, or perhaps old ones that had not taken their orientation flight till to this spot. No one who is thoroughly familiar with the nature of bees can have the slightest doubt about it.[72]

But because of these experiments and others, Bethe was forced to take this position in formulating his final conclusions: "The unknown force causes the bees to return to the place from which they flew," and, therefore, to modify his earlier declaration that they return "to the place in space where they are accustomed to finding the hive." The box experiment can not explain both the habitual return to a dwelling and a single return to a place. The return to the place from which they flew takes place in those bees which returned to the box and not in those which did not "return to the place from which they flew" but turned toward the Institute. I must confess that I find no logic in these contradictory statements.

Yet hear Bethe further: "I often repeated these experiments later. The further away the bees were taken from the hive, the fewer returned to it, the more flew back to the place from which they had flown.[73] I chose open fields for these experiments where there were no large objects by which the bees might orient themselves optically. The box was taken up immediately after the bees had flown out. I marked the place in the grass accurately and stepped back a few steps. The bees returned with accuracy, and made scarcely a mistake of more than a few decimeters. Many trod exactly upon the spot. Often they stayed in the air for a minute, then returned. Once I noticed a bee alight on some salvia in the meadow to take nectar there; then it flew away again and then returned to the place from which it had flown. It was most startling to me when I held the box open in the air until the bees had flown away and then stepped aside a few steps. Four or six bees, after circling in the air, returned to the very spot where I had held the box, making small circles at about the height of a man."

I can only remark here that, even if there were not objects in the meadow optically discernible to human eyes by which they could orient themselves, there may have been innumerable landmarks for bees. No one will doubt this who knows anything about the wonderful certainty (far surpassing human ability) with which bees in swift flight pick out their own homes among hundreds of bee-hives placed close together and of bewildering similarity. And if Bethe could manage without marking accurately the place "in the air" (which I must say to my shame I did not succeed in doing in my control experiments, in spite of eyes which are sharper than ordinary), then the bees might have been able to do it too. In order to give the bees the least possible clue (the height of a man) I did not stand but lay down and noted approximately the large circles of searching bees in the air in the direction of the place from which they had flown. I can, therefore, find no support in the experiment of Bethe for an unintelligible "unknown force." Moreover, a few other control experiments gave such interesting and divergent results that I must enlarge further upon them.

I let a few bees fly from a box placed on the short grass of a wide meadow, approximately five hundred meters from the apiary. I quickly stepped a few paces to one side, greatly changing my position, as I did also in the following experiments. The bees

[72] I might point out in this connection that we see an analogous condition in carrier pigeons. In Prof. H. E. Ziegler's writing already cited, we find the following abstract, Ueber die Orientierung der Brieftauben: "After all I have read and heard of the flight of carrier pigeons, I am of the opinion that their orientation depends upon memory alone, and that it is unnecessary to ascribe it to a mysterious sense of direction." If pigeons are taken away to a place where they no longer have any point of orientation they take up various directions and some make mistakes. The fanciers' society will not undertake to send out pigeons from a distance for which they are unprepared, for in that way there is constantly a greater or less loss of good pigeons. "The pigeon-fancier drills his pigeons in established routes, and thus takes them by degrees to places further away, always in one direction." Also, pigeons can orient themselves in fog and darkness just as little as bees can.

[73] This statement coincides excellently with the foregoing statements against the existence of an unknown force. The logical consequence from this assertion is that the "unknown force" compels bees to fly in two different directions—to the hive and to the box; the one here and the other there. This, to be sure, can not be brought into harmony with what Bethe before considered the influence of the unknown force, nor with the assertion that the "impulse to return to the hive is the strongest of all," etc.

mounted slowly in widening circles, but keeping very low on the whole, at perhaps twice the height of a man. After a minute one bee returned to the box; in one and a half minutes, a second came. Then I drove both these off and took the box away. During the next minute none returned to the place where the box had been, but I saw a number zealously seeking, flying close to the grass in large circles, then flying a little higher. Suddenly, for some unknown reason, numerous bees in a second box under my coat buzzed loudly, and almost immediately the searching bees buzzed around me (I was standing in the direction of the wind) so strikingly that my companions beside me exclaimed, "They have heard the other bees." Although I now replaced the box to its former position it remained disregarded; but whenever we went in the near neighborhood the bees followed us, and some alighted on my shoulders, hat, and coat. When I went further away my companions were surrounded, although they had no bees with them. It is noteworthy that the bees in the second box belonged to another colony.

I shall now describe the second experiment. The other box was held up high; the inmates about thirty or forty in number circled in a small radius for a long time, then gradually made larger circles. Some worked in a more up-and-down fashion, close to the box, continually turning the head toward it, just as in the first orientation flight from the hive, about which I shall speak more in detail further on. About half a minute after I took the box and drew back quickly, trying to impress accurately on my mind the spot at the height where the box had been. Two bees appeared in a few seconds, but in a place a little to one side; and then, after making large circles, disappeared again. The chief thing to be seen was the irregular search which they all carried on together after a few minutes in ever narrowing circles,[74] apparently flying close over the ground about two meters from the place where I had stood. The bees were no longer seeking the box, but their home, the entrance of which (according to my estimate) was just at the height above the ground of the circles which they were making. I can give no other explanation for this singular phenomenon. After the bees again wandered aimlessly for some time, flying around us part of the time as described earlier, they followed us homeward for about twenty paces, then turned back. That proportionately few flew back to the apiary is explained by the fact that the bees shortly before had come from the moor, and in the cool autumn weather could hardly have flown out, so that an orientation from the apiary was not yet possible. The day of the experiment was sunny, with a moderate southwest wind.

The striking occurrence, that my companions and I were so thickly surrounded, can be interpreted in so many ways that to explain it would here lead us too far.

In the foregoing I see many proofs for the existence of memory for locality; but all these box experiments are untrustworthy, since the investigations go on under entirely abnormal conditions for the bees, and the results do not harmonize with those gained from the apiary. It seems very risky to me, therefore, to draw conclusions from them for normal conditions, since we may easily be deceived. The time of year and the weather, as well as the management of the bees, will greatly modify the results of this kind of experiments. If it is recognized how easily bees are influenced by various stimuli (e. g., shaking, cooling, breathing on them, confinement, feeding, strange strong odors, etc.), I say influenced, diverted, "confused," "subdued," "goaded on," or "calmed," then it will be realized how difficult is the interpretation of such experiments and how cautiously one must work on them.

If one ask Bethe why the unknown force acts at a distance of only three or four kilometers, we receive no explanation from him: he does not even attempt to give one. The explanation, however, is very simple. The mysterious force acts within the space in which the bees have previously taken their flights of orientation, and acts only as far as they have flown at any time and gathered memory pictures. The proofs for this are easy to bring forward. They show on the other hand that this unknown force so designated is identical with memory of location.

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[74] One sees from this that bees pay attention to each other, since they keep together and exhibit the same behavior. Imitation instinct? Sense of hearing?

1. If young bees able to fly (brood-nurses), which have not yet had their flight of orientation, are let fly not far from the apiary, none find their way back to the hive.[75] It is also significant that first swarms, which are almost entirely made up of old bees, in the loss of the queen quickly re-enter the mother colony, while an after-swarm, for the most part composed of young bees, buzzes about for a long time, finally entering strange colonies.

2. If old bees are let fly at a much greater distance they all find their way back.

3. If a colony is brought from a place more than seven kilometers away, and the old bees are let fly only thirty or forty meters from their hive before they have been able to make their flight of orientation, none find their way back into the hive, supposing that (in such a short distance) houses or trees intervene between it and the place from which they were set free.

4. I had two colonies placed in the garden of the Zoological Institute in Jena for the purpose of further investigation. At the end of the summer semester of 1899 they were taken to the apiary of a bee-keeper about two thousand meters distant. Since the colonies were not stupefied, it was presumed that many of the old flight bees would return to the Institute apiary, and, for the refuge of these homeless ones, I placed a hive with some empty frames exactly where their home had stood. Many hundreds returned, which, in spite of complete freedom of flight, loitered around the empty hive uneasily for two days. They were afterward chloroformed, and preserved in formaline, for purposes of demonstration. Their memory of locality had led them back.

Naturally and easily, the varied conduct of bees in these four cases is explained if we accept the theory of an orientation with the eyes through memory pictures, while the unknown force entangles us in contradictions and inextricable mysteries.[76]

It seems remarkable that Bethe attempts throughout to explain "how bees find their way home," but never how they find their way away from the hive. With regard to their finding their way back to a place outside of the hive, he says only the following (Bethe, l. c., p. 90): "The place where a honey supply has been found is again sought, I think, not because of memory of locality, but because of a reaction of the same force unknown to us, etc." Bethe here refers to the observations of Lubbock (l. c.) and Forel[77] who put down vessels containing honey, and observed that marked bees always returned to them.

Because of these assertions, Bethe's theory is still more complicated, and more difficult to understand. We must not conclude, therefore, that "bees follow a force which causes them to return to the place in space from which they flew, which place is generally, but not necessarily, the hive," for in an acceptance of this opinion the bees would have to swing to and fro like a pendulum forced always between their dwelling and the honey supply, whether there is any honey there or not. If they have flown from the hive or from the place where the honey-receptacle was, the unknown force "impels" them to return to both places.[78]

[75] As is well known, young bees fly for the first time about ten to fourteen days after they emerge. During the first two weeks their existence is that of "house bees," "nurses," who perform all the house-keeping and feed the larvæ. This is, I might say, the firmly established management, from which there is no deviation. Yet we can modify this activity substantially. For example, if we form a colony of bees which have just emerged, and give it a fertile queen, brood, and frames of honey, then we would see that part of the young bees become "field bees" in five or six days, thus taking up the outside work considerably earlier, even if everything is present in the hive which is necessary for the existence of the colony.

[76] Bethe refers at different times to Fabre's investigations on Chalicodoma (Fabre, Souvenirs entomologiques: Paris, 1879; Fabre, Nouveaux souvenirs entomol.: Paris, 1882). Yet as early as 1895 Weismann (Weismann, Wie sehen die Insekten? Deutsche Rundschau, 1895, pp. 434-452), had overthrown, in a very interesting paper, Fabre's view concerning the sense of direction. Weismann comes to the following conclusions: "The only correct solution of the enigma of path-finding by Chalicodoma is that the insects find their way back with their eyes."

[77] Forel, Recueil zoologique Suisse, 1 Série, T. 4, 1886-88.

[78] If an objection were here to be made, that very probably bees are compelled by the unknown force to return to the place where honey or some stimulus is placed, just as long as the stimulus is present, and that the action of the unknown force could cease with the disappearance of the stimulus, such an exception might appear unauthorized for the following reasons: We should have two entirely different kinds of unknown forces according to this view, since the one leading the bees back to the hive, in fact, forces them to return to the place where the hive stands or no longer stands. Here the stimulus, therefore, is acting in spite of the fact that the means of stimulation have been removed. Then we should have a second force which vanishes with the disappearance of the means of stimulation. Something very different from Bethe's definition, which is not consistent, and decidedly not at all conclusive, occurs, for the observation may be made frequently that food or meal remains unnoticed, and is not

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### COMBS BUILT CROSSWISE IN SECTIONS, EVEN WHERE STARTERS WERE USED.

What causes my bees to build crosswise of the sections, and every way, with one inch of foundation in the bottom and three inches in the top, and fastened at the bottom and top only?

Would it do to put in full sheets and fasten at the top only, and let it hang down loose?

Hastings, Pa., June 9. V. A. H.

[If you put in foundation starters at top and bottom we are at a loss to understand why the bees built the combs crosswise unless the fastening of the starters was so poorly done that they fell down and lay crosswise, with the result that the combs were built from them. Your bottom starters should not be more than half an inch high. This may be where a part of your trouble is.

You do not say any thing about using separators; but most producers consider it an advantage to use them—not because they prevent the building of combs crosswise, but because they prevent bulging beyond the edge of the sections. Putting in full sheets of foundation, as suggested, might help the matter somewhat.

If any of our readers have experienced similar difficulty, or if any one else knows what is the cause of our correspondent's trouble, we should be glad to have him report.—ED.]

### AN ABSCONDING SWARM FROM A COLONY WITH A CLIPPED QUEEN.

I had a peculiar experience with a swarm of bees to-day. They came off with a clipped queen. I caught and caged the queen, and the bees left without settling. I looked through the parent hive and failed to find any cell from which a young queen had hatched which might have left with them. E. H. VINCENT.

Feyil, Okla., May 9.

[We have had reports before of a swarm absconding when it had a clipped queen in the hive; but all cases of this kind can be accounted for by a stray virgin which by mistake went into the hive of the clipped queen, or which may have hatched from some obscure cell. We do not ourselves hold the theory that bees will abscond without any thing in the nature of a queen. A swarm from a clipped-queen hive will cluster; and on breaking the cluster, and taking wing, may unite with another swarm having a virgin. If they were disposed to go for parts unknown they would leave, giving their owner the impression that they went off without any thing.—ED.]

### CAPPING-MELTERS USED YEARS AGO.

After reading J. Y. Peterson's article on melting cappings, page 559, May 1, I will say that I had some experience in that line years ago. I think it was in 1886 or '7 when we had a Swiss or Gerster wax-extractor. We filled the water-chamber underneath with water, and the top part with wax or cappings, and the wax and honey all ran out together. It was made to rest on top of the stove. We simply arranged the thing to stand on a two-burner oil-stove, and rigged up a lard-can as a sort of funnel so the cappings dropped right through into the extractor. It worked all right, only sometimes the snout would get clogged with cold wax so that we had to let it all cool together. At such times I thought it spoiled the flavor of the honey. I don't see why one of them could not be made to work all right, and no odds to anybody in regard to royalties. There were plenty of them used years ago. Some of the boys did not like the heat in the extracting-room. EUGENE MANNING.

Trumansburg, N. Y., May 8.

[There is no reason in the world why the old-fashioned Swiss wax-extractor could not have been used in the manner described; but it would have the objection that hot steam would be enveloping the one doing the uncapping. We are under the impression that the German wax-press has been used in the same way. If any one has so used it, let him report.

This press, according to directions, is supposed to be used for holding the cappings until the basket is full. Heat is then applied to the bottom without rehandling the cappings, when the honey and the wax run out into the one receptacle. On cooling, the cake of wax may be lifted off the honey.

It would not require a great stretch of inventive genius to melt the cappings as fast as they fall into the basket; but our opinion is, without having tried it, that the work would be very unpleasant, owing to the aforesaid hot steam.—ED.]

### THE DR. MILLER SPLINTS NOT SATISFACTORY.

About two weeks ago I filled up a Danzenbaker hive with full sheets of foundation, putting Miller splints on them. I put this hive under my best swarm of bees, and to-day I looked them over. I found the bees had begun on the south side of the hive and cut out all the splints, leaving the foundation hanging in long strips. They had only begun on the tenth or north-side frame; but their first work was to cut out the splints, starting at the top. I wanted to send you a photograph of one frame so you could see how it looked, but I had no film in my camera. I have had a lot of trouble with the full sheets of foundation in having it hang flat; and when I read Dr. Miller's article on splints it struck me as a good thing, and I had great expectations when I put the frames in the hive-body, as the foundation looked like so many boards. If Dr. M. can tell me wherein the trouble lies I wish he would do so. I am a novice with two colonies; and when I said above I had a lot of trouble, it was in only a comparative sense. I see Mr. Pouder, on page 699, tells how he gets frames filled without wire or splints; but it would take me a long time to get ten frames filled. I am going to try his way as soon as I open a hive. HERVEY B. JONES.

Summit, N. J.

[If there were no honey coming in at the time you put in the foundation, or if the wood splints were too large, the bees probably would do just what they did do—reject the artificial stays given them. It is our opinion, without having made a comparative test, that the bees would not have

cut the foundation in strips if it had been stayed in the usual manner with wires. Years ago, when we used wire and a folded tin bar (the latter about the size of a wood splint) the bees would sometimes gnaw away the wax around the bar when they would not cut away the foundation around the wires used in the same frame. But this gnawing around the bar occurred only when honey was not coming in, and hence we deduce the cause of your trouble. If Dr. Miller can add any light on the difficulty we shall be pleased to have him do so.—ED.]

A GOOD PLAN FOR WATERING BEES.

I have tried a great many different plans, and I believe I have finally found one that overcomes all loss of bees, and at the same time protects them from the wind, as many bees are blown into the water, and so chilled that they are unable to crawl out, and finally perish. Try it for summer or winter. It's all right for cold spring or winter.

Dig a hole in the ground any size you may think you will need. The one I use is about 2×3 feet and about 10 inches deep, and the shape of an old-fashioned wooden butter-bowl. Make the side at or near the top very sloping; pound the bottom and sides as solid as you can; cement this all over the bottom and sides so it will be water-tight, then fill to a little above the level of the ground with brickbats, after which put in the water. At any time you wish to clean the basin out, just take a bucket of water and souse it into the basin, and all dirt or leaves will float out as the water overflows. I have one end of the basin about an inch lower than the other; the bees go down in among the bats, and are entirely protected, and suck the water from the porous brick without the loss of a single bee. C. B. PALMER.

Bradshaw, Neb., June 8.

HONEY-DEW ON BOX-ELDER AND PEACH LEAVES.

I should like to ask you a question regarding the honey-dew. My bees have been working on the box-elder and peach leaves. They seem to work almost any place on the box-elder leaves. There are little sparkling drops on the leaves, but on the peach leaves they seem to work in the cups of the leaf right next to the stem. They work on them from sunrise till ten o'clock, then from four till dark. I don't know whether it is a honey-dew or not. C. W. BARR.

Florence, Kan., April 22.

[This appears to be a pure plant exudation, and not a secretion from insects. Most honey-dews, so called, are of the latter kind. But there are a few which are the product of the leaves or leaf-stems—sometimes saccharine and sometimes of a gummy nature.—ED.]

COMPELLED TO ABANDON SECTION-HOLDERS FOR T SUPERS ON ACCOUNT OF BEE-GLUE.

I suppose you think it strange for an old bee-keeper to change from section-holders to T tins; but here the bees glue every thing so tight that I have had a great deal of trouble to remove the sections from section-holders and separators; and as I have only 35 colonies at present, and sell all my honey at my door (yes, and more), I have concluded to run this season without section-holders and separators, so you see the need of 4½×4½×1 7/16 sections to use in the 4¼ super with T tins; and by trial I find the T tins to be by far the best; for here, as the glue is so very tenacious and so plentiful, our honey is, as a general thing, not fine, but sells readily at 12½ cts., either chunk section or extracted. S. D. RUTHERFORD.

Hot Springs, Va., May 6.

IS THE GRADING OF QUEENS INCONSISTENT?

Why can a queen-breeder have such a variety of queens, rated with a graduating price list? Is not the whole matter of grading queens very inconsistent? RALPH P. FISHER.

Great Meadows, N. J.

[We see no reason why there should not be a variety of different grades of queens. Starting with the untested we have the select and the ordinary run of them. This is multiplied by the different races. In addition to the tested we have "extra select," "select," and "plain tested," the latter grade comprising the common run. A queen may be actually select tested, but not yet a breeder; that is, she may not be able to reproduce herself in queens, either in color or characteristics. This involves a couple more grades — ordinary breeder, select breeder, and extra-select breeder. A large honey-producer could well afford to pay for a select breeder. The queen-breeder will, of course, want the very best that money will buy. The small producer might be content with an ordinary breeder; then another class does not care for a breeding queen, but wants something extra select for color, gentleness, and honey-gathering qualities. She may be a good breeder, but it would probably take a year before that fact could be fully shown. If, therefore, he would want his queen-breeder to furnish him a tested breeder, that breeder would have to have extra money, of course.—ED.]

SWEET CLOVER — WHAT THE ILLINOIS EXPERIMENT STATION SAYS OF IT, ETC.

I send herewith circular No. 116, Illinois Experiment Station, which refers to sweet clover as one of the most useful legumes for green manuring.

I have six acres of sweet clover which was sown in 1907 with oats. It stands knee high now, and the growth would be about all a plow would want to turn under. On a portion of the piece I cut a ton per acre off from it last fall, and put it up for hay. HENRY STEWART.

Prophetstown, Ill.

WATER PAINT NOT WEATHER-PROOF.

In the April 1st issue of GLEANINGS, p. 425, F. Greiner asks for experience as to painting hives with water paint. Some seven or eight years ago I painted perhaps 100 or more hives and supers with it. Results were altogether bad. In a few months it began to chalk and powder off, and soil my hands and clothes every time I handled them. The paint may do for inside work, but it doesn't stand the weather.

Utica, Ill., April 20. A. MOTTAZ.

SPRING FEEDING PREFERRED FOR WEAK COLONIES.

When summed up, the evidence on this matter of spring vs. fall feeding appears to show conclusively that "too much spring feeding is no good, but too much fall feeding is just right." Now, although I have no desire to set up my twelve years of experience in keeping bees for the production of section honey against the teachings of any "old-timer," I really think I will just keep on feeding in the spring until there is a better way brought out for quickly building up the backward colonies.

In this locality a colony that has come through the winter without the loss of many bees will, if it has a good queen and plenty of stores, build up; and, if allowed, it will cast a swarm before the flow. Such colonies are unmolested. From 15 to 20 per cent, however, will be found to have just as good a queen, and a hive filled with stores, and yet the bees will be weak, and will not build up if left to themselves. These can be built up by stimulative feeding. It is cheaper, and involves less labor, than spreading or equalizing brood, and is not done at the expense of the good colonies. While fall feeding will reduce the other to a minimum, honey in the hive will not cause bees to breed to their full capacity, and it can not fully take the place of spring feeding.

Fort Smith, Ark. LEO E. GATELEY.

DIVISION-BOARDS FOR DUMMIES.

In regard to wooden dummies mentioned in Straws, April 15, I should like to ask through GLEANINGS if any of its readers have ever tried using the division-boards. They would provide room for bees to cluster between them, and would overcome the objection to using dummies under the sections. CHAS. E. CONRAD.

Brooksville, Ky.

[We do not know that we quite understand your question. The putting-in of several division-boards a bee-space apart to leave clustering room, *a la* Aspinwall, might accomplish a little, but we doubt it. If they were slatted like a fence separator they might do some good. See Mr. Aspinwall's article in last issue, p. 758.—ED.]

WHEN THE BEES SHAKE THEIR ABDOMENS ARE THEY TRYING TO LOOSEN THE WAX SCALES?

On page 491 E. A. Newell, of Massillon, Ohio, asks the following question:

"What is a worker doing when it shakes its abdomen over the combs with a gyrating movement, doing this on brood-combs over eggs, larvæ, and sealed brood?"

I became interested some time ago when, while watching this performance, I saw one of the bees pick up a small wax scale, or thin leaf of wax, after the bee with the swinging motion had moved away. It struck me at once that this bee had the idea of the principle of the honey-extractor.

By holding its head still, and moving its abdomen to and fro very rapidly, or, rather, from side to side, this motion would tend to throw out the small wax scales by centrifugal force.

As the wax-pockets are on the under side of the abdomen, and open toward the "rear end," as the Jay calls it, it would take this gyrating movement to extract the wax scales. It is not every colony that has these "gyrating bees," or at least I have not noticed it in some colonies. Perhaps they have not yet "caught on."

Stratton, Colo. PETER BOHM.

[It hardly seems probable that bees shake their abdomens to loosen the wax scales. They may fall off, it is true, during the act. There are too many indications that go to show that this shaking is simply the means of showing that new honey or new pollen has been discovered for us to entertain the shake-off-scale theory. If any subscriber has any thing to offer on the subject we should be glad to hear from him.—ED.]

SPRING FEEDING INDUCING ROBBING; THE USE OF ENTRANCE-GUARDS TO STOP IT.

My experience last spring and also this was that feeding either strong or weak colonies in the spring causes great danger of robbing. I lost three colonies last spring and two this year by robbers. I have been handling bees more or less the past twenty years, and I have always been successful when I used the Miller feeder in September or October.

I have lately been using entrance-guards to stop robbing, with the best of success.

Asherville, Kan. B. F. HARFORD.

HOW MUCH SULPHUR TO USE IN FUMIGATING COMB HONEY TO PROTECT IT FROM WAX-WORMS.

Will you kindly inform me what amount of sulphur per super of sections is burned when fumigating sections containing honey? How long are the supers to be fumigated? how often in, say, three months? J. M. ROBERTSON.

Bombo, Zululand.

[The amount of sulphur per super of sections has never been given in any printed work. It is the usual custom to put about two or three pounds in a big iron kettle placed upon a couple of bricks in a room somewhere about 8×10, in which the comb honey or combs are stored. This sulphur is ignited, when the room is closed and locked. The supers should be piled up in such a way that the fumes can gain access to every section or comb.

It is the general practice nowadays to use bisulphide of carbon in place of the sulphur. Ten or twenty supers are piled one on top of the other. Surmounting the whole pile, and in an empty super, is placed a saucer containing half a pint of bisulphide of carbon. This super is then closed, when the evaporation of the chemical will cause the destruction of any bee-moth or worms that may be in the combs. The fumes from the bisulphide, being heavier than air, settle down all through. If one has several thousand pounds of honey to fumigate in a room it may be cheaper to use the sulphur.

It will not be necessary to refumigate if the supers are kept closed thereafter so that the moth-miller can not get at them again.

If any of our readers will give us particulars as to the amount to use we shall be glad to have them do so.—ED.]

DOES CUTTING OUT CELLS TO RESTRAIN SWARMING MAKE THE BEES CROSS?

Eight days after one of my good colonies sent out its first swarm I removed all queen-cells but one. It has apparently had the desired result of preventing another swarm; but one result was any thing but desired, and that was that the bees immediately became so vicious and ugly that for two or three days it was not perfectly safe for any one to come within several rods of the hive, to say nothing of approaching within customary observing distance. They gradually became more peaceable. Is that the usual result of the operation?

One old bee-keeper tells me that, if the young queens had been killed by piercing the cells with a needle, instead of removing, the bees would have retained their good temper. Do you think that would be true? If so, why not always do it?

CHESTER G. DALZELL.

South Egremont, Mass.

[The case here cited is quite unusual. It is our opinion that the cutting-out of cells had nothing to do with the subsequent vicious temperament of the bees. It is conceivable that scattering the royal food and mutilating the brood during the robbing season might make the bees temporarily cross, but that the cutting-out of cells during the swarming should do so, hardly seems tenable. The mere poking of a hole through a cell with a needle amounts to just the same thing as tearing the cell down; for if the cell be perforated in the side the bees will finish up the work of destruction.—ED.]

A PLEA FOR NON-SEPARATOR COMB HONEY.

On page 546, May 1, you seem to be sure that the use of separators is to be commended for comb-honey production. Now, when I go into a store to sell honey I always call attention to the fact that my honey is nearly, if not quite, full weight. When I use separators or fences I always feel as though I did not care to put my name on the cases because they are so light. I have shipped tons of honey that would run from 23 to 25 pounds to the case, and it always gives satisfaction to dealers and to consumers.

Side by side in my yard I have nine-frame telescopic hives and different makes of eight-frame hives, the latter being provided with separators. I always feel sure of getting more sections in the nine-frame hives, where the separators are not used, and the sections are also nearer full weight. I think that, without the separators, the bees have a better chance to work, although the greater yield of honey on the nine-frame hives might possibly be accounted for by reason of the extra frame or because of the telescopic cover which I use on those hives. I have taken first premiums at State, interstate, and county fairs, competing with the product of thousands of colonies where separators were used. CHARLES W. SAGER.

Mabton, Washington.

[If you will refer to what we have said on this subject you will see that we have never claimed that *no* bee-keeper can produce good marketable comb honey without separators; for it can not be denied that there is occasionally here and there one who can produce fine comb honey without separators; but he is the exception that proves the rule. But the average man in the average locality should be discouraged in the most emphatic manner from making any attempt at it.

The great bulk of the non-separatored comb honey that has been shipped out has done more to hurt the markets, if we except dishonest grading, than any other one thing. Those of us who visit the large centers and look over the lots of comb honey that come in find that the average lot of sections produced without separators is a bad mess. It should never have left the locality in which it was produced. About all that can be done with it is to cut it out of the sections, pour a little extracted honey over it, and sell it for chunk honey at a low price.

The fact that the Colorado Honey-producers' Association are now discriminating in their grading-rules against an article produced without separators, and the further fact that the great majority of bee-keepers do not attempt to work by that plan, should be sufficient warning to others not to try it.

That more honey may be produced without separators may be so; but the average bee-keeper can not afford to spoil the markets, even if it is true.—ED.]

WHY THE BEES DON'T GO INTO THE SUPERS.

I have two hives of bees that completely refuse to go up into the supers to work. They have an abundance of stores below, and plenty of brood, the brood covering three-fourths of the frames. I have tried to coax them up by taking two frames of honey half drawn out, bees and all, and putting them in, but it didn't do any good, so I resort to you for instruction. I. B. MITCHEM.

Newburg, Ind.

[There are two reasons to assign why bees may not go up into the supers: too light a force of bees, or too light a flow of honey, or both. The remedy is to have strong colonies for comb-honey production. Of course, if the honey-flow be not strong they will not enter the supers and store honey, unless the light flow continues for a considerable length of time; but in the meantime they may swarm, for a light flow is more conducive to swarming than a heavy one. It is advisable to look through the hive, cutting out any swarming cells that may be found on the combs; give a large entrance, not less than ⅞ deep by the width of the hive, and see that shade is provided during the hottest portion of the day, say from ten o'clock on to three in the afternoon. If there be no shade it would be advisable to put a shade-board projecting front and rear and over on the south side, so as to shade the hive during the hot part of the day.—ED.]

SUCCESSFUL WINTERING OF TWO DANZENBAKER HIVES PACKED IN PAPER.

Last fall I had two swarms in Danzenbaker hives, and no suitable cellar in which to put them. I bought the thin super covers and deep telescope covers. On top of the super cover I laid newspapers, letting them hang down all around until there were about 100 layers on all sides and ends. The telescope covers were then slid on and left for the winter. Entrance was smallest on the Danzenbaker bottom-board, and sheltered by a piece of board set in front under

outside cover so the sun's rays could not strike the entrance. The bees wintered finely; and when I removed the covering early in May the brood and pollen were plentiful. I did not use a super. Hervey B. Jones.

Summit, N. J.

DOES NOISE OF ANY KIND HAVE ANY EFFECT IN BRINGING DOWN SWARMS?

This morning the second swarm of the season came out. It went very high, and I was afraid it would alight on a tall tree. My son blew his cornet, and they came down and alighted in three different bunches. In a few minutes one bunch divided and joined the two other clusters. They all came from the same hive. Do you think there could have been two queens? We had a hard time in getting them down, as they were in a brushy place: Hattie E. Graves.

Walpole, N. H., June 9, 1908.

[The blowing of a horn or trumpet would not, in our judgment, have any effect upon the swarm while in the air. It has been said that the noise drowns the note of the queen, but we doubt it. The swarm in this case clustered because it would have done so any way. In all probability there was one or more queens, and this was the cause of the separate clusters, otherwise they all would have clustered in one spot or gone back to the parent hive.

It sometimes happens that, when two or more swarms come out, there will be a division of the bees and a general mix-up. From what you write, we take it that there was only one swarm which divided as explained.—Ed.]

CATCHING A SWARM WITH THE QUEEN ON A POLE.

A friend of mine had clipped his queen's wings, and when the colony swarmed he found the queen. He picked her up and put her on a forked stick. He next went into the big field where they were all scattered, and held her up; and every bee came and lit on the pole.

Sandy Spring, Md. Jack Bentley.

[It would be perfectly feasible to hive a swarm in the manner related in your letter. This has been done; but the usual rule is to put the queen in a cage, fasten the cage to a pole, and then place the pole where the bees are flying the thickest.—Ed.]

DO COLONIES WITH MANY DRONES PRODUCE THE MOST HONEY?

I have noticed that the hives that raised no drones to speak of store but little honey, and that the hives that raise considerable numbers of drones store the most honey. Of course if the drones are *too* numerous, they consume considerable honey; but even if there are a large number, the hive stores more than hives having but few drones. I am speaking of colonies that are about equal in strength of worker bees.

I have thought sometimes that the presence of a considerable number of drones in a hive encourages the bees to work harder, or that the drones help in some way—perhaps by keeping up the warmth of the hive, if in no other way. If a drone is held in the hand he feels quite warm, and no doubt throws off a good deal of heat in the hive. E. E. Waite.

Mystic, Conn.

[That the drones throw off bodily heat which is useful in keeping up the temperature of the supers is generally believed; but that the best honey-gatherers are those that have the most drones may be true of blacks, hybrids, and Caucasians, but we think is not necessarily true of Italians.—Ed.]

HOW ARE SECTIONS CLEANED RAPIDLY?

In Gleanings for Dec. 15, 1907, page 1597, is an article by F. J. Farr, of Longmont Colo., on cleaning sections. He says he knew a Mrs. Marian Fuller, of Beloit, Wis., who cleaned and packed 125 cases of 24 sections each, between 7 and 5 o'clock, which is 9½ hours, taking half an hour for dinner. This would be cleaning and packing 3000 sections in 570 minutes, or nearly 5½ sections a minute. We have no slower or more tedious work than cleaning honey. I can at best clean only about 15 cases in a day. The fastest cleaner I have heard of in this part of the country claimed to have cleaned 20 cases in a day. If Mr. Farr will tell us how we can do the work more rapidly he will confer a great favor upon comb-honey producers.

Miss Willie White.

Fallbrook, Cal., Dec. 28, 1907.

[Perhaps the style of super or section would have something to do with the extraordinary speed, or possibly the propolis was not as abundant in the one case as in the other. At any rate, we should be glad to hear from any of our readers on the subject.—Ed.]

THE CHITTIM-TREE; A WESTERN HONEY-YIELDER.

While the bee-keepers of the East are casting about for a tree that is valuable otherwise than for honey, I should like to call their attention to the chittim (*Cascara sagrada*) that grows plentifully here in the coast country, and is considered a good honey-producer. All know the value of cascara bark, and the wood makes a fence-post equal to black locust. The tree is of small growth. Eight to ten inches in diameter is considered a large tree. It remains in bloom a month, and is visited by the bees from the first out in the morning to the last ones at night. It has been in bloom for two weeks, and the bees are filling the sections with chittim honey.

Halsey, Oregon, May 24. J. Waddell.

BEES THAT CAP HONEY WATERY NOT ALWAYS BEST.

In answer to your footnote, page 431, April 1, I will say I have often had Italians cap the sections watery; but they were medium to the poorest honey-gatherers—never among the best.

Corinth, Me. S. W. Cressy.

YELLOW SWEET CLOVER; A GOOD YIELD FROM IT.

Bees are doing very nicely, and are well along with the second super. There seems to be nothing doing in white clover, but a fine yield from yellow sweet clover now blooming.

Brooksville, Ky., June 12. E. E. Corliss.

# OUR HOMES

By A. I. Root

Whatsoever a man soweth, that shall he also reap.—GAL. 6:7.

Some years ago there were several bright articles in GLEANINGS, or some other of the bee journals, signed "B. Lunderer;" and I have been wondering whether B. Lunderer were still alive. May be Dr. Miller can tell us something about it. Well, if he is alive I want to ask his permission to sign myself just now B. Lunderer, or, to be more exact, I guess it had better be Seedcorn B. Lunderer; or may be we had better cut it short and say Blunderer, for that is just what I am. I have been feeling guilty for some days past to think that, with all my exhortations and teachings, I have been making such blundering work of planting our cornfields. We shall have to go a little back in order to get in the whole *lesson* that comes from my blundering.

Two years ago, after listening to Prof. Holden, and reading up in regard to seed corn, I selected at husking-time about 200 ears of corn, strung them on a wire, and hung them up in our cellar basement near the steam-pipes. Then I told you about how I took six kernels from each ear and planted them in the greenhouse. The ears were all so uniformly good that there were really none to throw out. Well, I have told you about our splendid corn crop of last season, that even Prof. Holden, when he went through it, admired. There was only one trouble with it. In consequence of the prolonged wet weather in the spring of 1907 we could not get our corn in until far along in June, and as a consequence a great deal of it was not perfectly matured before frost. Well, Prof. Williams, of our Ohio Experiment Station, gave us a talk last fall, just before corn-husking time, and admonished us to secure our ears for seed corn from some hill that had *four good stalks*. His argument was that we want to select our seed from a plant that had such strong fertility and vigor that it made a good ear in spite of the competition of the three other stalks. For instance, if you go to the corn-crib and select your nicest and best-matured ears you will be more than likely to get ears that come from a hill where there was only one stalk. Any sort of corn-plant would make a large nice ear where it had the whole hill by itself; but we want to get our "pedigree strain" from plants that have enough vitality to stand crowding—*not* from one that has made a good ear (or a couple of ears) because it has a better environment. This matter has been much talked about, and I suppose you all know more or less about it, and I hope your practice is according to your knowledge. Let me digress a little right here.

Poultry-men are anxiously inquiring why so many chickens die in the shell, and also why so many eggs will not hatch at all. The answer seems to come from a great number of experts, that we want stronger fertility. The eggs must be, as many as possible, fertile, of course; but we want the very strongest fertility. We want to be sure that both parents are in the best of health, and lack nothing in the way of the best kind of food, exercise, air, quarters, and every thing else. When you get a strong vigorous vitality and fertility, then your plant, or chicken, will make its way in spite of bad weather or uncongenial surroundings. This thing applies not only to corn but to the seed of every thing a farmer raises. One of our experiment stations sorted out the largest beans and planted them by themselves; then they put side by side the smallest beans, and they tried this with many kinds of garden seeds. The large well-developed seed that gives the little plant a good send-off might produce double the crop of the small one. Inherited vigor and vitality run all through the animal and vegetable kingdom—"Whatsoever a man soweth, that shall he also reap."

Well, now, friends, I am first-rate "on a talk," am I not? I have given you some grand articles and some grand exhortations about saving your seed corn; but after all I fear I have been like a guidepost on a country road, which continually *points the way*, but never goes *anywhere* itself.

Let me tell you what I did after listening to Prof. William's grand lecture on selecting seed corn. He said you had better make selections of ears you want to use, before the corn is fully matured; and he thought it rather better to let the ear remain on the stalk until husking-time. You are aware, perhaps, that, when corn is a little late in maturing, the juices and nutriment in the stalk go into the ear after the corn is cut, especially if it should be cut early to avoid frost. For this reason he said he would tie a colored string or tape to the stalk selected, or clip off the tassel from all stalks where they would be saved for seed.

Well, we not only had trouble (a year ago) in planting our corn on account of wet weather, but the blackbirds and cut-worms destroyed so much of it that we planted a second time and some of it even a third time. On this account it was a little difficult to select the best ears in a field of half a dozen acres. Before I went to Florida I had a good man go through and clip the tassels from enough stalks to give us plenty of seed. Then I directed that, when these ears were husked, they should be placed in our slatted potato-boxes and be hung up by four wires near the steam-pipes in the basement. And this was done; but instead of having half a dozen crates of seed corn, when I returned home in April I found there were only *two* crates, and these not quite full. The explanation given was that some hands were taken out of the factory to help do the husking when the weather happened to be just right. Well, these new comers, I am told, absolutely *refused* to watch for the stalks with the tassel clipped off. They said the best way and the proper way to select corn was to pick it out of the crib, regular old-farmer style. With all *my* blunders, perhaps it does not become me to complain of the stupidity or stubbornness of the average farm help; but it really vexes me, when I take the trouble to explain why I want seed corn saved up by itself, to hear men of average sense and intelligence say they "do not have time" for any such fussing. Prof. Holden tells us about addressing a great audience somewhere in Southern Ohio. After he had spent an hour or more in making all of these things perfectly plain, a big pompous man came up and said in substance, "Prof. Holden, I have been very much interested in your talk; in fact, I have greatly enjoyed it. But I

grow corn by the *hundred acres;* and you know, of course, where I do business on a large scale like that I can not stop to fuss with the things you have been talking about."

Our bright and genial friend Holden said that *that* speech actually made him mad. "Can't stop to fuss! indeed!" Well, now, listen to what I am going to tell you. When I got back from Florida I was all taken up with chickens and the chicken business. I seemed to have lost interest and enthusiasm for the corn business. I advised and directed a little about getting the ground ready, and somehow got it into my head that those two boxes of corn would plant our fields; and as the seed corn kept all winter by the steam-pipes grew so finely the year before, I did not even take the trouble to test the ears. All at once the weather turned favorable, and the men were ready to plant the corn; but when it was half planted I woke up enough to see that our supply would plant only half the field. Then I told the men they would have to select enough to finish it, out of the corn-crib in the way farmers usually do. But one or two of them said that, in consideration of the whole crop being late, and much of it not fully matured, they would hate to risk that in the corn-crib without testing. Now, I could just as well have selected good ears from the crib, and tested them in the greenhouse, as to spend my time in fussing with things of comparatively little importance. But the time to plant was upon us, and it was not done.

A few days before, when buying some baby-chick food of our local seedsman I saw on the counter a box of corn-plants, all thrifty, and apparently every seed making a good strong plant. I decided, rather than to risk the corn taken from the crib, I would *buy* some corn to finish the field. I did not take the time or trouble to ask if he still had some seed like that which produced the box of plants on the counter. I simply asked for a bushel of his "best seed corn." I paid him $2.00 for it. When I gave the men that bag of seed corn my conscience began to trouble me a little. I hastily took ten kernels out of the bag, and then got ten more, such as we had planted of our own, and put them in the greenhouse. In about 40 hours every grain cured by the steam-pipes started to grow, but not one grain from that out of the bag. At the end of 60 hours there was a good strong shoot from every kernel of our own growing; but only half a dozen had started at all, from the corn out of the bag. The other four rotted. The corn out in the field did just the same way. It was all late in starting, and only about half of it grew at all. I reported at the seedstore in order that they might know about it, and stop selling that seed to anybody else. Their explanation was this:

Their own tested corn was sold. This they bought of a good reliable farmer. He assured them that he and his neighbors had both planted it, and that it was already up nicely when he offered the seed for sale. Now, there are two and possibly three explanations to this. First, the "reliable farmer" may have put six or eight grains in a hill, so that if only half of the corn grew he would still have a fair stand. I wonder how many farmers work in this way. We adjusted our planters so as to have from three to five grains in a hill.

Another explanation may be that the corn that grew all right or very well at early planting time would only half grow at late planting time. I am told this often happens with corn cured in the ordinary way in the crib.

Now, you would probably suppose that, when I found only about half of the planting would grow, I would have immediately selected ears from the corn-crib, tested them in the greenhouse, and had them ready to plant from tested ears only, when we came to plant over again. Well, I did not do it. I think I must have gotten a fit of being lazy or shiftless, for I was not particularly busy. When I came to look at the stand of corn I told the men to go right at it and plant some more, not only at every missing hill but where there was only one stalk; and I went and picked out some of the best ears in the corn-crib for planting over. One of my men, however, who had had much more experience with seed corn than I have, threw out about half of my selection; and in order to test my ability to pick out good ears of corn that would grow, I selected two ears that I considered as good as any in the crib. Then I took ten grains from each which I put in the greenhouse in rows, the two rows being only an inch apart. Now listen to what I am going to tell you. Every kernel grew from *one* of those two ears, and every kernel *rotted* from the other one. Perhaps I am a poor hand at selecting seed corn; but I am of the opinion there are other bunglers besides myself. After my experiment I took the ears and carried them to Mr. Weibly, and said, "Mr. W., every grain of corn grows from one of these ears, while every one rotted from the other one. Now, can you tell which ear is the good one and which the bad?"

He told immediately, and explained it by saying one ear showed slight traces of mold. Before this, I showed both ears to Mrs. Root. Her father used to be great on corn and saving seed corn. She called the bad ear the better one of the two. Now, you may think this is a trifling matter; but suppose a farmer in picking out ears from his corn-crib, to plant, makes such work of it as I did. Suppose he gets hold of just *one* ear that does not contain a grain that will germinate. What is the consequence? Why, a great part of his crop will be knocked out unless he replants as we have been doing, and replanting is poor business as a rule. If he does not replant, there will be a lot of hills with only one stalk and possibly two, and sometimes a big lot without any in at all; yet he goes through all the motions in getting a crop, cultivates his ground both ways with a patent cultivator, and does splendid work, using a team that costs just now perhaps four or five hundred dollars; and yet I had not enough energy or enthusiasm to give the men plenty of *good seed* that I *knew* would grow, without any guesswork about it.

May be some of you wonder what this seed-corn business has to do with the Home papers. Well, friends, it is not only the corn crop and the crop of chickens and horses and cattle, but it is the crop of *boys and girls* that may be injured or led to go astray by just such slipshod methods and such procrastination as I have been telling you about. I have a nice little greenhouse, warmed by exhaust steam — the best place to test seed corn in the world, and yet at three different

times I delayed and neglected to take the precautions that I knew *ought* to be taken. The most of you have boys and girls growing up in your homes (or if you have not, you *ought* to have); and it is just as important that you be up and dressed, and ready to take the lead, as it is important for you to have your seed corn ready. Sometimes the younger ones around here say something like this:

"Why, father, there is no need for *you* to fuss and worry about the corn crop. We have experienced men who know how to do it all right; and you do not need to pay any attention to it unless you feel like it," etc.

Well, now, this is bad advice. My very health depends on my being busy about something; and it is my business to be busy about something that ought to be attended to, rather than something that I "feel like" doing. As fathers and mothers (at least most of you are), why are your boys and girls not going to church and Sunday-school? Talking to these young people about it is all right; but to make a success of raising children (as well as corn) you must be right in the business yourself. Go to church yourself and set an example; and go to Sunday-school also to set the example before the children and grandchildren. Nothing else will do the business. I explained to the men the importance of saving the seed as I have told you. But I ought to have been out in the field myself to *see* that all the help that was sent out to assist in husking the corn obeyed orders to the letter, no matter whether they thought I had peculiar notions or not;* and just the same way with your boys and girls. There are plenty in almost every neighborhood who are just beginning to inquire into things. Satan works every day in the week, nights and Sundays; and if you do not sow good seed he will get in *his* sort of seed. Remember what I have been telling you—"Whatsoever a man soweth, that shall he also reap."

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"CABINS IN THE WOODS" NOS. 1, 2, 3.

I suppose most of our readers remember about the cabin in the woods up in Northern Michigan—the house that was built in one day with lumber that was brought in one load by one team of horses. Most of you have probably also read about the cabin in the woods No. 2, down on our "Robinson Crusoe island" in South Florida; and I now take pleasure in giving you a picture of the same—see page 818.

The picture does not give as much of a glimpse as I could wish of the tropical plants—palms, palmettos, different kinds of cacti, and of the rubber tree, that grows naturally just at the right of the building. You get a very good view of the gnarled and twisted live oaks. The one on the left is a curiosity, and many people come to see it. Two pretty good-sized oak-trees are united by a large limb or tree-trunk that reaches across from one to the other; in fact, it makes a very nice seat where a dozen can sit down in the shade. Various speculations have been made as to how it came about. I think most likely that the tree tipped over when it was young. One of the branches came down to the ground and took root. Then shoots shot up, one from this branch and one from the root of the tree. When these shoots each became large trees, a horizontal trunk nearly a foot in diameter was left bridging over the space from one tree to the other.

In the foreground you can get a glimpse of friend Shumard's queen-rearing hives. Off at a distance, back of the house, is the Gulf of Mexico, that makes itself heard if not seen almost every hour of the day. I found the booming of the breakers was a fine thing to lull me to sleep when tired.

The washtub on top of the barrel was put there to get it out of the way of the chickens. When neighbor Shumard and I were both in "the chicken business" every thing had to be elevated or fenced in to be safe from their depredations. Perhaps I should explain that cabin No. 2 cost about $200. It took rather *more* than a wagon-load of lumber; but every thing, including the doors and windows, was brought in one load by a sail boat called the Phantom. Perhaps you may wonder how I manage to build so many cabins. Well, this one was built with the understanding that, when I got through with it, friend Shumard was to take it off my hands at half the original cost.

On page 818 you will find a picture of our last cabin in the woods. Mrs. Root, however, objects to calling it a "cabin." She says she thinks it deserves the name of "cottage in the woods." The people standing out in the front porch are your humble servant, Mrs. Root, and Mrs. Brewer, the good wife of the friend (M. L. Brewer, Philo, Ill.) who kindly furnished me the pictures. In Florida the houses are all up on brick piers or piers of some kind. It seems to be necessary for health, and to preserve the timber, to get it a certain distance above the ground that is so damp a good part of the year. Usually the air is allowed to circulate freely under the building. Mrs. Root objected to the untidiness of such an arrangement, so we had latticework put up. You will notice one part of it has tumbled down. You will notice also the long-leaf pine-trees in the background and at either side. These had to be cut away to make room for the house.

Mrs. Root is great on lawns—green lawns. She says she can not admire flowers or shrubbery without green for a background; or perhaps, rather, for a foreground. Well, we got our lawn well started by taking up clumps of Bermuda grass out of neighbor Rood's field. It is tremendous stuff to grow where you do not want it. Our boy Charley graded and leveled the dooryard and marked it off in furrows about two feet apart. The grass was then torn to pieces, thrown into the furrows, and covered up. But even though we had almost no rain for five or six weeks in February and March, nearly every spear of grass started. The chickens admired the grass as much as we did, or more, and we had a long fight to make them let it alone and stay in their own place down in the back yard. We planted quite a lot of shrubbery purchased of the Reasoner Brothers, of Oneco.

At the right you will notice a very pretty

*As the matter has turned out, it would have been money in my pocket to pay $10.00 a bushel for the ears that those huskers refused to save out from the stalks having the tops clipped off. The damage to my crop will probably be a great deal more than that in spite of all that can be done now to make up for the mishap.

golden-leafed arbor-vitæ, and surrounding it is a circle of hibiscus. The latter grows with wonderful luxuriance all over Florida. Mr. Rood had one little bush, set out, I think, in September, and it commenced putting out blossoms in November and kept it up all winter long, and it gave him from one to three great beautiful blossoms, opening continually.* The house well painted and finished outside, with plastered walls inside, etc., cost about $1000, including eave-spouting. A cement cistern on top of the ground reaches up to the eaves of the porch. This cistern is under the roof of the porch at the back side of the house.

Now just a word in closing about the expense of building in Florida. The cottage on the island was built by brother Shumard and his son-in-law. I paid them $2.00 a day. This last one was built by men who worked only eight hours a day and got $3.00. Now, in plain regular work they accomplish a great deal, and *perhaps* earn their money; but where we pay such prices as these you can not afford to keep your carpenter at little tinkering jobs. As most kinds of furniture are rather expensive in Florida, you will decide, perhaps, after getting the prices, that you can make stands, tables, etc., cheaper than to buy them ready made. Well, this is all very true if you do the work yourself; but when you set a carpenter at work on something he is not used to, at almost 40 cents an hour, you may find your home-made table and stand will cost you more money than you would have to pay for something a great deal nicer at some furniture store.

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## THE WRIGHT BROTHERS AND THEIR FLYING-MACHINE; ALSO SOMETHING IN REGARD TO OTHER FLYING-MACHINES.

If you want the full particulars of all that has been done by the Wright Brothers and others in America, as well as every thing that has transpired up to date in the whole wide world, you should subscribe for *Aeronautics*, published at 1777 Broadway, New York. The price is $3.00 a year; but if you do not wish to subscribe for a whole year you should at least get the anniversary number for June, 1908. It is quite a good-sized magazine, and perhaps the most up-to-date document that has appeared on the subject of aeronautics.

The most valuable point to me in this number is the first article, which is a communication from the Wright Brothers themselves. After giving a schedule of every flight during May, 1908, they add as follows:

Our recent experiments were conducted upon the grounds near Kitty Hawk, N. C., where we experimented in 1900, 1901, 1902, and 1903. The flyer used in these experiments was the one used in making the flights in September and October, 1905, near Dayton, Ohio. The means of control remained the same as in those flights, but the position of the controlling levers and their directions of motion had to be altered in order to permit the operator to take a sitting position. A seat for a passenger was added. The engine used in 1905 was replaced by a later model, one of which was exhibited at the Aero Club Show at New York in 1906. Larger gasoline-reservoirs and radiators were also installed.

We undertook these experiments in order to test the carrying capacity of the machine, and to ascertain its speed with two men on board, as well as to regain familiarity in the handling of the machine after a period of almost three years without practice. No attempt was made to beat our record of distance made in 1905.

The first flights were made over a straight course against winds of 8 to 18 miles an hour. The equilibrium of the machine proving satisfactory in these flights, we began to describe circles, returning and landing at the starting-point. These flights covered distances of from 1 to 2½ miles.

On the 14th of May a passenger was taken on board. In the first flight the motor was shut off at the end of 29 seconds to prevent running into a sand hill, toward which the machine was started. But in a second the machine carried the passenger and operator for a flight of 3 minutes and 40 seconds, making a circle, landing near the starting-point. The wind, measured at a height of 6 ft. from the ground while the machine was flying, had a velocity of 18 to 19 miles an hour. The distance traveled through the air as registered by an anemometer attached to the machine was a little over 2½ miles, which indicated a speed of about 41 miles an hour. A speed as high as 44 miles an hour was reached in an earlier flight, with only one man on board.

In a later flight, May 14, a false movement of a controlling lever caused the machine to plunge into the ground when traveling with the wind at a speed of about 55 miles an hour. The repairs of the machine would have necessitated a delay of five or six days; and as that would have consumed more time than we had allowed for the experiments we discontinued them for a time.

Besides this there is quite a long article by Byron R. Newton, correspondent of the New York *Herald*. From his account I extract as follows:

When the little band of correspondents arrived at Manteo they decided to feel out the ground by sending one of their number to ascertain if there was any change in the Wrights' policy of secrecy. It was a day's journey, and a fruitless one. When the scout reached the aerodrome, nestled between Kitty Hawk and Kill Devil Hills, the Wrights were about to make a flight; but at the approach of a stranger they wheeled the aeroplane back into the building, closed the doors, and advanced to meet their visitor. They were civil, but very firm. "We appreciate your good intentions," they said, "but you can only do us harm. We do not want publicity of any sort. We want to go on with our experiments; but so long as there is a stranger in sight we shall not make a move. Come back a month from now and we will show you something worth telling to the world. At present we are simply experimenting with new features of our machine."

Then one of the brothers and their assistant mechanic walked with the correspondent back to his boat and watched it far out on the sound toward Manteo.

The next morning at 4 o'clock, equipped with a guide, water, and provisions we set out determined to ambush the wily inventors and observe their performance from a hiding-place in the jungle. After a tedious journey over sand hills, through long vistas of pine forest, and through miles of swamp and marsh land in which two of the men narrowly escaped the poisonous fangs of moccasins, we found a spot opposite the aerodrome, commanding a clear view of the beach and sand hills for a distance of five miles in either direction. There for four days we lay in hiding, devoured by ticks and mosquitoes, startled occasionally by the beady eyes of a snake, and at times drenched by heavy rains. But it paid. We saw what few human eyes had ever witnessed before, and had the satisfaction of telling the world about it.

Often we wondered if those men ever slept. They were at work before the sun came up; they frequently made flights in the early twilight, and lamps were flickering about the aerodrome until late in the night.

The first flight we all witnessed was made early in the morning. As we crept into our hiding-place we could see that the doors of the aerodrome were open and the machine standing on its mono-rail track outside. Three men were working about it and making frequent hurried trips to the aerodrome. Presently a man climbed into the seat while the others continued to tinker about the mechanism. Then we saw the two propellers begin to revolve and flash in the sunlight. Their sound came to us across the sand plain something like the noise of a dirigible balloon's propellers, but the clacking was more staccato and louder. The noise has been described as like that of a reaping-machine, and the comparison is a very good one. We were told by a mechanic who assisted the Wrights that the motor made 1700 revolutions a minute, but was geared down so that the propellers made but 700 revolutions.

For several seconds the propeller blades continued to flash in the sun, and then the machine arose obliquely in the air. At first it came directly toward us, so that we could not tell how fast it was going except that it appeared to increase rapidly in size as it approached. In the excitement of this first flight, men trained to observe details under all sorts of distractions forgot their cameras, forgot their watches, forgot every thing but this aerial monster chattering over our heads. As it neared us we could plainly see the operator in his seat working at the upright levers close by his side. When it was almost squarely over us there was a movement of the forward and rear guiding-planes, a slight curving of the larger planes at one end, and the machine wheeled about at an angle every bit as gracefully as an eagle flying close to the ground could have done.

It appeared to be 25 or 30 feet from the ground; and, so far as

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*Beautiful and luscious mulberries also grow with wonderful rapidity and luxuriance. Cuttings stuck in the ground at the proper time of the year will take root and send up great shoots in a wonderfully short time; and sometimes you will get *some* pretty fair fruit the very first year.

we could judge by watching its shadow sweeping along the sand, it was going about 40 miles an hour. Certainly it was making the average speed of a railroad train.

After the first turn it drove straight toward one of the sand hills as if it were the intention of the operator to land there; but instead of coming down, there was another slight movement of the planes and the machine soared upward, skimmed over the crest of the mountain, 240 feet high, and disappeared on the opposite side. For perhaps ten seconds we heard indistinctly the clatter of the propellers, when the machine flashed into view again, sailed along over the surf, made another easy turn, and dropped into the sand about 100 yards from the point of departure. No sooner had it touched the sand than men started from the shed with two wide-tired trucks. These were placed under the machine, the motor started, and the aeroplane at once became a wind wagon, rolling itself back to the starting track with the power of its own propellers. After each flight all the mechanism was examined in most painstaking manner, and the operator always came down when the slightest thing about the machinery was found to be working imperfectly. . . . . .

On several occasions we saw the machine sail straight away up the beach until it was a mere speck, scarcely distinguishable from birds and other indistinct objects near the line of the horizon. During these flights the sound of the propellers would be lost altogether until the machine turned about and came back, frequently landing within a few feet of the starting-point. These long flights must have covered a distance of four to six miles.

As our readers may be curious to know many men at the present time have actually been able to fly without the aid of a dirigible balloon, we give the following:

THE SEVEN MEN IN AMERICA WHO HAVE FLOWN IN MOTOR-DRIVEN AEROPLANES.

Wilbur Wright, Orville Wright, A. M. Herring, Thomas Selfridge, F. W. Baldwin, G. H. Curtiss, J. A. D. McCurdy.

Mr. Curtiss, so far as we can find out, has flown a greater distance — 1020 feet — on first trial than any other aviator in the world. The time was 19 seconds.

Last, but not least (in my opinion) I hold in my hand a card postmarked Montaigne, Paris. Underneath the picture of L'Arc de Triomphe there are just five words that I prize very highly. These words are, "With kind regards, Wilbur Wright." I prize them because they remind me that my good friend Wilbur Wright, even if he is "away up in the air," and traveling all over the world, still remembers his old friend A. I. Root.

# POULTRY DEPARTMENT

### HOPPER FEEDING, ETC.

So far in my poultry experience I have been in the habit of letting my fowls, old and young, help themselves to their rations. Even if it were true that there are advantages in feeding only at certain times, and just what the fowls pick up clean, it would be very inconvenient for *me* to be around at these regular periods; and I have had such good success by keeping the food constantly before them, or where they could get it when wanted, that the saving in labor to me is worth more than the extra feed required by hopper feeding; and I am sure that none of my poultry, either young or old, ever suffer, even a few hours, from a lack of food. There is, however, one great objection to this manner of feeding. The sparrows, robins, blackbirds, and other songsters, soon "catch on." I thought I had circumvented them by having the feed in a pen of poultry-netting, and letting the fowls get in and out by an underground tunnel. But the birds soon learned to use this tunnel almost as well as the chickens. Just while I write, it seems as if all the birds in the vicinity had discovered that we not only have a large mulberry-tree, another one of early sweet cherries, but also *wheat* and *corn ad libitum* to fatten the birds and keep them in good cheer. I have circumvented the birds for a time, but I do not know how long it will work. The food is all placed upstairs in that little house shown on page 638, May 15. If the birds do find their way upstairs, as the chickens do, the sight of the blue sky through the poultry-netting above their heads prevents their getting out the same way they got in. I have not yet decided how to dispose of the birds that have got caught under the poultry-netting. It seems too bad to kill the little fellows, and Mrs. Root suggests that it is against the law to kill song birds. Of course sparrows can be disposed of; but I find quite a lot of other birds helping themselves to the wheat and corn provided for poultry. I have not looked up the law in regard to the matter; but I can not for a moment think that the farmer or fruit-grower is prevented from killing birds that are destroying his crops. We have a large mulberry-tree that bears great quantities of mulberries; but we have had scarcely a ripe berry here in the North for several years past, because the birds get there before the fruit is fairly ripe. This year we succeeded in getting a few nice early cherries before the birds found out *where* they were and how *good* they were.

### HENS LAYING BETTER WITHOUT MALE BIRDS.

The *American Poultry Advocate* for June says that the Geneva, N. Y., Agricultural Experiment Station made some experiments in keeping laying hens with and without a male bird. This bulletin, in closing up its observation, makes the following statement:

A pen of pullets, kept without a male, produced eggs at about 30 per cent less cost than an exactly similar pen with which a cockerel was kept.

Another pen, without a male, gave during the first three months about the same proportionate excess of product over an exactly similar pen with which a cockerel was kept.

In each of the two pens without male birds some pullets had begun to lay from one to two months earlier than any in the corresponding pens in which male birds were kept.

Now, friends, if this is true, think of the tremendous loss of food and loss of eggs resulting from keeping a lot of male birds running loose that are of no use to anybody. If it is not true, will somebody who is competent let us know about it as soon as possible? When you want eggs for hatching, select your best breeders and put them in a pen by themselves with your choice male birds; but do not, for the sake of humanity, if for no other reason, let your young pullets and laying hens be worried and annoyed by male birds that should have been disposed of a long while ago.

### BREAKING THE WORLD'S RECORD; A PEN OF SIX HENS LAY AN AVERAGE OF 255 EGGS EACH FOR ONE YEAR.

We clip the following from the *Australian* for April 11:

Much interest has been felt in poultry circles during the past few weeks as to the probable result of the twelve-months' egg-laying competition, which came to a conclusion at the Roseworthy Agricultural College, South Australia, March 31. The two leading pens have been in immediate proximity with their output of eggs during the last week or two, and on March 29, or two days before the close of the competition, both the pens were on the same mark. After that a slight alteration occurred, and at the close of the competition the result was that Mrs. A. E. Kin-

near's pen had won with 1531 eggs for the twelve months. The pen entered by Mr. Padman laid during the same period 1528 eggs, the difference between them being only three eggs. This remarkable result broke the previous world's record, and it is quite noteworthy that the former record was established in Western Australia with 1494 eggs. Previous to the close of the competition two Victorian poultry-breeders purchased the two leading pens, Messrs. Rogen and Andrews securing the now first-prize winners, and Mrs. A. J. Duncan purchasing those that are now second. Practically there is nothing between the merits of the respective pens, and the purchasers may be congratulated on their spirited efforts to secure high-class laying strains. Both pens consist of six White Leghorn hens.

The competition was held under the auspices of the Utility Poultry Club, of South Australia, and under government supervision.

Perhaps I should have said we have hens here in America that have gone considerably higher than 255 eggs in one year; but there is no record—at least I suppose so—of a whole pen of six hens making any thing like the above. The result is of more value than one might at first think; for this woman who selected these fowls and entered them for competition had already demonstrated that each one of the six was a good layer; and as the experiment was under the supervision of the government, there certainly can be no mistake about it. Please note that not only has Australia beaten the world, but that it was done by a woman.

# HIGH-PRESSURE GARDENING

By A. I. ROOT

## GROWING ALFALFA AND SWEET CLOVER WITH INOCULATED SOIL.

I visited our Ohio Experiment Station a few days ago, mainly to look over their experiments with alfalfa and inoculated soil. There were several plots of alfalfa devoted to this matter of inoculating soil with nitrogen bacteria. The evidence was exceedingly plain that the inoculated *soil* produced a market benefit in every instance; but the pure cultures furnished by the government, and those from other sources, showed no result whatever. While there is a possibility that this latter process of introducing the nitrogen-gathering nodules may be a success, their efforts at Wooster do not show any benefit whatever. When we come, however, to bringing in soil where either alfalfa or sweet clover has been plainly showing nitrogen nodules, a very marked improvement is apparent at a glance. Prof. Williams, who has the matter in charge, informed me that some time ago he put out two little plots of alfalfa, as much alike as it was possible to make them, except that on one plot they mixed into the soil some dirt taken from the side of the road where sweet clover had been growing quite luxuriantly. He said the alfalfa was almost twice as tall where the inoculated soil was used. Prof. Green remarked in regard to this, and some other experiments with sweet clover, something like this:

"It is really astonishing that some farmers should complain about seeing sweet clover in fence-corners or along the highways when it is really one of the best friends the farmer has. It takes root, and grows in ground too poor to grow any other plant; but after it has taken nitrogen from the air, and made the soil fertile where it grew, it drops out of the way and lets other plants come in and grow that could not have grown on the soil had not the clover first taken root and made the soil fit for other things."

Now, in summing up, every farmer (and I might almost say every bee-keeper on the face of the earth) should grow at least a little patch of alfalfa if it can be made to grow on your soil; and the very shortest and quickest method of getting alfalfa started is to encourage sweet clover first. If you already have sweet clover, you are so much ahead. If you haven't, by all means get it started and give it a trial on the poorest and most unfertile soil you have on your place. The way some people have complained about sweet clover would almost remind us of what the good Book tells us about entertaining strangers, as we may, by so doing, entertain *angels* unawares.

## SWEET CLOVER—SOMETHING MORE ABOUT IT.

The following is from *Hoard's Dairyman:*

What is the inclosed plant? It grows on the roadside to about three feet in height, and the roots are covered with nodules like clover. Is it of the alfalfa family? J. M. G.

Oak Grove, Md.

To the above the editor replies as follows:

The specimen inclosed appears to be the plant commonly called sweet clover. Its botanical name is *Melilotus alba*. It can not be said to belong to the alfalfa family, but it serves as a host for the same species of bacteria that the alfalfa plant requires. Soil from a locality where sweet clover grows is often used for inoculating a field for alfalfa.

The important and the principal point in the above is the last sentence. If it is true that soil taken from a locality where sweet clover grows luxuriantly can be used for inoculating a field for alfalfa, then sweet clover assumes an importance in agriculture that we have not heretofore given it credit for.

Below is something that seems to come from the same writer we quoted on p. 710, last issue. We clip it from the *Kansas Farmer:*

Many of our hills that have been worn out and washed away by having cotton planted on them for the past sixty years are now in sweet clover, and they are making money for their owners. If Mr. Grimes ever succeeds in making it a penitentiary offense to grow melilotus I am afraid we Southerners who live in the lime belt will be tempted to secede again. So here is hoping the national legislators will curb the trusts but not the sweet clover.

The editor of the *Kansas Farmer* speaks in regard to the above as follows:

A few years' growth of sweet clover on gumbo land in Kansas will make first-class corn and alfalfa land of it. Alfalfa is nowhere in comparison as an improver of soil.

Since the above was dictated I have received the following from Hon. Charles E. Bessey, of the University of Lincoln, Nebraska:

*Mr. A. I. Root:*—I am very much obliged to you for the letter which you wrote me on May 29 in regard to sweet clover; and I am glad to know that you back me up in what I said rather mildly in my short note in the *Breeders' Gazette*. I realized that a good many men are quite "touchy" about sweet clover, and that is why I put it as mildly as I did. I think that, in a few years, we shall be able to push the matter and restore sweet clover to its proper place. I have never thought it a bad weed at all. I do not understand why people have taken such a great prejudice to it. CHARLES E. BESSEY.

Lincoln, Neb., June 4, 1908.

It would be strange indeed if our experiment stations and professors of agriculture were making a mistake, or were not well posted in regard to the value of sweet clover.

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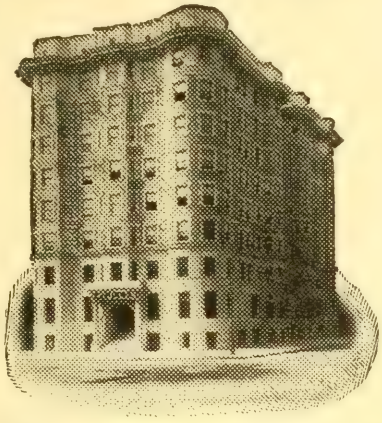

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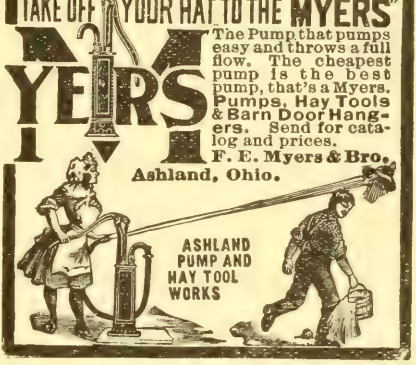


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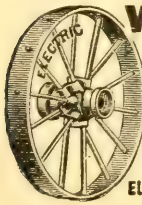


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J. W. WHITE,
General Industrial Agent
Seaboard Air Line Railway.
Dept F PORTSMOUTH, VA.

# Wintering Bees in Danz. Hives

FALL RIVER, MASS., April 10, 1908.

*F. Danzenbaker:*—Kindly send booklet about your smoker as per your ad. in GLEANINGS, current issue, and for which I thank you in anticipation. I had **ten hives, average good, last fall**; now I have **five that survived, and in Danzenbaker hives**, and as I write they are lugging in pollen in good shape. Yours, H. N. BRIGHTMAN, Fall River, Mass.

(The **defunct** bees were in **ten-frame Langstroth.**)

Pretty good! five Danz. lived, five L. died.

**F. DANZENBAKER, Patentee.**

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He has got his new goods fresh from The A. I. Root factory, and his 1908 catalog, and wants you to send for one free—40 pages illustrating and describing Root's goods at Root's prices. Send him a list of what goods you want, and let him tell you how much they will cost you.

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Colony of Italian bees in an 8-frame D. T. hive, complete ..... $9.00
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This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

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Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

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## COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

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Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

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**AN IMMENSE STOCK OF HONEY-CANS**
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## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

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| 12-in. 4-row shipping-cases with 3-in. glass . . . | $17.00 per 100 |
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Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

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Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

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are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey, Highland Farm queens will produce them. We are now booking orders which will be filled in regular rotation, beginning May 15. You should get in line by placing your orders early, and avoid the rush of the busy season. Single queens, $1.00; 6, $5.00; 12, $9.00. Safe delivery and satisfaction guaranteed.

For further information send your address on a postal card to

**HIGHLAND BEE AND POULTRY FARM,** J. E. HAND, Proprietor, **BIRMINGHAM, ERIE CO., O.**

GRAY **CAUCASIAN** QUEENS.

*1905-1906 Queen-breeder in Apiary of Dept. of Agriculture, Washington, D. C.*

During that time Caucasians were being distributed by the department so that I handled many of the imported queens and bred much of the stock which other breeders are using, and am in a position to furnish the best of Caucasian queens. They are hardy and prolific, but not great swarmers; are builders of white combs, great honey-gatherers, and their extreme gentleness has won for them the name "STINGLESS." Queens are reared from imported mother of gray type. Have three-band or leather-colored Italians also. They are hustlers.

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| GRAY CAUCASIANS. | | | | THREE-BAND ITALIANS. | | | |
|---|---|---|---|---|---|---|---|
| Untested queens | 1, $ .75; | 6, $4.25; | 12, $ 8.00. | Untested queens | 1, $ .60; | 6, $3.35; | 12, $6.50. |
| Select untested queens | 1.00 | 5.50 | 10.00. | Select untested queens | .75 | 4.00 | 7.50. |

SAFE ARRIVAL AND ENTIRE SATISFACTION GUARANTEED.

*No bee disease* ever in this section. Descriptive circular and testimonials free.

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# ITALIAN QUEENS

And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $ 75 | $4 00 | $ 7 00 |
| Tested queens | 1 00 | 5 00 | 9 00 |
| Select tested queens | 1 50 | 8 00 | 15 00 |
| Breeders | 3 00 | 15 00 | |
| Straight five-band breeders | 5 00 | | |
| Two-comb nuclei, no queen | 2 25 | 12 00 | 22 00 |
| Three-comb nuclei, no queen | 3 25 | 18 00 | 32 00 |
| Full colonies on eight frames | 5 00 | 25 00 | |

**All queens now go by return mail.** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

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Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen, $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

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**500 Best Strain Italian Queens Ready to Mail March 1st.**

Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
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Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

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Mailed promptly. Safe arrival and satisfaction guaranteed. Circular.

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**GOLDEN AND CLOVER STOCK.**

Prices for May and June: Choice queens, $1.00 each, 6 for $5.00, or $9.00 a doz.; after July 1st, 75 cents each, 6 for $4.00, or $7.50 a doz. Tested queens in May and June, $1.50; after July 1st, $1.25. Two-comb nucleus, no queen, $2.00; three-comb nucleus, no queen, $2.50. Full colony on eight frames, no queen, $5.50. Five per cent discount on five, ten per cent on ten or more.
CATALOG FOR 1908 FREE. SEND FOR ONE.

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## QUEENS of MOORE'S STRAIN OF ITALIANS

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

PRICES: Untested queens, $1.00 each; six, $5.00; doz., $9.00. Select untested, $1.25 each; six, $6.00; doz., $11. Select tested, $2.00. Extra select tested, $3.00. Breeders, $5.00 to $10.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

**J. P. Moore, queen-breeder, Rt. 1, Morgan, Ky.**

## ITALIAN QUEENS

Bred from best stock to be had in the country, and by best methods, insuring beautiful, vigorous, long-lived queens. Prices for 1908:

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $ 5.00 | $ 9.00 |
| Tested | 1.50 | 8.00 | 15.00 |
| Select tested | 2.00 | 10.00 | 14.00 |
| Breeder | 5.00 | | |
| Two-frame nucleus | 2.25 | 12.00 | 22.00 |
| Three-frame nucleus | 2.75 | 15.00 | 28.00 |
| Full colony on eight frames | 5.00 | 25.00 | |

Add queen wanted to above.

I shall offer no Caucasians for sale this season.

**E. M. GRAVES, Ioamosa, San Bernardino Co., Cal.**

**W. H. Laws** is again on hand for the coming season with a larger stock of queens than ever before. He sold 400 queens to a New Mexico producer last May who wrote, "Your stock is far ahead of those Eastern queens I have been buying," and has placed his order for 1000 more of the Law queens to be delivered in May and June coming.

Others write that, if they had purchased all Laws queens, their crop of honey would have been doubled. Testimonials enough to fill this book. If you are going to improve your stock, had you not better investigate?

Single queen, $1.00; dozen, $10.00; breeders, the best, each, $5.00. **W. H. LAWS, Beeville, Bee Co., Texas.**

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By RETURN MAIL; bred from best Red-clover working strains in U. S. No better hustlers; gentle, and winter excellent; untested, from my SUPERIOR breeder, 1, $1.00; 6, $5.00; 12, $9.00. After July 1st, 1, 75c; 6, 4.00; 12, $7.50. Special prices on lots of 50 or more. Satisfaction and safe arrival guaranteed. Circular free.

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**F. J. WARDELL,**

**UHRICHSVILLE, OHIO, U. S. A.**

After many years' experience as head queen-breeder for The A. I. Root Co., I am now breeding bees at the above address. My stock is equal to any now advertised, and my long experience enables me to judge very accurately the value of any strain. Mine is the celebrated red-clover stock, which has given so much satisfaction to thousands of buyers for a number of years past. If you desire something very select for breeding purposes, write to me, stating your wants, and the same will be supplied. I have no cheap or inferior queens to sell. My prices for the season are as follows:

| | May to June. |
|---|---|
| Untested queen | $1.25 |
| Select untested queen | 1.50 |
| Tested queen | 2.50 |
| Select tested queen | 3.50 |
| Breeding queens | 6.00 |
| Select breeding queens | 9.00 |
| Extra select " 1 year old. | 12.00 |

No untested queens sent before May 15; but to secure your queens early in the season it is necessary to order now. Absolutely, all orders filled in rotation.

# 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders, $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

# QUEENS

of the Robey strain of three-banded Italians during the season of 1908. Warranted queens, 75 cts. each; $4.25 per six; $8.00 per doz. Tested queens, $1.00 each. Satisfaction or money refunded.

**L. H. ROBEY, Worthington, W. Va.**

**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.,* **Minneapolis, Minn.**

CHOICE

# QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3 00.
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

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**GOLDEN-ALL-OVER and RED-CLOVER**

# ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested . . . . . | $1.00 | $5.00 | $9 00 |
| Select untested . . . . | 1.25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.

Positively all orders filled in rotation.

**Wm A. Shuff, 4426 Osage Ave., Philadelphia, Pa.**

---

# DANIEL WURTH'S QUEENS.

**Golden Five-banded and Three-banded.**

Finest that can be had at any price; large and prolific. Have had 35 years' experience. Having moved from Pitkin, my address is Fayetteville, Ark., R. F. D. box 5, A.

**Untested, $ .75 each; 6, $4.35**
**Tested, 1.00 each; 6, 5.50**

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.. will ..

## SAVE TIME AND FREIGHT

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

## JOS. NYSEWANDER

**565-7.W.7th St., Des Moines, Ia.**

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to all points in the South and Middle West.

Send for our free illustrated catalog of

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We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

## Blanke & Hauk Supply Co.

DEPT. B.

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Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

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will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

## TEXAS SEED AND FLORAL COMPANY

**Dallas, : : . Texas**

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for

## Government-Irrigated Homesteads

### Representative of the Government to Show the Land

On Tuesdays, July 21st, August 4th and 18th, September 1st and 15th, 1908, I will personally conduct land-seekers' excursions to the Big Horn Basin and Yellowstone Valley, where there is room for one thousand families on homestead lands irrigated by the Government. My services are free.

The soil is rich, the climate ideal, the water pure, and timber and coal are in abundance. The land is free, and settlers repay the Government actual cost for water—$45.00 an acre—in ten yearly payments without interest.

Also ground-floor prices for deeded and Carey-act lands.

No cyclones, floods, or drouths.

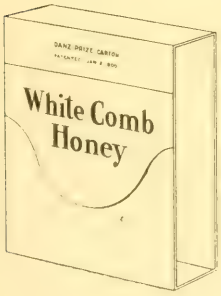
Write for our new folder telling all about these lands. **It's free.**

Burlington Route

**D. CLEM DEAVER, General Agent**
**LAND-SEEKERS' INFORMATION BUREAU**
**9 Q Building, Omaha, Neb.**

4668

# CARTONS FOR COMB HONEY




We are prepared to furnish these cartons in several styles and in two grades of stock; also in various styles of printing. We can also execute special designs in quantities on special orders. Let us know your wants.

The Danz. open-end carton will enclose a section and pack in the regular shipping-case. We furnish it for 4x5x1⅜ and 1½, 3⅝x5x1½, and the several widths of the 4¼ section. To hold the carton in place on the section you need a rubber band around it. These bands are not furnished with the cartons except at an extra price, and only when so ordered.

The folding carton is of a different pattern from those heretofore furnished. They tuck in at the top and bottom in a neater form, and are without tape handle. Sections packed in these cartons require shipping-cases made a little larger than the regular sizes, but such cases do not require glass. Some of our agencies have on hand some of the old-style cartons in some sizes, which may be supplied on orders unless otherwise specified. These cartons are furnished for all regular sizes of sections; namely, 4¼x4¼x1⅞ and 1½; also 4x5x1⅜. Other sizes furnished in quantities on special order.

### Price List of Cartons

Danz. carton, regular size, plain or printed name blank, 50 cts. per 100; 500, $2.25; 1000, $4.00. Weight, 4 lbs. per 100.
Folding cartons, regular sizes and grade, plain, 60 cts. per 100; 500, $2.75; 1000, $5.00.
Folding cartons, regular sizes and extra quality, plain, 75 cts. per 100; 500, $3.25; 1000, $6.00.
Extra for printing stock design, name and address blank, 50 cts. per 1000 one side; 75 cts. both sides for each color.
For inserting name and address in design at same printing, add 50 cts. for any quantity. For printing in name and address in a stock design, after that has been printed, add 50 cts. for 100; 75 cts. for 500; $1.00 for 1000. Such cartons can be supplied only from Medina. Special designs or printing quoted on application.

## Honey-Labels

We are manufacturers of labels of almost any description. Will furnish estimates from sketches. Send for our complete catalog of forty different labels in black and colors.

**The A. I. ROOT COMPANY, MEDINA, OHIO**

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Help Wanted

WANTED.—A girl or woman to cook and do general housework in a small family. References exchanged and correspondence invited. A good home and wages for the right one.
Rt. 1. E. P. ROSE, M. D., Dukedom, Tenn.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Indian Runner duck eggs from choice stock, $1.00 per 12; $4.00 per 55; $6.50 per 100.
KENT JENNINGS, Mt. Gilead, O.

## Food Products.

Send for circular and price list of Smucker's apple butter. Guaranteed to be absolutely pure. Agents wanted.
J. M. SMUCKER, Orrville, Ohio.

## For Sale

FOR SALE.—Mated thoroughbred homer pigeons at $1.00 per pair. FRANKLIN G. FOX, Erwinna, Pa.

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—300 lbs. Dadant's thin brood foundation, size 8x17 inches. C. J. BALDRIDGE, Kendaia, N. Y.

FOR SALE.—200 cases of 5-gal. cans, good as new, at 25 cts. each. G. L. BUCHANAN, Holliday's Cove, W. Va.

FOR SALE.—Four-frame reversible Cowan extractor, used but a little; cheap. D. H. COGGSHALL, Groton, N. Y., R. 12.

FOR SALE.—One four-horse feed-grinder and power complete; one five-horse gasoline-engine, new. C. H. ZURBURG, Topeka, Ills.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.
KENSINGTON CATTERY, Marion, Ohio.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—200 cases of 5-gallon cans. All are free from rust inside, and the majority have been used but once. Two cans in a case; 10 cases or more, 25 cts. per case.
J. E. CRANE & SON, Middlebury, Vermont.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cents each, postpaid. FRANK ALEXANDER,
Delanson, N. Y.

FOR SALE.—Best Wisconsin sections, 1000, $4.00; 2000, $7.75; 3000, $11.00; 5000, $17.50; No. 2, 50 cts. less; plain, 25 cts. less, 24-lb. 2-in. glass shipping-case, 14 cts. Catalog free.
H. S. DUBY, St. Anne, Ill.

FOR SALE.—Well-bred Scotch Collie pups, farm raised, from stock that works. Price $4.00 and $5.00.
E. E. LARCOMB, New Dover, O.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

Don't bother with cans. Kegs are cheaper and easier to fill and handle. 160-lb. pine kegs, with 2-in. hole and plug, 50 cts. each, f. o. b. factory. Orders given prompt attention. Send list of supplies needed. I can save you money.
N. L. STEVENS, Moravia, N. Y.

FOR SALE.—75 eight-frame Root hives with good worker combs; used two seasons; also lid and bottom; $1.60 each. One hundred 4¼ supers, trimmed with sections and foundation; used one season; 40 cts. each. Sixty 10-frame hives and five Danzenbaker hives, with combs wired, all Root's goods, $1.75 each, without super. Thirty 8-frame supers, trimmed, $3.00 each.
H. A. ROSS, Evansville, Indiana.

## Wants and Exchanges

WANTED.—Refuse from wax-extractors and old combs for cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

## Bees and Queens

Golden Italian queens by return mail, 50c.
J. F. MICHAEL, Winchester, Ind.

FOR SALE.—75 colonies of bees in eight-frame Dovetailed; no disease; $1.75 per colony. F. C. MORROW, Blevins, Ark., R. 1.

FOR SALE.—100 Heddon supers, wired combs, for 50 cents each. W. L. COGGSHALL, Groton, N. Y.

Italian queens, Adel strain, untested, 65 cts.; select untested, 85. J. R. MCCORKLE, Wingate, Ind., R. 5.

FOR SALE.—Italian and Carniolan queens, untested, 75 cts.
GEO. E. KRAMER, Valencia, Pa.

FOR SALE.—800 colonies of bees; for particulars, address
DR. GEO. D. MITCHELL & CO., Ogden, Utah.

FOR SALE.—Italian queens, hustlers. Untested, 65c; tested, $1.00. MRS. J. W. BACON, Waterloo, N. Y.

We still have a few of those mismated Caucasian queens, good stock, $1.00 each. A. I. ROOT CO., Medina, Ohio.

FOR SALE.—Northern-bred red-clover queens. Untested, 75 cts.; tested, $1.00. E. S. WATSON,
R. F. D. No. 2. Madison, Maine.

FOR SALE.—Italian, Carniolan, and Caucasian queens. Untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Stamps not accepted. EDWARD REDDOUT, Baldwinsville, N. Y.

Bees by the pound in July, caged on combs with stores, $1.00. With mismated queens, $1.25. With untested queens, $1.60. In lots of 10 lbs. only or more. B. F. AVERILL, Howardsville, Va.

Red-clover Italian queens exclusively, one of the best honey-gathering strains in existence. Untested, 75 cts. each; 6 for $4.25; virgin, from pure Italian mothers, 30 cts.
F. M. MAYBERRY, Lederach, Pa.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

Carniolan queens from imported mother mated to drones from imported mother in yard remote from other bees, $1.00 each; $9.00 per dozen. Queens not purely mated, also Banat queens not purely mated, 75 cts. each; $7.50 per dozen.
E. H. HAFFORD, Fennville, Mich.

## Real Estate for Bee-keepers

FOR SALE.—56½ acres, good comfortable buildings; water, timber, fruits of all kinds; two miles of Sweetwater, Monroe Co., Tenn.; 50 stands of bees in eight-frame hives; can not care for them on account of poor health. R. N. RANDALL, Rt. 3. Sweetwater, Tenn.

## Honey and Wax for Sale

FOR SALE.—New No. 1 white clover comb honey at $3.50 per case of 24 sections; less than six cases, 25 cts. per case extra. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Clover and raspberry honey. Rich, ripened on the hives in *sealed* combs. Delicious flavor preserved entire by canning as extracted. 120-lb. case (two cans), $10.75. 10,000 lbs. ripening on hives. I can ship a few choice orders at once. Sample on request. F. B. CAVANAGH, Boscobel, Wis.

FOR SALE.—Choice extracted honey for table use — thick, well ripened, delicious flavor; color, light amber; remained on hives for months after being sealed over. Price 8 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts. J. P. MOORE, queen-breeder, Morgan, Ky.

## Honey and Wax Wanted

WANTED.—Two cars choice white extracted honey. We pay cash. We have also for sale a splendid lot of second-hand 60-lb. cans. J. A. BUCHANAN & SONS, Holliday's Cove, W. Va.

WANTED.—White ripe extracted honey; will pay cash. GEORGE RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water Street, Chicago, Ill.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

I club a high-grade Italian queen with GLEANINGS, new o renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden Italian queens, 75 cts. each. Satisfaction guaranteed. WALTER S. HOSS, 1127 Blaine Ave., Indianapolis, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

SWARTHMORE Golden-all-over queens—the famous original stock. Queen-rearing outfits and books; 40-page catalog. E. L. PRATT, Swarthmore, Pa.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

Order your bee-supplies from Superior Honey Co., Ogden, Utah, at Root's catalog prices. You save time and money. Largest dealers in the West.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND, Birmingham, Erie Co., Ohio.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.— Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians and Carniolans, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

## Forty Years Among the Bees

by Dr. C. C. Miller

This is the plain unvarnished story of Dr. Miller's bee-keeping experiences for a term of forty years and more. He was probably the first man in America to depend solely on bees for a living, and for this reason alone the book is well worth reading. He has taken a prominent part in building up the bee industry of America in all those fateful years from the time bee culture was an infant industry until now. This has given him a fund of rich experience to draw on, and he freely uses it for the benefit of his readers. He has adopted throughout his book a simple conversational style which makes him readily understood, and renders the book easy reading to any bee-keeper. Even the beginner enjoys it. To the comb-honey producer it is of engrossing interest, for Dr. Miller is what we term a comb-honey man. In a delightful way he tells what he has done in the past, what he is doing now and what he intends to do in the future, giving the reasons for his change of mind. The extracted-honey men also like to read this simple narrative because the principles of comb-honey production are much the same as in producing extracted honey. He does not hide away the smallest detail, and one soon becomes acquainted with his family circle, his home and its surroundings, his helpers, his out-apiaries, and all that goes to make up home life and life's work. This impresses the reader in a way that the ordinary bee-keepers' manuals can not do. However, the work is not intended as an instruction-book in bee-keeping, but it affords an excellent supplement to any of our well-known manuals of bee culture. No comb-honey man should be without it, because its author is one of the most successful comb-honey men this country has produced. He has no "secrets," but tells all he knows in a way that is convincing. What adds to the interest is the fact that he lives in a locality not particularly well adapted to bees, because the winters are long and the honey flora somewhat uncertain. The print is large and clear, so that it may be read by lamp-light when the bees are in the cellar and the snow lies deep. Order a copy—only a dollar, postpaid.

THE A. I. ROOT COMPANY, MEDINA, OHIO.

# Special Notices by A. I. Root

OUR CORNFIELD UP TO DATE.

I am happy to tell you that the cornfield mentioned in Homes in this issue has now, under the influence of exceedingly favorable weather and careful cultivation, the reputation of being one of the best-looking fields in this part of the State. The second planting came on nicely with favorable weather; but in order to prevent having more than four stalks in a hill, some expensive thinning-out had to be done. But I think it pays, especially at the present price of corn.

BASSWOOD-TREES—GROWING THEM FOR HONEY, LUMBER, ETC.

I would remind our readers who are interested in the matter that we have a lot of leaflets to give away, with the above title. Since this leaflet was printed in 1905, some of our basswood-trees from seedlings that came up in 1897 are now in bloom, so we can answer, at least to some extent, the question, "How long before a basswood-tree may bear honey?" These I have mentioned are furnishing quite a little bloom in ten or eleven years after the seed was planted. As the trees we send out by mail and express are from three to five years old, I think you may get some bloom from the larger size in five or six years. It will take, however, fifteen to twenty years for basswoods ordinarily to get large enough to furnish honey of any account. But as they are beautiful trees for shade, and are getting to be every year more and more valuable for lumber, I think it is an excellent plan to put them out where you want shade-trees, or where the ground is not particularly valuable for any thing else. We generally expect basswoods to be fairly in bloom by July 4, and more or less honey comes in from basswood all through July. These dates will be earlier in the South and later in the North. In Northern Michigan we get some basswood honey even in August. This year some of our early trees were opening their blossoms on the 18th and 19th of June, which is quite a little earlier than I have ever noticed them before.

A WATERING AND FEEDING DEVICE FOR LITTLE CHICKS.

A good housekeeper, as you may have noticed, keeps her things put up out of the way. When E. R. R. was a little chap his mother had so diligently instilled into his mind the importance of having his things all hung up neatly and in order that one day he almost cried, and I do not know but he *did* cry, because he could not hang up the cups and saucers; and from that day to this the Roots and Rootlets have all been instructed to hang their things up on the wall instead of letting them lie around on the floor. Even the extra shoes and overshoes must be put away out of sight. When I remonstrated, Mrs. Root explained that the work of sweeping and taking care of the room is very much less when even the shoes and overshoes are hung up on their appropriate nails; and if said shoes are to be some time out of use it is a splendid plan to put them in a light cloth bag and hang the bag up on a nail. This keeps them clean, bright, and shiny, when they are wanted in a hurry when cold weather happens to come unexpectedly.

Well, I am not writing to-day about boots and shoes, nor even about housekeeping, unless, indeed, my notes should come under the head of "Housekeeping for Poultry." If you will look on p. 638, May 15, at that little poultry-house, you will notice there is a stairway for fowls to go up into the loft. Well, under this stairway was a sitting hen; and when her chickens were hatched, to prevent the older chicks from annoying the newly hatched ones and their mother I shut them under the stairway with netting. Now, there is but little room in this small inclosure. But I wanted to provide them with both food and water, and put it in shape so it would take but little room and be protected from dirt and litter. I succeeded admirably by making two little poultry-feeders of pint tin pans after the plan shown in our book, "What to Do," page 178. These pans hang up by appropriate rings, one on each side of the doorway. Every chick has learned its location so it can get water or feed at any time when it is inclined. During the day time I let the hen out; but there is an opening at the bottom to admit small chicks, but not the older ones or the other fowls. Whenever these chicks get hungry or thirsty they go back to their well-known home under the stairway and get refreshment. These little pan feeders hang up so closely against the wall that they occupy almost no room at all. They are put high enough so the chicks can just reach the opening; and as the chicks grow, the pans can be hung to another nail a little higher up on the wall. These feeders have some advantages over any of the other devices I have seen in any of the poultry-books and journals. First, they are so close to the wall that they occupy almost no room at all; secondly, these beveled tops prevent the chicks from standing on them or from catching droppings. If put up as high as the chicks can reach, no trash or filth will even get into the openings; and after some little experimenting I am glad to note that our tinners can afford them at the low price of 15 cts. each, or two for 25 cts. If wanted by mail, the postage will be 6 cts. each extra. Of course, this price is for the smaller sizes. For full-grown fowls we want something made of a good-sized tin pan or washbasin. While the food and water are constantly in sight, none of it can get out until the chicks use it out.

I am so much pleased with this watering-device for baby chicks that I want you all to see it; and so I have decided to send one free to every one who sends $1.00 for GLEANINGS (asking for no other premium) and includes 6 cts. for postage. I will try to give you a picture of it in our next issue.

# SPECIAL NOTICES

## BY OUR BUSINESS MANAGER

Customers of J. W. K. Shaw & Co., Loreauville, La., will please note that, owing to an enforced absence from home, and the want of competent help, they will discontinue sending out queens for a month or two. Will report for duty later.

SWEET-CLOVER SEED.

It is still early to gather seed from sweet clover; but we desire to make the fact known early that we are in the market when this season's crop is gathered, for several tons of white-sweet-clover seed. We have already contracted for what we shall need of the yellow variety. When you have any to furnish, send us a sample, stating price you ask and quantity you can furnish.

BEESWAX MARKET.

From this date till further notice we will pay 28 cents cash, 30 in trade, for average wax delivered here or at our branch offices. We drop the extra cent a pound we have been paying during the month of June. Be sure to mark your box so it may be identified, and write, telling how many pounds you ship, sending shipping receipt.

DANZ. SHIPPING-CASES FOR 20 4x5x1⅜ SECTIONS.

We have about one hundred cases to hold 20 4x5 sections, all nailed up and packed in reshipping-cases. They have been used, but are clean and in good condition. We offer them as they stand for $1.50 per crate of 8 cases, or the lot at $1.25 per crate. This is a special bargain, as they are all ready to pack honey in for shipment at less than the price of new cases in the flat.

SECOND-HAND 60-LB. CANS.

We have on hand from one to two hundred second-hand five-gallon cans, two in a case, in fair condition, which we offer at $4.00 for 10 cases; 25 cases or over, at 35 cents. They are all looked over, boxes put in good shape, and no cans included which are rusted on the inside so far as we can determine by careful examination. They ought to be worth this price, especially for cheap grades of honey.

JAPANESE BUCKWHEAT FOR SEED.

The demand for this has been so brisk that we have disposed of our stock of nearly 200 bushels, and will doubtless receive further orders which we shall not be able to fill if we do not succeed in finding a further supply. If any of our readers have any surplus seed, or know of any for sale, we should be pleased to hear from you with sample, stating quantity you have to furnish, and the price, 50 lbs. to the bushel.

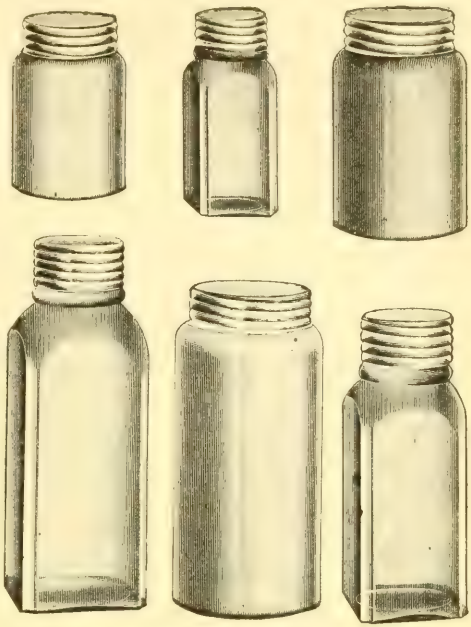
NO. 2 OR B GRADE SECTIONS.

We have plenty of this grade in all regular styles and sizes except 4¼x4¼x1⅞ 2 beeway. We have over a million of this size in stock in A grade, and are out of B grade. If you want this size promptly, do not order B grade. The lumber we are working now is so nice that it does not produce very many B-grade sections. For several weeks we have been working off colored lumber to produce a larger proportion of B grade; but this is all used up, and we are now using new stock cut the past winter, which is very nice and white.

FIRE AT ST. PAUL BRANCH.

Since our last I have visited our St. Paul branch to adjust the fire loss with the insurance company. The damage to building and goods amounted to about $2500, fully insured. In separate warehouses there was over $2600 worth of goods untouched. Many of those in the building where the fire occurred escaped injury, while others were only slightly damaged by smoke and others by water. Some goods were, of course, destroyed. On another page we list some of the slightly damaged goods at special prices. There are others which were not listed in time for this issue. Those, especially in the Northwest, who are interested will do well to communicate with our St. Paul office. There are some rare bargains in the lot. The price was put low to close them out quick and make room for new stock. They are supplied with every thing needed in fresh goods, having received a car before this paper is mailed, added to the good stock already on hand.

# GLASS HONEY-PACKAGES



## HERSHISER JARS

round and square, with satin-finish aluminum caps.

There is nothing handsomer made for exhibiting honey or for bottling for a fancy trade. We have recently put in a large stock, not only here at Medina, but in Chicago, New York, and Philadelphia, from any of which points the jars are supplied at the following prices:

PRICE LIST OF HERSHISER JARS.

| | | | |
|---|---|---|---|
| ¼-lb. square jars with aluminum cap, | $ .95 | case 2 doz. | Wt. 10 lbs. |
| ½ " " " " " " | 1.10 | " " " " | 15 " |
| 1 " " " " " " | 1.50 | " " " " | 24 " |
| 2 " " " " " " | 1.00 | " 1 " " | 20 " |
| ½ " round " " " " | 1.15 | " 2 " " | 14 " |
| 1 " " " " " " | 1.50 | " " " " | 24 " |
| 2 " " " " " " | 1.05 | " " " " | 18 " |

We can also supply the square jars with cork stoppers, either in partitioned cases or in crates, including the corks, from any of the four points named, as follows.

| | | | |
|---|---|---|---|
| 5-oz. sq. jar in reshipping-cases, | $ .80 | case 2 doz.; | $3.35 crate 1 gross |
| ½-lb. " " " " " | 1.00 | " " " | 4.25 " " " |
| 1 " " " " " " | 1.20 | " " " | 5.75 " " " |
| 2 " " " " " " | 1.60 | " " " | 7.50 " " " |

## TAPER-PANEL JARS

½ and 1 lb. capacity.

This is a new jar which we are introducing this year, and we believe it is a winner. It has been made especially for us. The cap is a very neat and simple one, securely closing the jar honey-tight. At the low price for which we offer it, this jar should have a large sale. We have them packed only in reshipping-cases of two dozen each, ready to ship when filled with honey, without additional packing.

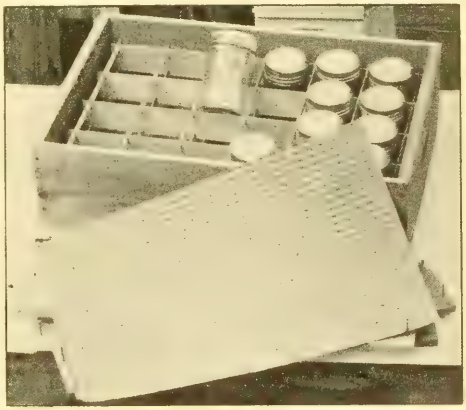
½-lb. taper-panel jar in reshipping-cases, 80 cts. per case; 6 cases, $4.50. Wt. 18 lbs.

1-lb. taper-panel jar in reshipping-cases, $1.00 per case; 6 cases, $5.70. Wt. 25 lbs.

## SIMPLEX JAR. NO. 25 JAR.

These are two popular jars of 1-lb. capacity, of which we have sold large quantities. For a year we were unable to get any more Simplex; but they are being made again; and while they are costing us more than they did, they are such a handsome jar that we have secured a further supply. The No. 25 jar we can furnish either with the porcelain top with lacquered band and rubber ring, or with lacquered tin cap lined with thick wax-paper wad. This latter style costs less than the other, and will not be subject to so much breakage in shipping. These are all packed in reshipping-cases of two dozen each at the following prices:

| | | | |
|---|---|---|---|
| Simplex, in reshipping-cases, | $1.10 | case; 6 cases, | $6.30. Wt. 24 lbs. |
| No. 25, porcelain top, " | 1.10 | " " " | 6.30. " 25 " |
| No. 25, tin top, " | .90 | " " " | 5.10. " 22 " |



## TIP-TOP JARS.

This is a reliable jar with glass top, rubber ring, and spring-top fastener. We have it in two sizes, holding ½ and 1 lb., packed either in reshipping-cases or crates of one gross at the following price:

Half-pound Tip-top jars in reshipping-cases, $1.00 per case of 2 dozen; $5.00 per crate of 1 gross; 1-lb. Tip-top jars in reshipping-cases, $1.10 per case of 2 doz.; $5.50 per crate of 1 gross.

## HALF-POUND TUMBLER, NO. 12.

For a cheap glass package for half-pound of honey the tin-top tumbler is very popular. We supply with these tumblers, besides the tin top, a wax-paper disk for sealing it tight when filled with honey. These are packed four dozen to case, or 32 dozen to barrel, at the following prices:

No. 12 half-pound tumblers, $1.00 per case of 4 doz.; $6.00 per barrel of 32 doz.

## MASON FRUIT-JARS.

These are very largely used for canning fruit, and are often used for honey as well. As we buy them by the carload, we can make the following prices at Medina, all put up complete with porcelain-lined caps and rubbers, in cases of one dozen.

| | | | | | |
|---|---|---|---|---|---|
| Pint size | Dozen ... 52c | Six dozen ... | $3.00 | Twelve dozen .... | $5.75 |
| Quart size | " .... 55c | " .... | 3.10 | " .... | 6.00 |
| Half-gallon size | " ... 75c | " .... | 4.35 | " .... | 8.50 |

Triumph wrenches for Mason jars, 15c each; by mail, 20c.

**The A. I. ROOT COMPANY - MEDINA OHIO, U. S. A.**

THE
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THAT SELLS AND EXCELS
IS FOUND IN
DADANT'S
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and
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DEPARTMENT G, :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# FIRE SALE

.. of ..

# BEE-SUPPLIES

## AT ST. PAUL MINN.

Of special importance to North-western Bee-keepers.

Owing to a fire in our St. Paul warehouse we are obliged to sacrifice a considerable portion of our stock which suffered from smoke and water. In most cases the goods are not materially injured, yet at the same time they can not be sold for new goods. In some instances the goods are slightly scorched, but not enough to hurt. We have put the prices down low enough so that the purchaser will find he has saved considerable money by the transaction.

**PARTIAL LIST OF DAMAGED GOODS.**

**The injured goods are not all listed here. Better go and inspect the stock—You can secure a bargain.**

2 doz. Dixie bee-brushes @ 10c.
300 thick-top frames @ $2.00.
200 Danz. section-holders @ $1.50.
5500 No. 2 4¼x1⅞ Sec., 2-bee-way, @ $2.25 M.
7500 " " " " 4 " @ $2.35 M.
5000 " 1 " " " " @ $2.50 M.
6000 " " " " 2 " @ $2.50 M.
5 8–8 supers, in flat, $1.25 for lot.
5 4P–8 " " $2.00 " "
5 4I–10 " " $2.00 " "
5 5–8 Dov. bodies and frames, $2.00 for lot.
Ex.-thin super fdn. @ 60c per lb.
" Ideal-size @ 60c
Thin super, regular size, @ 55c per lb.
" " Ideal size, @ 55c per lb.
" " Danz. size, @ 55c.
Light-brood, L. size, @ 52.
" " shallow, @ 52c.
Med. " Jumbo, @ 50c.
" " Danz., @ 50c.
" " shallow, @ 50c.
" " shallow Danz., @ 50c.
500 T tins, 13-in., $2.00 for lot.
100 wire strips for honey-boards, $1.25 for lot.
60 No. 2 zinc honey-boards @ 12c.
143 No. 1 zinc honey-boards @ 10c.
2 5-lb. coils wire @ 75c.
36 Root foundation-fasteners @ 10c.
5 Porter bee-escapes @ 15c.
6 yds. silk tulle @ 50c.
4 yds. cotton tulle @ 20c.
8 L. W. Bing. smokers @ 45c.
3 Conq. " " @ 60c.
1 Engine " " @ $1.00.
6 Danz. smokers @ 75c.
4 Root Jr. @ 50c.
3 Standard @ 75c.
4 rolls enamel cloth @ $1.50.
50 West's cell-protectors @ 3c.
380 I fences at $1.00 per 100.
100 plain section-holders @ $1.00.
100 Jumbo Hoffman frames @ $2.25.
54 Daisy lamps @ 20c.
10 Parker machines at 10c.—(5 Ideal; 5 4¼)
13 Manum swarm-catchers @ 50c; with pole, 75c.
50 Alley traps, 8-ft., @ 25c.
47 Doolittle feeders, nailed, L. size, @ 20c.
15 " " " Danz. size, @ 20c.
80 boxes two 5-gal. cans @ $4.00 for 10.
18 chaff div. boards @ 15c.
80 Clark smokers @ 30c; by mail, 50c.
28 Daisy fdn.-fasteners @ 50c; with lamp, 75c.

HIVES AND PARTS.

7 5–10, nailed and painted, @ 50c.
11 5–8 " " " @ 45c.
14 4S–10 @ 50c.
10 4P–8 @ 45c.
9 4S–8 @ 45c.
1 D5–8 @ 25.
1 4M–8 sp. @ 50c.
2 4M–8 @ 50c.
6 4M–10 @ 60c.
3 4M–10 (burned) @ 25c.
8 E–10 @ 25c.
1 A–10 @ 15c.
1 B–10 @ 15c.
8 A and B–10 @ 10c.
3 E–8 @ 20c.

Address only **A. I. ROOT CO.,** H. G. ACKLIN, Mgr.

**1024 Mississippi St. ST. PAUL, MINN.**

# WOULD YOU HAVE RAISED YOUR HAND?

"All those who want to go to heaven, please raise their hands," said the Sunday-school teacher to a class of little boys.

One boy's hand did not come up.

"Why, James, don't you want to go to heaven?"

"No, ma'm; I prefer to stay on earth."

Most of us would agree with James, just for the present. And, after all, old Earth is a pretty good paradise if we are of a mind to make it so or know how to get at its beauties, instructions, entertainments, and interests. The Maker pronounced it "good," but many of us fail to get at the large fullness of its goodness.

The poet Browning said, "God must be glad one loves his world so much."

I have often wished Browning had told us also what God thinks of those who do not appreciate his beautiful world.

By the way, in which class are you? If you really desire to know more and love better this wonderful and beautiful world, you will find efficient, inspiring aid in

## THE GUIDE TO NATURE.

This magazine is in the spirit of James, who thought this earth is a pretty good place for residence—just for a while. Even if you are ninety years of age you may keep young in spirit, and retain the charm of original relation to natural objects.

Let us tell you how to do it. I mean you who deeply love honey-bees and have a big heart for landscapes and plant and animal life—you who find education and recreation in natural objects—you who ward off laziness or discouragement by saying with the Psalmist, "I will lift up mine eyes unto the hills, from whence cometh my help."

Let me tell you the rest of the story.

**EDWARD F. BIGELOW,** the nature-study bee-man.
**Editor of THE GUIDE TO NATURE,**
**STAMFORD, CONNECTICUT.**

Send $1.50 for a year; 50 cts. for trial four months,
or 15 cts. for single copy.

# Gleanings in Bee Culture

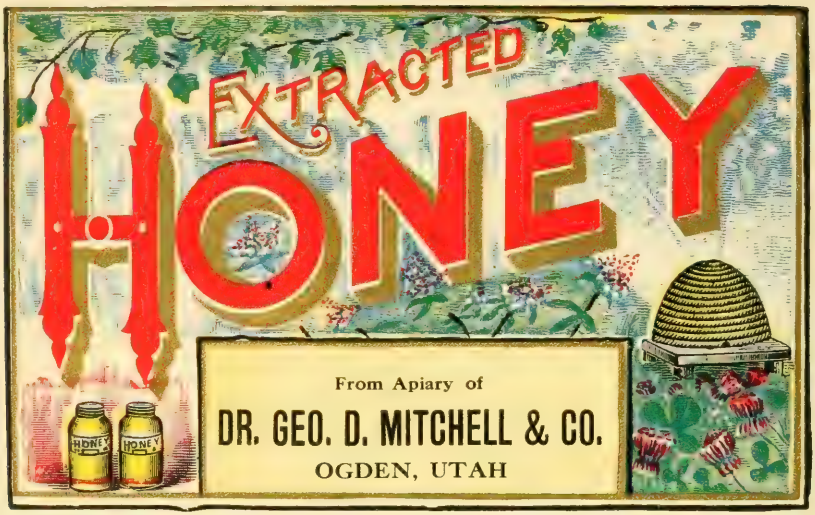
Swiss Bee Station at Mürren.

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI JULY 15, 1908 No. 14

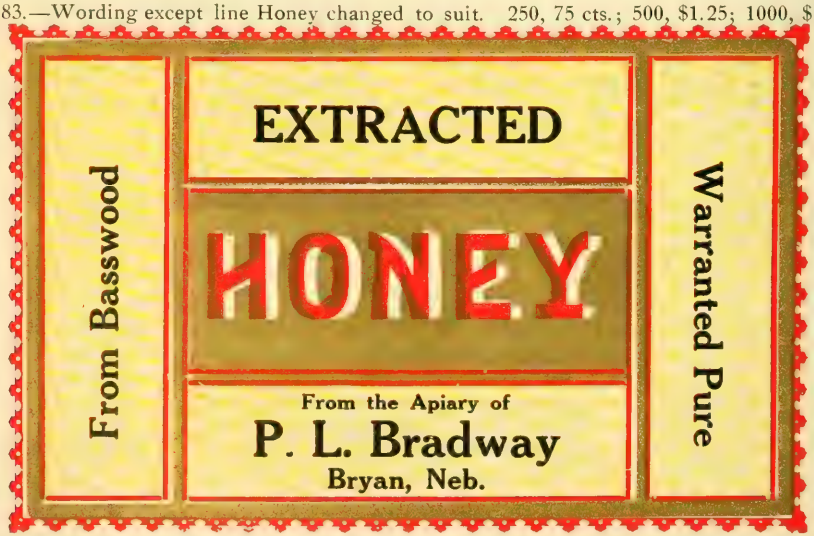
# *Honey-labels for Honey-packages*




No. 81.—Wording below line Honey changed to suit. 250, $1.00; 500, $1.50; 1000, $2.25.

No. 86.—Wording except line Honey changed to suit. 250, 75 cts.; 500, $1.25; 1000, $1.75.

No. 83.—Wording except line Honey changed to suit. 250, 75 cts.; 500, $1.25; 1000, $1.75.

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*The A. I. ROOT CO., Medina, Ohio*

# C. H. W. WEBER

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# BEE SUPPLIES

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**ROOT'S GOODS EXCLUSIVELY**

**AT ROOT'S FACTORY PRICES**

NO CHARGE TO DEPOTS
FOR DRAYAGE.

## HONEY WANTED.

Fancy white clover, EXTRACTED and COMB. State how it is put up, and price expected delivered in Cincinnati.

# C. H. W. WEBER

Office and Salesroom, 2146-2148 Central Ave.
Warehouse, Freeman and Central Avenue.

**CINCINNATI, .. .. .. OHIO**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

NO. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

NO. 2.—Three-fourths of the total surface must be filled and sealed.

NO. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

CINCINNATI.—The market on comb honey is very slow; some new goods have arrived, but there is no demand, and it is selling slow at 14. There is some new white-clover extracted honey coming in, selling at 7½. Amber in barrels is selling at 6 and 6¼. Beeswax is selling at $33.00 per 100 lbs.

July 1. C. H. W. WEBER, Cincinnati, O.

ST. LOUIS.—The honey market is very quiet. There is absolutely no demand for comb honey. Extracted honey is also neglected, consequently the prices have declined. Quote as follows: Fancy white comb honey, 15 to 16; No. 1, white and amber, 12 to 14; broken and defective, less. Extracted white, in cans, nominal at 8 to 8½; amber, 7 to 7½; in barrels, 5½ to 6; granulated extracted honey sells at less. Beeswax, 29 for prime; impure and inferior, less. R. HARTMANN PRODUCE CO.,

July 1 St. Louis, Mo.

NEW YORK.—Comb honey: The demand is next to nothing, and has been so for the past four months. A few crates of fancy No. 1 white are called for once in a while, while off grades and dark are entirely neglected. As there is practically no demand, quotations are simply nominal. We have more in stock than we can dispose of. The honey will have to be carried over until next fall. We can not encourage shipments of comb honey, as we do not think we shall be in position to render account of sales within reasonable time. Extracted honey: Demand better and market slightly improving. New crop is arriving quite freely from the South, where the yield seems to have been pretty large. We quote California white sage at 8½ to 9; light amber, 7½ to 8; amber, 6 to 6½; new crop Southern from 58 to 75 per gallon, according to quality. West India honey is arriving in fairly good-size lots and finds ready sale at from 60 to 62 per gallon, duty paid. Beeswax in good demand, and firm at 30 to 31.

June 24. HILDRETH & SEGELKEN,
265-7 Greenwich St., New York.

ZANESVILLE.—There is a little better demand for honey on this market. No. 1 to fancy white comb brings wholesale about 17 cts. for Cuban and 18 for native. For clover honey grading No. 1 to fancy, jobbers are paying 15 cts. on arrival. There is a very limited demand for extracted. For good yellow beeswax I offer 30 cts. f. o. b. here in exchange for bee-supplies.

EDMUND W. PEIRCE,

July 7. Zanesville, O.

INDIANAPOLIS.—A large crop of honey has been secured throughout the clover belt, and the quality is above the average. The demand is excellent, but thus far no established schedule of prices can be named. I would urge producers who ship their honey to have an understanding about prices, and not consign their goods to commission houses, as it is the commission house that beats down the prices in competition. Beeswax brings 28 cts. cash or 30 in exchange for goods.

Indianapolis, July 4. WALTER S. POUDER.

DENVER.—We are entirely closed out of comb honey, and ready to receive consignments of new-crop comb, the first arrivals of which should move quickly at good prices if fancy stock. Extracted honey is in fair demand. We quote white extracted, 8 to 9; light amber and strained, 6¾ to 7½. We pay 25 for clean yellow wax delivered here.

THE COLORADO HONEY-PRODUCERS' ASS'N,

Denver, June 23. F. Rauchfuss, Manager.

SAN FRANCISCO.—The receipts of honey are still quite light, and every one is preparing for a short crop. Prices remain unchanged but firm. All honey is sold readily on arrival. Water-white comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5¾.—*Pacific Rural Press.*

LIVERPOOL.—Our market is firm, though no business has been done. Only a little inquiry, and quotations remain unchanged. Chilean, 4 to 6⅓; Peruvian, 3½ to 5⅓; California, 7½ to 9; Jamaican, 4 to 5⅓; Haiti, 6⅓ to 6½. Beeswax is firm. African, 30 to 32; American, 31 to 34; West Indian, 29 to 32; Chilean, 31 to 36; Jamaican, 34 to 35.

TAYLOR & CO., 7 Tithebarn St.

CINCINNATI.—The demand for comb honey has fallen off considerably in the past twelve months. Last year the comb-honey market was bare in February, but this season finds an abundance of that article everywhere at this date, which is late for last season's crop. We can not tell at present what effect this state of affairs will have upon the market when the new honey comes in. The market on extracted honey shows some life, but is not moving rapidly. Quote amber in barrels at 6 to 6½, according to the quality; fancy extracted honey, 7½ to 9. For choice yellow beeswax, free from dirt, we are now paying 28 cts. cash and 30 in trade, delivered here.

June 25. THE FRED W. MUTH CO., Cincinnati, O.

PHILADELPHIA.—The prospects at present are for one of the largest crops of honey we have seen in the East for the last ten years. The result is, prices are uneasy and have a strong downward tendency. Some few little lots of comb honey are being offered, but not enough to establish a price. We are looking for very low prices the coming season. Beeswax is firm at 28.

June 30. WM. A. SELSER, Philadelphia, Pa.

BOSTON.—Fancy white comb honey, 17; No. 1 white comb, 16; California white sage, extracted, 9; California light amber, 8; Southern honey in barrels, slow sale, 5 to 6.

June 22. BLAKE-LEE CO., Boston, Mass.

# Our Wants for Honey are Unlimited.

It will pay you to mail us a sample and correspond with us, as we are always buying all grades of amber and fancy extracted honey, as well as **Fancy Comb Honey** in no-drip shipping-cases. .. .. .. ..

NO MATTER HOW MUCH OR HOW LITTLE YOU HAVE TO OFFER.

WE REMIT THE DAY SHIPMENTS ARRIVE.

## The Fred W. Muth Co.

**THE BUSY BEE-MEN**

**51 Walnut St. Cincinnati, Ohio**

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Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

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We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

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FOR SALE —It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

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The perforated side grate seen above holds a **removable, metal, asbestos-backed** fire shell, **preventing burning** the **tin off the outer case,** and deflects the air at **right angles, preventing back draft** to the **valveless** bellows. The air, passing to the back and over the top, **cools** and **expels** the smoke, fanning the burning fuel at top or side till **all consumed,** giving **cool smoke** for hours from one filling. **It can't clog.** No top-heavy cap to **choke with soot;** no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove **its success beyond a doubt,** expensive dies making it **uniformly perfect as possible to devise.** We **confidently guarantee full satisfaction or refund the price.**

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Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

**F. DANZENBAKER, Norfolk, Va.**
**or Medina, O.**

**Mr. T. S. Hall, Jasper, Ga.,** breeder of fine Italian queens, writes, June 11, 1908: "The three smokers came all O. K., and they are dandies, **sure; are good smokers.** We burn corn-cobs in them **all right.** We may send you orders for smokers, as several have expressed a desire for one."

**Dr. R. Munson, Washington, D. C.,** says: "Your new smoker has a much stronger blast than the first one. I have been using the first one with a roll of newspaper, first starting the fire at the bottom, and it works finely that way, and stays lit all day. Firing it up at 8 A. M. and using it half an hour in my queen-rearing hives, and, setting it aside, I usually find it still smoking ready for use at 4 or 5 P. M."

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### SUBURBAN LIFE.

The above is a periodical that has sprung into a wide popularity the last few years. There are several reasons for its large circulation. One is the whole-souled enthusiastic way it praises rural life. This causes the city man to remember the days of his youth when he was a raw-looking country boy picking blackberries on the old homestead. It causes the rural dweller to take a new interest in his quiet existence. He *spruces* up. His home is made far tidier and homelike than it used to be, because he is emulated by the excellent example of others whose work he finds exemplified in *Suburban Life*. The beautiful pictures he sees in this magazine fill him with a heart-felt desire to have a little of heaven here on earth. If the goodman of the house does not appreciate the charm of these pictures his wife does to the very utmost; and if *he* does not subscribe, *she* will. Many who never half appreciated the beauty of the fields and woods around the old homestead have been brought to a realizing sense of the charm of nature right where they live. They realize that country life is not lonely with lovely plants, birds, animals, and insects all around them in great numbers. The bright ideas they get from such magazines have a real value in dollars and cents, to say nothing about the inspiration conveyed by very many beautiful pictures, so that the subscription money is not begrudged. *Suburban Life* works on a far higher plane than the ordinary farm paper, and yet it does it in such a manner that he who runs may read, for the language is direct and simple. Many suppose that magazines of this class are gotten up for city folks or fancy farmers with much money to spend; but as a matter of fact they are not. The idea is to glorify rural life, to the end that the dwellers will be happier and more contented with their lot because of the great possibilities all around them.

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WEST MICHIGAN STATE FAIR, GRAND RAPIDS, SEPT. 14—18, 1908.

PREMIUM LIST OF THE APIARIAN DEPARTMENT.

*A. G. Woodman, Supt., Grand Rapids.*

Competition open to Michigan only.

1. Entries must be made before 6 P.M., Sept. 3, 1908.

2. Nuclei must be exhibited in such shape as to be seen on at least two sides, and should not be so crowded with bees but that the queen can be easily found.

3. Bees must not be allowed to fly during the hours of exhibition; all honey shown to be the product of the exhibitor, and produced during the season of 1908.

4. All strains of bees are to be bred by the exhibitor, and grown or produced in Michigan. They must be plainly labeled, and placed in observatory hives, the appearance of the hive to be considered.

5. In judging the display of comb and ex racted honey, a quantity up to the amount of 500 lbs. each will be considered in making the awards.

6. Exhibits of all kinds of implements and bee-keepers' supplies are invited, for which space will be provided. A diploma will be awarded for the best exhibits.

7. In judging honey, etc., the following scale of points will be used: Style, 10; body, 20; color, 30; flavor, 40.

LIST OF PREMIUMS.

1203 Display of comb honey—quality, quantity (up to the amount of 500 lbs.); appearance and condition for market to be considered. Premiums will be paid on a basis of 5 cts. per section for first; 4 cts. per section for second, and 3 cts. per section for third, for actual number of sections of comb honey shown. Maximum amount of premiums, $25.00, $20.00, $15.00 respectively.

1204 Specimen case of comb honey, not less than 10 lbs., quality and condition for market to be considered—$5.00, $3.00, $2.00.

1205 Display of extracted honey—quality, quantity (up to 500 lbs.); appearance and condition for market to be considered. Premiums to be paid on a basis of 5 cts. per lb. for first; 4 cts. per lb. for second, and 3 cts. per lb. for third, for actual amount shown. Maximum amount of premiums, $25.00, $20.00, $15.00 respectively.

1206 Specimen of extracted honey, not less than 1 lb—flavor, color, body, and style to be considered—$3.00, $2 00, $1.00.

1207 Display of extracted honey in granulated form—appearance, quality, and quantity (up to the amount of 150 lbs.) to be considered. Premiums are to be paid on a basis of 5 cts. per lb. for first; 4 cts. per lb. for second, and 3 cts. per lb. for third, for actual number of pounds shown. Maximum amount of premiums, $7.50, $6.00, $4.50 respectively.

1208 Most attractive display of beeswax—quality and quantity (up to the amount of 150 lbs.) to be considered. Premiums are to be paid on a basis of 5 cts. per lb. for first; 4 cts. per lb. for second, and 3 cts. per lb. for third, for actual number of pounds shown. Maximum amount of premiums, $7.50, $6.00, $4.50 respectively.

1209 Most attractive display of best honey-producing plants, pressed, mounted, and named, not to exceed 25 varieties—$5.00, $3.00, $2.00.

1210 Italian bees and queen, single-frame nucleus, in observatory hive—$3.00, $2.00, $1.00.

1211 Black bees and queen, single-frame nucleus, in observatory hive—$3.00, $2.00, $1.00.

1212 Carniolan bees and queen, single-frame nucleus, in observatory hive—$3.00, $2.00, $1.00.

1213 Caucasian bees and queens, single-comb nucleus, in observatory hive—$3.00, $2.00, $1.00.

1214 Queen-rearing nucleus showing frame of queen-cells, in observatory hive—$5.00, $3.00, $2.00.

1215 Full colony in full-size observatory hive, showing different parts and appliances of hive, most instructive—$3.00, $2.00, $1.00.

1216 Largest, best, and most instructive display of nuclei of different races of bees in single-comb observatory hive—$5.00, $3.00, $2.00.

1217 Largest, best, most interesting, attractive, and instructive exhibition in this department, all things to be considered—$15.00, $10.00, $5.00.

# RASPBERRY HONEY

My brother and myself have five apiaries in the wild-red-raspberry region of Northern Michigan, where we are harvesting a crop of unusually fine quality. Not a pound is extracted until it has been thoroughly ripened and sealed over, and it is thick, rich, and delicious. We are putting it up in bright *new* 60-lb. tin cans, two in a case (the ends of the cases are bound with hoop iron to protect them in shipment), and offering it at ten cents a pound—$12 00 for a case of two cans. To some this may seem a trifle high in price; but it must be remembered that it costs more to produce such honey as this, and it is worth more; besides, to a certain extent it is a novelty. It is *raspberry* honey — a honey with a flavor all its own — a flavor that smacks of the wild red raspberry of the woods. It is the honey that won the gold medal at the Jamestown Exposition against all other honeys from all over the United States. The dealer who builds up a trade for this honey can hold it against all odds.

If not acquainted with this honey, send me ten cents and I'll mail you a generous sample, and the ten cents may apply on the first order that you send.

**W. Z. HUTCHINSON, Flint, Mich.**

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Soon they will want room or will swarm.

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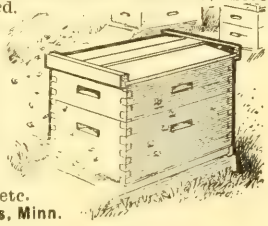

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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z. HUTCHINSON, editor and proprietor of the *Bee-Keepers' Review*, and author of Advanced Bee Culture.

No bee-keeper's library can be at all complete without a copy of this magnificent apiarian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal.*

This work of 536 pages is, as its name implies, a complete cyclopædia of everything pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of GLEANINGS, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and out-apiaries; Dr. E F. Phillips on the eye, parthenogenesis, and scent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say any thing about a book of which already 100,000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee-keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner; and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal.* Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide" and "The Honey-bee."

**"If goods are wanted quick, send to Pouder."**

# FLOWING WITH MILK AND HONEY

*By the Bee Crank.*

The official forecast for the year 1908, from all sections of the country, remind one of the figurative language of the Israelites who were sent to spy out the land of Canaan—it is a land flowing with milk and honey. Not in many years has there been the promise of such an abundant crop, and the bee-men are coming in for their share of the good things. There will be plenty of honey of a very high grade.

How will you profit by it, Mr. Beeman? Most surely by securing the supplies needed to enable you to harvest and to handle the yield that is yours for the taking, and by securing these supplies where you can get them promptly.

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I pay 28 cts. cash or 30 cts. in trade for good average beeswax, and shall be glad if you will favor me by sending your wax here.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

H. H. ROOT, Assistant Editor
A. I. ROOT, Editor Home Department

E. R. ROOT, Editor

A. L. BOYDEN, Advertising Manager
J. T. CALVERT, Business Manager

VOL. XXXVI JULY 15, 1908 NO. 14

## STRAY STRAWS

DR. C. C. MILLER

WHITE CLOVER showed its first blossom May 25; yellow sweet clover, June 1; white sweet clover, June 24. That 23 days of yellow in advance of white sweet clover would be quite an item in a year of failure of white clover.

A FRAME of young brood helps to decide whether a virgin is present in a nucleus. If no cells are started it is reasonably certain that she is there all right. But two or three cells are sometimes started, even with a virgin present. If a whole lot are started you may count your virgin is gone. [Right you are, on both propositions.—ED.]

M. M. BALDRIDGE, instead of putting a weak colony over a strong one in spring, reverses the Alexander plan, putting the strong colony over the weak one on the stand of the strong one, an excluder between. This, when dandelions or other flow is on, at sundown, not smoking the weak colony, and smoking the strong one just enough to make the bees leave the bottom-board. Three years' trial of both plans has shown that the weak colony builds up more rapidly by the Baldridge plan.

WHETHER because of the yellow bees I have been getting in, or because of the season, swarming is very bad this year. One colony that swarmed, not only had no advanced cells but not even an egg could be found in a queen-cell in the hive! [By "yellow bees" we suppose you mean Italians. Do we infer that the latter swarm more than your hybrids and blacks? If all of them swarm, then we should attribute this swarming to the peculiarity of the season rather than to the yellow blood.—ED.]

J. E. HAND, referring to your remarks, p. 819, I will say that I know of no reason for thinking that my colonies that stored under the brood-nest were in an abnormal condition. The large number of colonies engaged in it rather precludes the idea of played-out queens; and, although I can not say positively, my impression is that among the number were some that made the very best records at storing. I think, friend Hand, if you could have seen the white combs of honey built in those spaces in bottom-boards, with the vigorous colonies above, you would have shaken your head and said, "Well, every now and then we must give up some of our preconceived notions; there goes another."

I DON'T KNOW why Hervey B. Jones should have had his failure with foundation splints. You are right, Mr. Editor, that splinted foundation should be given only when honey is coming in; but even if given in a dearth I've never known the bees to do much at cutting out the splints. The trouble is that, in a dearth, they dig away a passage between foundation and bottom-bar. The only thing I can think of is that the splints were not properly coated with wax. They should be boiled in wax till all the moisture fries out, and, when taken from the wax to be fastened on the foundation, the wax should be merely hot enough to be liquid, but not hot enough to run entirely off the splints. With the splint well coated with wax, why should the bees tear at it any more than at the foundation itself?

WHITE CLOVER is more abundant than ever before. I think I've said that before. It was true then; it's more emphatically true now. Fields are far and away whiter with the bloom than ever before. There's nectar in it too. Not only do the bees drop at the entrance as they come in heavily laden, but they drop on the hives and surrounding grass. I suspect there is five times as much nectar as the bees can take care of. [This is the kind of report that we are getting from many sections of the clover belt. It is very remarkable the way reports have come in. One locality will show a most tremendous honey-flow, while another one, only a few miles away, and in the same State, will show "almost nothing doing." It is peculiar this year that large areas will produce a large amount of honey; but in those areas there are pockets where there is little or no nectar.—ED.]

I THINK I've heard it said that, under some conditions, as much comb as extracted honey can be produced. I don't see how that can be if the bees have no comb to build for the extracted. Say that it takes a pound of comb to contain 20 lbs. of honey, or 5 lbs. of comb for 100 lbs. of honey. If it takes 10 lbs. of honey to make one of wax it takes 50 of honey to make that 5 lbs. of wax. So 150 lbs. of honey must be gathered for 100 lbs. of comb honey. If these figures be correct, there can in no case be less than 50 per cent more extracted than comb. To be sure, it may take less than 10 lbs of honey to make a pound of wax; but even if it takes only 5 lbs. of honey for one of wax, that still makes 25 per cent more of extracted than comb. Then it must not be forgotten that it takes bees to secrete the wax and to build the comb. If bees are released from this duty in the extracting-super it means a greater number of bees in the field. Don't tell me that bees won't go afield before 16 days old. I've *seen* them do it under stress when only 5 days old, and I don't believe a bee will loaf around doing nothing until 16 days old if there is no housework for her to do, and she can find work in the field. [We should like to see this question discussed by those who are in position to give us

some data and facts, as it has a very direct bearing on the question of whether one should produce comb or extracted honey.—ED.]

WALTZING bees, are they carrying on that way to shake off wax scales or to show they've found some new honey or pollen? p. 830. If it were throwing off wax scales, there would be a lot of them at it all the time when wax is being secreted, and generally it's only a single bee at a time. I'm skeptical about the heralding a new find of honey or pollen. If Prof. Gaston Bonnier is correct about the explorers who make the finds, waltzing should be seen only in the morning. Is it thus limited? Besides, explorers are supposed to have attained considerable maturity; and did you ever see any but a rather youthful bee engaged in the dizzy waltz? There's one good reason I can see for it: Whenever a man thinks he knows all about bees, you can settle him by asking, "What is the meaning of bees waltzing and raking?" [The one who thinks he "knows it all" will often answer your last question with a degree of assurance that makes one feel like putting him down as an ignoramus. However this may be, it is generally believed that the waltzers are young bees, and that their act is a sign of joy that they have found pollen, and that they take this means to communicate the knowledge to their fellows.—ED.]

"FIGURES printed on heavy tagboard manila, boiled in paraffine," are commended, p. 799, for hive-numbering. A few years ago I got a set of 100, and within two years I had to replace them with a hand-painted set. They don't fill the bill at all. I think, Mr. Editor, there are thousands of bee-keepers who would not object to ¾ cent for each aluminum figure. That would make it cost $1.44 to number the first 100 hives (a great many would need no more), and $2.25 for each succeeding 100. For one, I'm ready to put in an order for a set with duty added to the price. But can't they be made as cheaply here as in Germany? [When you say you have tried figures printed on heavy cardboard manila boiled in paraffine we suspect you refer to number-tags we sent you two or three years ago. Those were soaked in *linseed oil*, *not* boiled in *paraffine*, as you apparently infer. One who says he has tried both the paraffine boiled, and the tag soaked in linseed, says there is a very great difference between the two. The former will hold its color and shape, while the latter will turn black as you describe.

No, we can not make the metal tags as cheap as they can be made in Germany. Labor is cheaper there, especially skilled labor, and that is what is required to make dies. If the bee-keepers of this country will put up a strong enough demand we will see that that demand is supplied. —ED.]

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THE Corn Products Co., according to newspaper reports, have placed an order in Argentina for 100,000 bushels of corn to keep their factories running. They claim to be losing money at present prices, and that is probably true. They require corn at low prices. Hitherto they have made much of the fact that they were heavy buyers of American corn. Continued high prices would force them out of business.

W. K. M.

# EDITORIAL

By E. R. ROOT.

HONEY will be of exceptionally fine quality this season, for it will be mainly clover. If it is clover, it is good enough for anybody.

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ARE you going to the National convention that is to be held in Detroit Oct. 13, 14, and 15? This convention promises to be very interesting as well as a big one. Don't miss the chance to attend.

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WHITE clover is still hanging on in our locality; and, what is more, reports from a large number of localities, north and south of the Ohio River, and as far east as the Atlantic coast, show the same thing. Strangely enough, there are pockets where there is drouth and no honey, surrounded by moisture and honey.

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### GEO. E. HILTON WINS A MEDAL AT JAMESTOWN.

AT the Jamestown exposition there were not many honey exhibits. The one made by Ohio called forth considerable comment. But there was one exhibit by Mr. Geo. E. Hilton, President of the National Bee-keepers' Association, that won the gold medal. Unlike some of these so-called medals it was of solid gold, with an intrinsic value of $175.

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### A HIVE-CAGE.

A SPLENDID thing to stop robbing and to catch swarms is a little wire cage, just large enough to be set down over the largest hive, and leave six or eight inches clearance around the hive and on top. If one discovers a swarm just coming out, he can clap this right over the hive and catch nearly the entire swarm. The whole cage may then be picked up and the bees dumped in front of the hive that has been prepared for it. During the robbing season such a cage is invaluable.

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### BEE-KEEPERS, ATTENTION!

THE following has just been received:

The most dreaded of all diseases, foul brood, exists in various parts of Massachusetts. This disease can be easily eradicated. It is of great importance that all bee-keepers satisfy themselves at once whether they have the disease. To enable them to determine this point, and in order to teach them how to get rid of the disease, the State Board of Agriculture and the Massachusetts Experiment Station will unite in holding an institute to demonstrate the treatment necessary to cure it.

Mr. Charles Stewart, one of the foul-brood inspectors of New York, has been engaged to make a demonstration. This will take place in Ludlow, at the farm of Mr. E. N. Fisher, on July 21. Mr. Stewart will show the proper methods of treatment, and no bee-keeper in the State should fail to be present at the demonstration. WM. P. BROOKS, *Director*.

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### GREASY WASTE AS A SMOKER FUEL.

WE have several times spoken of the excellence of greasy waste, such as can be obtained at a machine-shop or printing-office, as a smoker fuel. It gives a pure lasting smoke with almost no sparks; and, what is more, it does not gum up the smoker as does ordinary fuel. In our opinion, it leaves every thing else clear in the shade. The waste should not be too greasy, but just such as an ordinary machine-shop is glad to get rid of for the asking. Two or three bushels of it will

last one almost an entire season, as it goes a long way.

VERY LITTLE HONEY IN SOUTHERN CALIFORNIA.

In answer to our request for reports from California, page 741, there has been a flood of responses, all denying that there has been a heavy honey-flow in Southern California as reported in the newspaper clipping. They all assert that the crop has been light, and that there will be very little, if any, sage honey shipped eastward. In the orange district there have been some fair flows; but orange honey has never been any great factor in the eastern markets. As it is a very fine article, having a strong demand at home, it will probably be a scarce article away from California.

HIVE-LIFTING DEVICE.

We are experimenting with a hive-lifting device. We feel that there has been a long-felt want, as yet unsupplied by the dealer and manufacturer, for some simple effective device that will relieve the strain of lifting heavy supers, either for the purpose of putting empties under or for taking them off the hive. There are many ladies who would like to keep bees if they could avoid the lifting; and there are many men, either from age or ill health, who find it inadvisable to put any hard strain on the back. Your humble servant, E. R. R., strained his back years ago, and ever since has been unable to do any lifting of heavy weights. He has been testing some hive-lifting devices, and is now of the opinion that some one of them may be made very useful to those who have not the muscle and sinew of a strong vigorous man. We shall have more to say about these at another time.

TRAGIC DEATH OF AN OLD GLEANINGS CORRESPONDENT.

Our older readers will remember Mr. C. Davenport, of "Southern Minnesota," who used to write such racy, practical articles. He was not a prolific writer, but when he did write he commanded attention. He was one of the few whose communications are passed directly to the printers without reading the manuscript, as we had absolute confidence in the availability of his matter. Within a year or so we have not been favored with any thing from him, for he was a very busy man.

Mr. Davenport, or, rather, C. Davenport Monette, of Chatfield, Minn., for that was his real name and address, preferred to use a *nom de plume*, as he said his business was such that he would not be able to answer any correspondence except through the printed page.

We are now pained to observe through the papers of his tragic death, which occurred recently. He was burned to death in his own home, where he lived alone, and had the reputation of being a very successful and practical bee-keeper. No particulars are known of the manner or cause of the fire; but his charred bones were found just in front of what was the doorway, indicating that he had made an effort to escape. He was only 42 years old, and was one of the brightest bee-keepers that we had in our ranks. Our sympathies are extended to his parents, who lived but a short distance away.

"BEE DISEASES IN MASSACHUSETTS."

There has just been issued from the United States Department of Agriculture, Bureau of Entomology, Bulletin No. 75, Part III, entitled "Bee Diseases in Massachusetts," by Burton N. Gates, Expert in Apiculture. As its title indicates, it has to do particularly with bee diseases, European (black), and old-fashioned or American foul brood.

A very interesting and instructive map is made a part of this bulletin, showing the distribution of both these diseases, not only in Massachusetts but in Connecticut, Vermont, and New Hampshire. European foul brood seems by all odds the most prevalent in both Massachusetts and Connecticut. The author thinks it was imported from York State, where it has been raging for years back.

The old-fashioned or American foul brood has been prevalent in both States for a considerable length of time, but is not of recent origin, Mr. Gates thinks.

In this connection it appears that the ravages of bee-moth have had something to do with the spread of disease, not because the moth is the primal source, but because a colony, when it is once reduced in strength by it, is made an easy victim of contagious diseases.

The spread of foul brood has also been brought about in part, says Mr. Gates, by bees kept in cucumber-greenhouses to fertilize the fruit-blossoms, for there are many of these establishments in Massachusetts. The bees, under these conditions, die in great numbers, with the result that the colony is weakened, and finally succumbs altogether. The hives with their combs are then thrown out where they are exposed, when another hive is put in its place to repeat the process. Of course, if there is any disease it is spread broadcast by the means. These greenhouse men do not, of course, know much about bee diseases, and are thus innocently one of the causes of spreading them over the State.

This whole bulletin is highly interesting, instructive, and valuable, and somehow we have the impression that it is the purpose of the Bureau to investigate other sections of the country in the same careful, painstaking way. If so, it will be the means of doing a great deal more good.

The map affords a very interesting study, and we hope to present a half-tone of it in these columns at an early date, if there are no objections.

Mr. Gates, under the direction of Dr. Phillips, is doing good work, and we hope the Bureau will see its way clear to make an investigation of other sections of the country. There is a very great need of it, for almost daily we are receiving samples of diseased brood from all parts of the country, with the request that we furnish information.

CAUCASIANS AT OUR SOUTH YARD; SOME OF THEIR UNDESIRABLE TRAITS; THEIR PROPENSITY TO SWARM, RAISE DRONES, AND TO BUILD QUANTITIES OF BRACE-COMBS.

When we established our south yard last fall, we placed in it all of our Caucasian colonies and their crosses, as we thought it better to have them remote from our main breeding-yard at Medina, where we are rearing exclusively Italians. This

made in all between 35 and 40 colonies of the dark strain. In addition to this we put in this same yard about an equal number of Italians of various strains. It was our purpose to test both Caucasians and Italians side by side to determine their relative merits as to gentleness, honey-gathering qualities, etc.

So far we have refrained from offering any opinion until we could test the Caucasians for honey, any more than to state that we found them excessive breeders of drones (see page 683) — so much so that a few colonies of Caucasians in a yard with a lot of Italians, if not restrained with drone-traps, would breed out the yellow blood in very short order.

But how about their other qualities? We have not found them to be any gentler than the average run of Italians; neither have we found them to be any crosser. They will stand some kinds of banging in cool weather that the average Italians will not. They are slightly more nervous, and at times fly up *en masse* as if they were about to sting, but after all making little more than a big bluff. Colony by colony, season in and season out, with ordinary care one will receive as many stings from Caucasians as from Italians. But before we go further, we ought to state that we have in the yard two strains of Caucasians. We have never had any of the government strain of Caucasians, and therefore can not speak of those bees.

But you may ask how our Caucasians are for honey. Early in the season, and during the fore part of the flow, they ran neck and neck with our best Italians; and, what is more, the cappings of their combs were whiter than those made by the yellow bees; but this slight advantage is more than offset by their habit of daubing every thing with propolis. Brand-new frames they smear all over in three months' time, and make them look as if they were four or five years old.

THEIR SWARMING PROPENSITY.

We went down to look them over yesterday, July 7, and we were chagrined to find that something over 95 per cent of them had swarmed right when they were doing their very best work, while less than 5 per cent of the Italians, under precisely the same management, had swarmed. To say that we were surprised and disgusted is putting it mildly.

As we have previously explained, we have been working this yard alone, except a very little help from the boys. We ran the yard for extracted honey in shallow supers. Having calls for some Caucasian queens, pure and mismated, we went down to the south yard and proceeded to fill our orders. We then looked over hive after hive of Caucasians with the above result—they swarmed. Fortunately we had drone-traps on all but two; and the virgins coming on made way with the old queens, and, of course, their colonies began to sulk. We did not, as perhaps we should have done, make an examination of the brood-nest; but we didn't know the Caucasians.

Year after year we worked hives of Italians on this same tier-up principle, for extracted honey, and we never found it necessary to go into the brood-nest. As we found the combs began to whiten we would add extra supers, putting empties under the partly filled ones up to about the middle of the flow, after that reversing the order. We expected, of course, the same procedure would work with the Caucasians, as it always had worked for us with the Italians, and as it worked this year under precisely the same conditions. Every one of the Caucasians and their crosses. with the exception of two, had swarmed, while we were up town attending to our office work—hives full of cells, some hatched and some not, and the colonies completely demoralized. The 35 colonies of Italians, in the same yard, with two single exceptions, went on taking in honey, and with those exceptions there was not a single colony that had a single cell in it or showed any indication of swarming.

You may say we ought to have known better, and that we ought not to have depended on surface indications at the entrance, at the tops, and under the sides of the combs, with *any* strain of bees. We admit that, had we gone through the brood-nests of the Caucasian colonies, cutting out the cells and the drone brood (and there were quantities of the latter), we might have checked the swarming to some extent. The fact remains, however, that we didn't have to do this with the Italians. No, they not only did not prepare to swarm but kept piling in the honey.

If this showing is a fair sample of Caucasians, and their swarming propensities can not readily be controlled in the production of *extracted* honey, what shall we say when we run them for the production of *comb?* If this yard had been exclusively Caucasian and its crosses, we might have laid the excessive swarming to the locality and season; but when it is understood that the 35 other colonies of Italians (except as mentioned) *in the same locality, in the same yard*, and *under precisely the same management, did not swarm, nor show any indications of it*, then we must perforce conclude that the difference was in the race.

But this is not all. The Caucasians are the worst bees we ever saw to plug in brace-combs. By this we mean spurs of wax between the *combs* and between the top-bars and not on top of them. There is occasionally a colony of Italians that will do this between the wide thick top-bars; but in our locality they are the exception, not the rule.

But even this is not all. The Caucasians stuck in brace-combs down between the frames in the very heart of the colony—so much so that it was very difficult to remove the frames. We will have some photos that will speak for themselves. While, of course, these brace-combs could be removed with the uncapping-knife, the act of drawing the combs out of the hive is very greatly impeded, to say nothing of the broken comb surfaces, and danger of killing queens and bees in the general stir-up.

We wish to make it clear that we are not condemning *all* Caucasians. There may be strains of them that do not show up the bad traits that we have found in ours. Our Caucasians as stated consist of two different strains—some of one and some of another; and we find that the crosses of Caucasians — that is, bees from Caucasian queens fertilized by an Italian drone—show the bad traits about as strongly as the pure bloods of the dark race, with the difference that the Caucasian-Italian is a little more vindictive than either of the pure races.

# CONVERSATIONS WITH DOOLITTLE

WORKING WITH VICIOUS BEES.

A correspondent writes, asking that I tell the readers of GLEANINGS how I master "awfully cross bees." I take it that he has bees which need more than the usual means to subdue them. Where I find a colony (as I do sometimes when others wish me to do some work with certain colonies in their apiaries) that will not yield to a few puffs of smoke blown in at the entrance, and then a little smoke blown over the tops of the frames when opening the hive, I always treat such "awfully" cross colonies as follows:

With the smoker burning nicely, and full of fuel, I step to the entrance of the hive and send into it a few puffs of smoke, blowing as strongly as possible so that the smoke may reach all through the hive as nearly as may be, when the entrance is closed, and the hive strongly jarred by being pounded with the doubled-up fist or a stick of wood. But the doubled-up fist is better, as one will not be likely to pound it hard enough to break down any combs, which may happen when striking with a heavy stick. This jarring, together with the smoke, causes the bees to fill themselves with honey, which can be hastened by opening the entrance in about a minute, puffing in more smoke, and then shutting and pounding again. If many bees from the fields have collected at the entrance it is better to let them run in before smoking the second time, as they will add to the hubbub by being greeted with smoke immediately after entering. In about three minutes from the time of starting, one can open up the worst colony of bees ever seen, when thus treated, without any of the bees offering to sting. But if the bees are of the black or hybrid variety they will run all over, out of the hive, down under the bottom-board, or almost anywhere instead of staying on their combs. For this reason, when treating black or hybrid bees I generally take some old box or cap to a hive, or in absence of these an empty hive, and set this on top of the colony to be treated, after first having removed the cover from over the frames to the colony, using smoke while doing so, and the smoking and pounding will cause the bees, after filling up with honey, to run up into the hive or box provided, in which place they are out of the way, and there is no danger of losing the queen. In this way bees will remain quiet for the time desired, after which they may be shaken down in front of their home, into which they will run like a swarm. Even the worst Cyprians I ever saw can be mastered in this way; but it needs about five minutes to put these into a thoroughly submissive state.

Now having told how the thing is done I wish to say that it is rare that as harsh treatment as this has to be resorted to, for 499 colonies out of 500 will allow of being handled without showing unreasonable temper with a few puffs of smoke at the entrance and a little over the tops of the frames when the hive is first opened. Yes, further, with 99 out of every 100 of my own colonies which I handle, I never think of blowlng any smoke in at the entrance—simply raise the covering over the frames as quietly as possible; and as the cover rises gently, draw the bellows of the smoker together so that a little smoke may float over the tops of the frames, when I do what I wish with the bees without further smoking. Many colonies can be handled without any smoke whatever; but without it the bees will be more or less in the way, so I use smoke very lightly, in this way, on every colony opened, even if I know they do not need it to keep them from being angry at the rudeness from the light being suddenly let in upon them. In all operations with the bees the motto should be," Use as little smoke as possible, but never be stampeded by any colony."

Another correspondent wishes me to tell why his bees are so cross, but gives me no data to go by. The Italian, Carniolan, and Caucasian bees are not cross without cause; but hybrids and Cyprian bees, as well as the Syrians and very many colonies of the blacks, are easily aroused—in fact, ready for "war" on the least provocation. Then if any hive is being robbed, or honey has been left out till robbing of the same has gotten well under way, the whole apiary, during a time of scarcity, may be suddenly turned "from lambs into tigers." The remedy here is very obvious. Tearing off the covers hastily, or bumping the hives while opening, before using any smoke, often exasperates the bees so that ten times the amount of smoke is needed before we can go on with our work which would not have been needed had we worked quietly and given a little smoke gently, just as the cover began to be raised from over the frames. Such a mode of treating the bees is much like the bad parent who gives the word and a blow, generally giving the blow first. Always treat the bees humanely, and give smoke first. Where ants have formed their homes about the top of the hives, so that they are ready to run in among the bees at the first crack being made between the hive and the cover as it is lifted, it often irritates the most peaceable colony, so that a severe smoking has to be given them before they will yield to the apiarist. Remedy—don't open the hive until you have stampeded the ants by killing or otherwise. I do not suppose many have trouble with snakes; but at our out-apiary there are quite a few small snakes—small enough to run in at the entrance of the hives. The bees do not seem to be able to sting the snakes, but they lay hold on them, when the snake will "thrash around," hitting the frames and causing an uproar sufficient to drive every thing away from the apiary for some hours unless the bees are subdued by a vigorous smoking and pounding. When working one day, a snake about fifteen inches long wiggled itself out from the hive with two or three hundred bees hanging to it hissing and trying to sting. I marked where it stopped, and, after subduing the bees (I came near being driven from the yard), I went and killed it; but an examination did not show a single sting about it anywhere. It got off much better than I did (save the killing), for I received forty or fifty stings, although I did the best I could short of running away. Then on cold days, or at times when honey is not coming in from the flowers, the old bees do not like to be disturbed, and occasionally will sting with a vengeance. I have worked at the bees during a pleasant forenoon, when the bees were busy, without

a single cross bee hovering about my head, only to be greeted with hundreds of them hanging to the veil on my hat, and singing that very interesting song they can sing when maddened, four hours later, after an unexpected three hours of rain. All of these things should be taken into consideration, and the bee-keeper be governed accordingly. When, from former experience, you know that the bees are likely to feel ugly, or are easily disturbed, use smoke till you see them "doff their hats;" and at times which point toward good nature a little smoke over the tops of the combs is all that is needed.

Borodino, N. Y.

# BEE-KEEPING IN THE SOUTHWEST

By Louis Scholl

Texas prospects have turned brighter than was expected a month ago. The mesquite-trees are loaded with bloom this month of June, and the bees are rolling in the honey in the good old-fashioned way — the way so many would like to see their bees do. Yes, and we are sure now that Texas will keep up its record as the leading honey-producing State.

### A NEW BULLETIN.

Bulletin No. 102, of the Department of Entomology, Texas Agricultural Experiment Stations, entitled "Texas Honey-plants," has recently been published. It is a preliminary bulletin on the honey-plants of Texas, containing a list of honey and pollen yielding plants so far collected by the writer, with data showing the distribution and the relative importance of each. Both the botanical and common names are given except in a few cases where the latter could not be obtained.

Although this bulletin is of a technical nature and the descriptions are brief, it is hoped that it will be a great help in many respects, especially in that it furnishes the bee-keeper with a list of the Texas honey-plants by which it may be possible to select locations, or it may help in selecting certain plants for planting that might prove of value. All who are interested may address the above department at College Station, Texas.

### THOSE BOTTOM-BARS, AGAIN.

Those wide-bottom-bars, Dr. Miller, are, nevertheless, a nuisance here, with most of us, even though they may not be with you, p. 682. Conditions differ in different localities; so do different strains of bees, as is also mentioned by our editor. This latter could be gotten rid of if a vigorous fight were made against all strains that have a tendency toward blocking great chunks of propolis between frames with such narrow spaces as yours. Where propolis is very plentiful, so that all colonies stick glue between the frames, it is quite another question — the propolis can't be so easily gotten rid of without sacrificing the whole locality. Where the locality is good, or even if the above-mentioned strains of bees are good ones, I'd favor narrower bottom-bars. I do not use dummies, first, because I can't use them in ten-frame hives with a full set of ten frames; and, second, because even in some eight-frame hives I have, the bees glue them in so they are a worse nuisance than the wide bottom-bar frames. Your nail-spacers would soon be transformed into great wads of propolis, and help the bees to fasten even the end-bars to each other. It's better not to have this much of a starting-place for the bees to stick their propolis. Just a plain, narrow, smooth frame, without any obstructions on it — and a narrow bottom-bar, of course — is the frame for me.

### "WITH ABUNDANCE OF STORES IN SIGHT."

This question has been harped on for some time without a definite conclusion being arrived at. If the apiarist will go into any average apiary he will find generally that the strongest and best working colonies are those with a lot of stores on hand. The "stores in sight" have something to do with the strength of the colony. It has a stimulating effect upon it; there is no doubt about that. It would be foolish, in my mind, to suppose, however, that simply because the "stores are in sight"—that is, that the bees are able to see the amount of honey they have ahead of them—is the true cause of their progressiveness. An abundance of stores stimulates brood-rearing, not because the bees see their way clear, but because it is drawn upon heavily, which incites the colony. A colony without this abundance of stores generally begins brood-rearing at the same rate as those with their hives full of honey, but soon has to give up the race, and fall behind. It is then they begin to restrict brood-rearing operations within the limitations of the food supply. This, however, is often not done until the entire stores have been used up, and the bees are required to gather the necessary food supply from the fields, while the colonies with an abundance on hand simply draw from this. The latter saves the workers while the former wears them out; and the result is, the fielders become scarcer as the season advances, in proportion to the brood reared. Under such conditions very few bees will be flying from colonies short of stores. In most cases there is an abundance of brood and adult bees, which might have been fielders, and which are retained as nurses. My remedy for such colonies, in the spring, is simply to set a shallow extracting-super, partly filled with honey, from some of the stronger ones, on top of each. This should be done before the above-mentioned condition has been reached, to prevent the setback that it gives all colonies that have been neglected too long. If done early, these colonies will keep pace with the stronger ones that have had an abundance of stores; and, even if it is done later, the colonies will soon recover.

In giving these stores the colonies are stimulated in the first place, and then the adult bees are saved from wearing themselves out in their efforts in obtaining the necessary food supply from outside sources. "One ounce of prevention is worth several pounds of cure" in this matter, and it can be accomplished by simply leaving enough honey in the hives in the fall so that all colonies will be saved the danger of running short in the critical moment when bee-life is worth a great deal in the spring.

This question has come to me: "If there is

such a thing as a colony of bees looking ahead, and taking inventory of the stores in sight, then arranging brood-rearing operations according to the food supply, why is it that so many colonies rear an abundance of brood with so little ahead that they are caught later with the hive full of brood and not a drop of honey?"

THE KINDS OF HONEY PRODUCED IN TEXAS.

Comb honey in sections was one of the main products of the up-to-date bee-keepers, but the great risk of shipping it safely in a hot climate, on account of the frailness of the article, resulted in frequent "smash-ups," and often in melting down when left in the hot sun. Besides, section honey is expensive to produce. To obviate these objections, comb honey is now produced in the regular frames, cut out, and packed in cans, liquid extracted honey being poured over the whole to fill the crevices, so that the combs are kept buoyin it, and kept from mashing. This kind of honey brings more dollars into the bee-keeper's pockets than section honey. It is easier produced, and more will be made by the bees in the frames. The demand for it is better, also, as the consumer gets more for his money; hence its production has replaced the section honey almost entirely.

Extracted honey is produced on a large scale here, and is still the old standby. More honey can be obtained with the honey-extractor, and the real profits are greater than comb-honey production. The only obstacle in the way heretofore has been the idea generally prevailing that such honey might be adulterated. Since the pure-food laws have been in effect this has been removed to a great extent, and now there is a tendency to resort more and more to producing extracted honey. In time this will largely replace comb-honey production here. Granulation of the honey has been a great drawback toward successfully marketing a crop later in the season when prices were stiffening; and to prevent the trouble of having the comb-honey granulate in the cans, making it unsalable, it was moved off rapidly by many bee-keepers, to their detriment, regarding the market price received. With extracted honey, educating the public how to reliquefy the granulated honey, and that it is the best proof of its purity, is all that is needed. Then such honey can be kept over the winter for better prices if need be.

Texas has its own standard-size packages for honey, both comb and extracted. These are all figured on a basis of 120 pounds to the case, or 60 pounds to a half-case. For extracted honey the regular 60-lb. square five-gallon cans, two in a case, prevail. These have a small opening of 1½ inches, with a screw cap. For comb honey the same size of cans, two in a case, have large eight-inch screw caps to admit the comb honey to be placed in it. Twelve-pound friction-top pails, 10 in a case, making 120 pounds; six-pound friction-top pails, 10 in a case, making 60 pounds, and 3-lb. friction-top cans, 20 in a case, also making 60 pounds, are used for both comb and extracted honey in smaller-sized packages for retailing in the original package. This standard is so well known now that orders are always made in accordance with the price list, which appears as follows:

PRICES OF HONEY.

| | Comb | Extracted |
|---|---|---|
| 60-lb. cans, 2 in a case, per lb. | | |
| 12 " " 10 " " | | |
| 6 " " 10 " " | | |
| 3 " " 20 " " | | |

TERMS.—Sight draft, bill of lading attached, subject to examination.

The freight rates on honey put up in this way are very low, as it goes at the fourth-class rate, while section comb honey must go in glass shipping-cases properly crated at double first-class freight rate, and at owner's risk; besides, the can packages are much safer.

New Braunfels, Texas.

# FANCIES AND FALLACIES

By J. E. CRANE

Liquefying candied comb honey seems to me a very decided step forward in our industry, and of great commercial value. I don't remember where the idea originated, but it seems to me it was not far from Medina.

That editorial, pages 413, 414, as to the value of sugar as a producer of muscular energy, almost takes one's breath away. "One pound of honey equal to five pounds of pork in dietetic value." I don't believe we bee-keepers have half appreciated our calling.

Dr. Miller, page 485, April 15, with a Stray Straw, would seem to knock over Mr. Doolittle's theory of the value of a number of dummies in a hive. But I fancy Mr. Doolittle uses section-frames for surplus instead of a regular-sized clamp or super, so he need not cover the top of a hive any further than combs of brood extend, and four dummies at the side of his brood-chamber will do no harm.

Dr. Miller says (page 411), "I don't know how bees know so much, but I think it is the general understanding that they are far-sighted enough to be more lavish in starting brood in spring with a big lot of honey in sight than with only enough to run them from day to day." That is a good thought, doctor, and I tell you it is hard building up a colony without some honey in the hive. I have had some experience along these lines this spring.

On the same page he says, "James C. White is wisely advised to tier up to prevent swarming. Let me add an item. Shove the second story either back or forward so as to make a ¼-inch crack for ventilation. Do this with each added story. This will double the security against swarming." The editor thinks him probably right, but fears so much ventilation will keep a large portion of the fielders at home to keep up the necessary temperature. Doubtless the weather would make some difference; but it seems to me that, during July and August, quite as many

fielders would be required to ventilate a hive two or three stories with only one entrance at the bottom as to keep up the temperature with more openings for ventilation.

On page 415 we are told that alsike-clover hay is beginning to have a special market value. "For race horses it is considered the best hay obtainable." An extensive dairyman who supplies our village with a large portion of its milk told me not long ago that the best hay he could produce as feed for milk was alsike-clover hay. The county in which I live has done a large business in producing American Merino sheep and shipping them as far as Australia and South Africa, and alsike-clover hay is preferred in transit to any other. Let's push its cultivation.

On page 433, April 1, C. F. Bender tells us some important facts in regard to the breeding of bees. It is especially interesting as showing how much more thought is given to this subject now than formerly. I do not remember that any thing was said or thought upon the improvement of bees, further than to introduce new races or breeds; yet I believe few persons who have handled bees extensively have failed to notice the great variation in different colonies of the same race or breed, often amounting to more than the difference between different breeds, and quite as great as among domestic animals. Experience has proved that bees are quite as responsive to careful breeding as any other stock.

Mr. Doolittle tells us, page 417, that the best results in production of comb honey are secured by having every comb in the brood-chamber full of brood. If not full of brood, take out combs of honey and fill with dummies of wood. Presumably a colony will store honey better over combs of brood than over combs of honey; but why will they store better over a wooden dummy than a comb of honey? I have failed to see any difference in favor of wooden combs or dummies over one of honey. But wouldn't it be better to fill out such hives, as the queen fails to fill with brood, with combs of brood from hives that are preparing to swarm, or that we have taken away to prevent their making such preparation? I prefer this to using wooden dummies.

I want personally to thank Dr. C. C. Miller for his interesting and practical article on the use of wooden splints in place of wiring frames to prevent sagging, page 423, April 1. I believe it the most practical method yet devised to prevent sagging, and propose to put it to the test at once. But really I found it quite a task to saw out those little sticks $\frac{1}{16}$ square. The method described by J. A. Green in GLEANINGS for May 1 seems like a great improvement.

Later I took a stick of black ash, eight inches long, and split it up into pieces one-half or three-fourths inch square, and by vigorous pounding I was able to split it into splints about $\frac{1}{32}$ inch in thickness, which in turn were again cut into very narrow strips. One of these, $\frac{1}{32}$ inch square, I found would hold up over ten pounds. But not every bee-keeper has a circular saw or black-ash timber. Perhaps the supply houses who furnish foundation can with it furnish splints. Another thing I have been thinking of, I wonder if the stems or stalks of certain grasses would not answer every purpose. Take, for instance, timothy or redtop, and cut off just below the head, and again eight inches below; soak when dry in wax, and press into the foundation the same as splints.

That statement by R. A. Burnett, page 422, April 1, to the effect that "if bee-keepers would allow their honey to ripen upon their hives it would do more toward creating a demand for it than any law against adulteration," seems like a pretty strong statement. We have bought some honey not perfectly ripened. I believe where such is the case it is through the ignorance of the producer, or perhaps I should say inexperience. We purchased last year from the bee-keepers of Northern and Eastern Michigan many thousands of pounds of extracted honey, and have failed to find a single pound that was not well ripened; but the bee-keepers of Michigan are a splendid lot of men, and seem as much interested in having it well ripened as in producing it.

We have got to look out for that Jay, p. 494, April 15, or he will upset all our previous notions and send us off on new lines before we know it. And now he would have us believe that if we keep 500 colonies in one place where only 50 are now kept there would not be more than two per cent less honey gathered per colony than now. The worst of it is, we can not deny that his guesses are about right during a good flow of honey. But, hold a minute. We do not always have good flows of honey; and when we do not we have to resort to the sugar-barrel and bank account. During a good flow of honey with abundant clover bloom I am satisfied 500 colonies could be kept in one place with satisfactory results; but when there are less flowers in spring and fall we should have to feed very heavily to keep all thriving. Mr. Alexander, who is the best authority in this country on very large apiaries, commences his article on page 504 by saying, "Feeding is becoming a very important part of our business." Just so; and the more the colonies are massed together the more important the feeding become. Where there is a good flow for four or five weeks, nine years out of ten, it will doubtless pay the careful, painstaking apiarist to keep large apiaries; but where other conditions prevail it seems doubtful.

I notice a typographical error in that most excellent review of Bulletin 110 of the United States Department of Agriculture, commencing on page 549. Near the top of page 450, in giving the United States standard for honey it says it "contains not more than 25 per cent of water, not more than 25 per cent of ash." It should have been $\frac{25}{100}$ per cent of ash—quite a difference.

I have been especially interested in the analysis of No. 23. A sample from the same lot of honey was pronounced by the New Hampshire State Board of Health as adulterated, and so published in one of their bulletins. The honey was produced in one of our own yards, and we knew of its

absolute purity. A considerable correspondence followed in which neither party was willing to admit he was in error. But better methods of analysis adopted by Dr. Browne show very conclusively where the trouble came from.

In the next bulletin issued by the New Hampshire Board of Health they state in a note on the last page, "*Concerning the Cane-sugar Content of Honey*," "In the last issue of the Bulletin a sample of honey bottled by J. E. Crane & Son, Middlebury, Vt., was reported as adulterated with cane sugar. It is, perhaps, due the firm to state that the adulteration was technical rather than of a fraudulent character, the quantity of cane sugar found being not greatly in excess of the recognized limit of that constituent. . . The maximum content of cane sugar recognized in pure honey by the United States Department of Agriculture is $\frac{8}{100}$, and this standard has also been specifically adopted by the legislatures of several States. When, therefore, this figure is materially exceeded it has been the custom to infer that such is due to the feeding of sucrose to the bees, either with fraudulent intent or carelessly. However, in the case under consideration Messrs. J. E. Crane & Son strenuously urge that they have been duly careful to feed no more than the least possible quantity of sugar required at the period when artificial feeding is necessary; and in view of the business reputation of the firm, and its standing in the industry, it is believed that this claim is conscientiously made."

Thus in a few sentences is saved the face of the New Hampshire Board of Health and the producers of this honey or seeming to. But it seems never to have occurred to them that their methods of analysis might be wrong.

If one gives careful attention to the tables of the United States bulletin referred to, it will be noticed that the samples of clover honey given contained from over $\frac{7}{100}$ per cent to no sucrose. Why this variation? It is caused by differences of soil or climate, or the time that has elapsed between the gathering or storing to the time the analysis was made. In regard to this the New Hampshire Board of Health, in the note above referred to, says: "There would seem to be opportunity for investigation relative to the possible bearing upon the sucrose content of modern methods of ripening and packing honey. As yet the exact nature of the agency causing the inversion of cane sugar in honey does not seem to have been determined; but it is certain that at least up to a certain point this inversion steadily proceeds after packing. The firm alluded to recently adopted the practice of pasteurization of their goods during their packing process. Comparative determinations made by us on several jars of the same output originally submitted to different treatments showed unexpectedly a higher sucrose content in the jars subjected to a temperature of 160 to 175 degrees Fahrenheit. Provided this phenomenon should be demonstrated to be a constant one, the only apparent explanation would be that the inversion is due mainly to a digestive ferment that is destroyed by the pasteurization process. In other words, does heating honey soon after being stored by the bees prevent those chemical changes taking place that would occur if left for a longer time without heating."

Middlebury, Vt.

# GLEANINGS FROM OUR FOREIGN EXCHANGES

By W. K. Morrison

The government of Denmark has voted a sum of money, and has also appointed a commission, to deal with the disease known as the foul brood of bees.

A writer in one of the European bee journals maintains that it is only from the second crop of red clover that bees extract any nectar. Is this so? The present writer imagines that *mammoth* clover produces all the so-called red-clover honey, or at least nearly all.

Monsieur Jacquemart, President of the local bee-keepers' society at Thimister, Belgium, has engaged a solid train for some date in July to convey the bees of the members of the society to the heather bloom. Evidently the presidency of a Belgian bee-keepers' society is no sinecure.

According to *L'Apiculture Nouvelle* the recent prices of foreign honey and beeswax in Hamburg are as follows: California honey, 8½ cts.; Chili, 5; Cuba, 4½; San Domingo, 4½; Mexico, 4½. Beeswax from Benguella, 30 cts.; Brazil, 31½; Chili, 31½; Cuba, 31; Madagascar, 29; Morocco, 30.

A writer in *Le Rucher Belge* states that only two authors, Reaumur and Della Rocca, have stated that the young queen leads the first swarm. On the other hand, Bevan, Quinby, Hamet, Drory, Bastian, Dubini, Dzierzon, Berlepsch, Vignole, Colin, Debeauvoys, De Layens, Cowan, Alley, Cheshire, Girard, Newman, Cook, Rauschenfels, Digges, and Root, affirm it is only the old queens that leave the hive at the head of the swarm. This is by way of reply to a Mr. Keller, who thinks the young queens frequently head the new swarm because he discovered one that did.

*Biene und ihre Zucht* is responsible for the statement that in Hannover alone 38 special trains are required to transport colonies of bees to the heather moors in autumn. That means 19 train loads of bees each way. This, it should be understood, does not represent American train loads. The cars are small, not more than five tons, and the locomotives are in the same proportion. Probably two American trains would accommodate the whole lot; but still this shows a very commendable and enterprising spirit on the part of German bee-keepers. Other states in Germany do equally well.

I note that the bee-keepers of the Nederlands, Denmark, Norway, Sweden, and Russia are very much inclined to follow the lead of America in bee culture. The bee-keeping journals quote Miller, Alexander, and Doolittle right along, and articles by noted Yankee bee-keepers are freely translated, and presented to their readers. This is the more remarkable because they are situated near Germany, a great bee country; and one would naturally suppose they would borrow

ideas from the Fatherland, but they do not. The Latin nations have already adopted the Langstroth system.

The *Revue Eclectique d'Apiculture* in its April and May issues has a long poem relating to the work of the bee-keeper. The authoress is Adele Vaillant, who evidently wields a facile pen as well as a smoker. This reminds me that we are far behind other nations when it comes to bee poetry. France, England, and Germany are well provided with bee poetry while we have but very little. The English have three classics on the subject by Virgil (translation); Murphy (tr.), and Evans. They also have "Buz a Buz," a translation from the German. The *Revue Eclectique* not long ago published a long bee poem going through a number of issues; and, besides, France is otherwise well provided.

The Algerian bee journal *Nahhla* (the Arabic word for *bee*) has been restarted. It is published by the Algerian Bee-keepers' Society, which is quite a lively affair. Professor Trabut, M. D., in the School of Medicine at Algiers, is honorary president, and other prominent public officials hold the various positions in the society. It gets a grant of money from the government, and in other ways has its co-operation. The chief object is to substitute the modern system of bee-keeping for that pursued by the Arabs and Kabyles. Algeria is naturally a fine bee country, resembling California, or, rather, Arizona. Bee-keeping there is more reliable than it is in California, however, as the apiarists seem to do pretty well every year.

European bee-keepers set much store by the locust-tree for bees. They term it *acacia*, which is a better name, but it is the same old black or yellow locust of the Northern States. Though strictly an American tree it is more highly valued in European countries than in its own land. The tree-planters of the old countries have planted great quantities of it until it is much more common there than it is in Ohio. A recent writer in *Le Rucher Belge* compares basswood and locust to the advantage of the latter, and it seems to me he is right. Most people would prefer locust to basswood honey, and it is a more reliable yielder; but in most localities there is not enough of it to count as an asset. In Berlin, acacia honey is a leader. Perhaps the day will come when locust honey will become as common in Cleveland, Cincinnati, and Chicago.

M. Alin Caillas, a prominent authority in France on the subject of honey analysis, has discovered that honey shows radio-activity. Some kinds of honey show the presence of radium more than others — notably so, honey from the department of Tarn and from Tunis. In *L'Apiculteur* he indicates by an illustration its effect on the photographic plate, showing a white striation not unlike the Milky Way on the sky. He says this is extraordinary, as honey is a vegetable production, and radium has been supposed to be purely mineral in its origin. At present it is extracted from pitchblende. He thinks this may account in part for the extraordinary value of honey as a food and medicine. He attributes high values to various constituents of honey usually present in small amounts, but enough for the purpose. In this list are included potassium, formic acid, chlorides, azotates, and carbonates.

A congress of bee-keepers was held June 25, in connection with the Franco-British exhibition now being held in London. The meeting was presided over by Lord Avebury (Sir John Lubbock), who delivered the address of welcome. Here is the program: "The Development of Bee-keeping as an Industry," by T. W. Cowan, author of "The Honey-bee" and other works—also editor of *The British Bee Journal*; "The Influence of more than one Queen in a Hive," by a French Bee-keeper; "On the Choice of a Hive," by Walter F. Reid, Esq., F. I. C., F. C. S.; "Does the Size of the Hive Influence the Yield of Honey?" by a French bee-keeper; "The Cure of Foul Brood," by M. E. Sevalle, Secretary of the French Society of Apiculturists, and editor of *L'Apiculteur*, of Paris. That is a very fine program. It could hardly be better.

# NOTES FROM CANADA

By R. F. Holtermann

### INSPECTORS FOR ONTARIO.

The following foul-brood Inspectors have been appointed for the Province of Ontario:

I. Essex, Kent, Lambton—W. A. Chrysler, Chatham, Ont.

II. Elgin, Middlesex, Perth, Huron—Jacob Alpaugh, Eden, Ont.

III. North Norfolk, South Norfolk, North Oxford, South Oxford, Waterloo, South Wellington, North Wellington—James Armstrong, Cheapside, Ont.

IV. Haldemand, Brant, Halton, Welland, Lincoln, Wentworth—Wm. McEvoy, Woodburn, Ont.

V. Peel, Dufferin, North Grey, South Grey, Simcoe, North Bruce, South Bruce—H. G. Sibbald, Claude, Ont.

VI. North York, East York, Ontario, Durham, Victoria—J. L. Byer, Mt. Joy, Ont.

In the remaining districts, owing to the difficulty of getting a thoroughly experienced man on the ground, an expert will be sent to inspect the district and find out what conditions are as to foul brood. Conflicting reports as to foul brood have appeared.

### THE SEASON.

In Canada, particularly Ontario and Quebec, quite a number of colonies have perished during the past winter and spring. The spring was, for bees, not as bad as a year previous, but the weather has been any thing but ideal. Colonies in shape are in many sections reaping a rich harvest at this date, June 26; basswood in this section promises well: conditions are favorable, but, as we all know, *something may happen*. The price of honey should not be low, but can not be as high as last year, as our imports of honey have, during the past ten years, increased thirty fold.

# GENERAL CORRESPONDENCE

## LEARNED BY EXPERIENCE.

### Some Valuable Points Brought Out by a Study of the Results During the Past Year or Two; a Convert to the Use of Bee-escapes.

BY E. F. ATWATER.

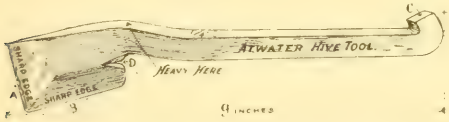
I wish to confess that, after years of non-use of bee-escapes in comb-honey yards, I am now a convert to the merits of that most excellent little appliance. I am using more of them every year. I may even begin to use them to take off extracting-supers. But for either kind of honey they are surely grand at the end of the season or when bees are inclined to rob.

You, Mr. Editor, have sometimes admitted that Dr. Miller's scheme of a tent escape on a pile of supers might be better for some, as it would save an extra trip to the yard to put on the Porter escape. Barring the likelihood of thieves, please don't admit it again. You do not need to make an extra trip. When you make your regular visit to the yard, put escapes under the finished supers. Then at the next regular trip take off the supers above escapes and repeat the process. In the interval the bees are sure to leave the super above the escape (unless it becomes clogged), as they have 7 to 10 times as long as usual in which to pass through the escape. This plan is successful. I never heard of such a method of using escapes, but no doubt others have practiced the same plan. In localities where foul brood exists, each colony should have an escape. Where no disease exists, two or three supers may be put above each escape, making quite a saving; but it may somewhat disturb the "balance" of your colonies.

In foul-brood districts all honey should be taken off with escapes. All daub is cleaned up inside the super before it comes off the hive, so there is less likelihood of robbers getting a taste, or of honey, possibly diseased, getting daubed around. *Use escapes.*

HIVE-TOOLS.

There are hive-tools and hive-tools; but the best single tool for universal use is made as shown in the cut. It is made of good spring or tool steel. This is the handiest thing to use in lifting frames or division-boards; saves putting one




hand among the bees. The hook was also designed to pull out springs and wedges from supers. At D a slot is used to pull nails of various sizes. The edges are ideal for scraping and prying, and easily inserted in joints between hives and supers.

ARE LARGE ENTRANCES SO IMPORTANT?

Friend E. R., I want to give you a friendly dig on "The importance of a large entrance in summer." While I prefer quite a large entrance, say 12 or 14 × ⅝, yet I have seen so much evidence on the other side that I no longer believe that there is any great advantage in such entrances. I want a deep space (⅝ or more) under the frames to facilitate manipulation and avoid having frames attached to the floor when a hive shrinks excessively. Of course, the advantage of a deep space beneath the frames may be easily had without necessarily using large entrances.

If I used a space of *more* than ⅝ inch under frames I should want the space to be much more, then fill with a loose frame of some kind, coming to within about ⅝ inch of the frame—bottom-bars to prevent comb-building in the space, as the bees, if a little crowded, are very apt to fill a space much greater than ⅝ inch. Mr. Yoder uses very small entrances and gets fine crops, and probably no larger a per cent of his bees attempt to swarm than among ours with their large entrances.

The same is true of the Dudleys, who, year after year, have taken some of the largest crops of comb honey in this valley. Mr. C. W. Dayton is another extensive producer who prefers small entrances. He thinks he gets better crops by using such entrances.

I must admit that the large entrance has but little influence on swarm prevention, and is often harmful in the spring when brood near the entrance is often chilled if the entrance is not properly contracted.

The large entrance may not be best where there is any disease, as robbers have too good a chance to steal treasures that may prove the undoing of the colony, and in outyards we can not at all times keep the entrances adjusted to fit the flow of nectar.

A WHEELBARROW FOR CARRYING SUPERS.

Really it pains me to see bee-keepers *carry* supers of honey from the yard to the shop. The cart will do on smooth ground; but on the average we prefer the wheelbarrow, and we send many hundreds of miles to get the *Daisy* spring wheelbarrow, as we know there is none other anywhere near so good, and we want the best. The Daisy is easy on the combs and easy on the man. At least one must be in each apiary. Better yet, have two so each man can use one. Their usefulness is not confined to taking off honey, as a large light box can be put on one; then when cleaning and scraping in the spring you have a good place at which to work and a good place to hold the cappings.

About the hive-carrier (page 557, 1907), you say, "Granted that his colonies are heavy and strong, two men can carry three as easily as they can carry one in his (Dr. Miller's) way." Please amend that to read, "Granted that *the two men* are heavy and strong," etc.

"An improved strain of bees," page 831, 1907. "Mate daughters of pure Cyprian mothers to pure Carniolan drones. Then daughters from these queens are mated to pure Italian drones." I know that this bee-hash results in good workers, and some of them are easily handled like any good Italian stock; but a few that are cross will be wonderfully cross, and will sicken ninety-nine out of one hundred who try them, from any further experiments along that line. By breeding again from the gentle colonies of this Cyprio-

Carniolan-Italian stock, possibly something may be done, as the Cyprian disposition is not so likely to recur. So far as color is concerned, I've had colonies of that cross, showing no trace of the Carniolan blood, but they are exceedingly prolific, and mostly white cappers of comb honey. Any cross containing much Cyprian blood will likely result in at least a few colonies that are perfect fiends to fight, and they will remember their encounter, and scour the neighborhood for days in search of innocent victims of their wrath. The best advice on Cyprian blood for the average bee-keeper is, "Let Cyprians alone."

ENTRANCES ABOVE EXCLUDERS.

Page 839, 1907, Mr. C. W. Dayton says, "Of course, it certainly is easier for the bees not to have the excluders on." Not so very much easier for my bees. I have an entrance above the excluder, which is utilized often by a large per cent of the field force. This entrance consists of a 1½-inch auger-hole with galvanized slide. I got the idea from friend Hansen, whose San Diego Co. "Sweetwater Apiary" was illustrated in GLEANINGS and the A B C book some years ago. Mr. Hansen values them highly. So do I.

DANDELIONS.

Page 840, 1907, that fine field of dandelions is much like some of this country. Some of my yards have thousands of acres of such bloom within easy range. During the past two springs the bees did well on them, though some years they yield little nectar. In 1906 and 1907 they put the bees in wonderful condition for the alfalfa flow, where they were plentiful.

DIVISIBLE HIVES.

The shallow-divisible-hive men (of whom I was once one of the most enthusiastic) sometimes say that the scarcity of lumber will be another point in favor of the shallow hive, as narrow lumber is cheaper than wide lumber. This might be a valid argument in a land where a tongued-and-grooved joint is unknown, or where no man ever thought of "butting" two narrow boards together to take the place of a wider one. I've used such hives, and they are fully as serviceable as any, and the joints are not even tongued and grooved. Boxes of some kinds are now made entirely of narrow boards, tongued and grooved, or fastened with metallic stays forced into the wood.

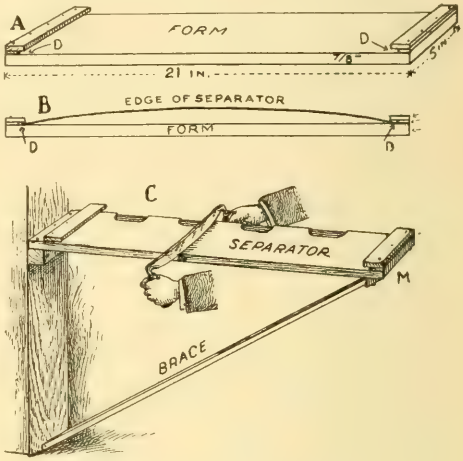
The really few (compared to others) who prefer the divisible brood-chamber are periodically possessed of the spirit of propaganda; but the vast majority who try such hives later abandon them, if all that I have seen and read is any criterion.

In many localities the man who puts a swarm or a colony in a single shallow brood-nest with supers above courts great loss, as the sections will be ruined with pollen *and no preventive is known.*

It would at least be charitable for the divisible-brood-chamber advocates to caution beginners with that hive against disaster from pollen in sections, as to many beginners it is a serious matter to lose the sale of a few supers of honey.

A QUICK METHOD OF CLEANING SEPARATORS.

One of the most monotonous, tiresome, and unpleasant jobs connected with large-scale comb-honey production is the annual cleaning of a vast number of bee-gummed separators. In many localities the separators must be thoroughly cleaned every year or else the necessary fixtures can not be crowded into a super. Another result, but not at all a bad one, is that the sections will hold more honey, as the propolis acts much like




ATWATER'S METHOD OF CLEANING SEPARATORS.

cleats on the separator. For this reason some bee-keepers seldom clean their separators; but when they *do, then* they have a job of no small proportions. As no rapid and satisfactory method of cleaning separators has ever been given to the bee-keeping public I will describe a method of my own invention—a method far more rapid than any that has been used in the past, and it results in separators just as good as new, if you wish them so. One hand is not almost worn out from holding a knife, as in the old plan.

The drawing shows the plan fully. Just 18¼ inches apart we nail on it, at the ends, pieces of section stuff ⅛×1⅜×5 inches. On these, and projecting ¼ inch inward, nail cleats ¼×1⅝×5 inches. This gives the cleated board complete, as at A. The cleats provide recesses at D D to engage the ends of the separators.

This cleated board is mounted as at C, with one end fast to a joist, the other supported by a diagonal brace.

B shows how the separator is to be put in place by springing it so the ends just go under the recesses at D D. It then lies flat, as shown in C. Now stand at M and take the drawing-knife by the handles. Keep the blade nearly at a right angle to the separator. With very thin separators you will find it necessary to do most of the cleaning from the middle *toward* you, and from the middle *away* from you, or the separator may spring out of place.

With thicker separators you may go at them rough-shod. When one side is clean, turn the separator over and repeat the process. Keep the recesses clean, and brush the loose propolis off the board occasionally.

After a little you will acquire the knack, and you will then find this the easiest and most rapid method of cleaning separators—a method that any hired help can easily master.

Meridian, Ida.

# PRESIDENT ULRICH KRAMER.

## A Brief History of Bee-keeping in Switzerland, Showing the Important Part that Kramer Plays.

BY DR. K. BRUENNICH.

[No American bee-keeper will object to the space occupied in this issue of GLEANINGS with a lucid account of what our brother bee-keepers in Switzerland are doing in promoting bee-keeping on scientific lines. We all admit that we owe much to the Swiss. Huber rendered us indebted for all time, and the little republic is always in the van of progress, be it bee-keeping or any other industry or science. Their love of liberty and independence enables them to carve out a path for themselves, and they never seem to lack leaders for any great work. From what Dr. Bruennich says, it is evident they possess in President Kramer, of the Swiss Bee-keepers' Association, a great man — one who is leading them onward and upward in apiculture. We are all glad to hear from our Swiss friends, and it is a pity we do not hear from them oftener.—W. K. M.]

The readers of GLEANINGS have seen from time to time the name of Ulrich Kramer, who, since 1896, has been President of our Swiss Bee-keepers' Association. To write the life of Kramer is to write the history of the successes of the Swiss bee-keepers, for the history of the S. B. K. A. during the last thirty years is closely connected with the name of Kramer. He is now 63. It was two years ago that I conversed with him about queen-rearing when he said to me, shaking my hand, "Still, it is a delight to live."

It is thirty years, perhaps, since Kramer the schoolmaster began bee-keeping. At that time the S. B. K. A. was very small, having possibly 200 members; but it was at a time when all the European bee-keepers had received a strong impulse from the bee-masters Dzierzon and Berlepsch, and quite a new life bloomed in the bee-yards.

ULRICH KRAMER, PRESIDENT OF THE SWISS BEE-KEEPERS' ASSOCIATION.

A SWISS TENEMENT HIVE.

In 1887 we find Mr. Kramer elected actuary of the S. B. K. A., which had then 270 members. In 1880 he was the first "wander teacher" to instruct novices in apiculture. Since 1884 the S. B. K. A. has consisted of a number of affiliated associations (to-day there are 103), with the following number of members: 1885, 504; 1895, 6370. Some years previous, Kramer had had a colony on the scales, and in 1884 he introduced apicultural stations, where the managers have to make exact observations on temperature, weather, increase and decrease on the scales (during the season, every evening and morning), etc. Until 1906 he was chief of all those stations (to-day there are 33), in which the results of the observations were summed up and compiled. The reports of the apicultural stations are printed every year in a book about the size of this journal.

In these reports we get a general view of the weather during the year; then follow the conditions of the year; a table of temperature; winter losses; dysentery; the first brood-nests; preliminary honey-flow; development of the colonies; size of the brood-nest; May disease (paralysis); the swarming impulse; the period of swarming; consequences of swarming; the spring harvest; queen-rearing; the summer harvest; improvement of bee-pasture; autumn, wintering. Every report has a colored harvest-picture of a number of stations where we find the daily and nightly changes of the scales recorded in a clear manner.

In Switzerland, as elsewhere, honey has often been adulterated, or inferior grades of foreign honey have been sold as the finest Swiss honey. Kramer obtained in the town of Zurich a place

BECHSEL AND PRESIDENT KRAMER LOOKING AT A FINE QUEEN.

for testing honey, in 1891. Here honey is examined chemically and by taste. For the latter, Kramer has hitherto been the expert He can decide, by taste only, if you give him Swiss honey, from which part of the country the honey came from, and from which flowers it was secured. It is astonishing to see how reliable his tongue is — a fact which I have often had occasion to prove.

In 1897 Kramer introduced a feature which has been a great benefit to our honey-producers, namely, the control of the honey of the S. B. K. A. Every affiliated association has from five to seven men, composing a jury. These are to judge the honey as to its purity, ripeness, and taste. A sample of any dubious honey has to be sent to the central jury, of which Kramer was chief till 1906; and only that honey which answers to all claims can obtain the marking, "Controlled by the Swiss Bee-keepers' Association." In consequence of this our honey has much improved in purity and ripeness, and its reputation has been greatly enhanced.

In 1897, 105 bee-keepers with 2843 hives obtained 11,900 kilograms of honey.

In 1898, 17 bee-keepers with 483 hives obtained 1565 kilograms.

In 1899, 431 bee-keepers with 13,408 hives obtained 143,849 kilograms.

In 1905, 1505 bee-keepers with 35,717 hives obtained 384,076 kilograms.

In 1889 was published the first edition of *Bienenvater*, by Kramer, Jeker, and Theiler—a book of which the chief part was written by Kramer. Since that time, six editions have been printed.

Kramer, having recognized the superiority of our native bees, in 1898 brought the aid of the S. B. K. A. to the breeding of the black race. He established mating-stations, remote places for the fertilization of queens with pure-bred drones. In the spring of 1899 he called together the "Rosenberg" in Zug, where we have our apicultural museum, a number of able queen-breeders for the first conference on "race breeding." He then chose a number of the finest colonies (there were but a few), and began the use of eggs from those colonies for the breeding of queens.

In 1898, three breeders sent 41 pieces of brood-comb; result, 106 fertile queens.

In 1899, three breeders sent 84 pieces of brood-comb; result, 1158 fertile queens.

In 1905, eleven breeders sent 149 pieces of brood-comb; result, unknown.

As chief of the race-breeding department, Kramer also watched over the sale of race queens.

In 1898, three breeders sold 55 fertile queens mated at five mating-stations.

In 1903, three breeders sold 104 fertile queens mated at eight mating-stations.

In 1904, twenty-three breeders sold 525 queens mated at eight mating-stations.

In 1905, nine breeders sold 457 fertile queens, mated at ten mating-stations.

A queen of a controlled race, mated at a mating-station, costs 8 francs, or about $1.50; mated in the bee-yard, 6 francs; a little piece of brood-comb costs 2 francs.

Since 1902 we have had an insurance of 5 cents per colony; and last year we instituted our foul-brood insurance—5 cts. per colony—which will, as we hope, remove that bee-pest from our land.

Since 1896 Kramer has been president and cashier of the Swiss Bee-keepers' Association. In 1906 he was obliged to unburden himself of some of his duties, his health beginning to fail from neurasthenia. He trusted to younger ones his duties as cashier, as chief inspector of honey, and of the management of apicultural stations; but he kept his office as president of the S. B. K. A and as chief of the race-breeding department—his favorite work.

Kramer has written, besides the *Bienenvater*, a great number of articles, especially in the *Schweizerische Bienenzeitung*, but also in German bee-papers. He is an unflagging investigator, and a very fine orator. As a president he excels, understanding exceedingly well how to reconcile opposite sides and confine discussions in the right line.

Ottenbach, Zurich, Switzerland.

## SUPERSEDING QUEENS.

### A Further Discussion on How Long a Queen May be Kept Profitably; Nature's Method of Superseding Produces Five-cent Queens.

BY J. E. HAND.

Notwithstanding the amount of space that has been devoted to the subject of requeening, there still seems to be a diversity of opinion upon the subject. It is safe to assume that no up-to-date bee-keeper would choose a played-out, run-down, and weakened queen from which to rear queens to stock his apiary, and yet that is just what is advocated by those who oppose the system of requeening. It is true that an all-wise Providence has planted deep down in the nature of the honey-bee the instinct to supersede a failing queen as a means of preventing the colony from becoming hopelessly queenless. In this as in all things else we recognize the wisdom of the Almighty; and yet is there any good reason why man should not step in and improve upon nature's methods of supersedure as well as upon a thousand other things that nature has given us? It is true that some colonies will supersede their queens, even before the apiarist can detect any failure of the queen. If all colonies were alike in this respect there would be less cause for man's interference; but, unfortunately, some colonies will make no attempt to supersede a worthless queen until the

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NOTED SWISS BEE-KEEPERS.

SWISS BEE-KEEPERS' CONFERENCE AT ZUG.

colony becomes too weak to amount to any thing in the way of storing honey.

The loss from this cause is far greater than is generally supposed. One whole column in a recent number of the *American Bee Journal* was devoted to quotations from eminent authors to prove that a queen lives from three to five years.

The writer of the article to which I allude seems to lose sight of the fact that the question is *not* how long does a queen *live?* but *how long is it profitable to keep a queen?* This whole subject is a matter of profit and loss in which dollars and cents are involved. A hen will live from ten to twelve years, and yet the profits from the first year's egg production have been found to be so much greater than any year after, that the up-to-date poultrymen are replacing their hens each year with pullets reared from their best laying strains. A Leghorn pullet, if properly developed and rightly handled, will lay almost constantly during the first year without becoming broody.

A queen is like a hen in that, after laying a certain number of eggs (the number varying with different queens), will become broody. In other words, she will begin to dwindle down in laying until her abdomen becomes quite slim. Right at this stage instinct asserts her power for the preservation of the colony, and queen-cells are built, with the result of either a swarm or a case of supersedure, according to the condition of the queen. If it so happens that her powers of egg production are not exhausted, another batch of eggs will quickly develop, and the colony thus thrown into an abnormal condition by having a vigorous queen and queen-cells at the same time will cast a swarm. On the other hand, if the queen still continues to dwindle, and is exhausted, supersedure is the result.

A queen seldom arrives at this condition during the first year of her reign, therefore a colony having a queen of the present season's rearing will seldom cast a swarm. If the above deductions are correct, the idea of requeening each year is not so preposterous as some would have us believe.

In summing up the advantages of requeening each year we find, first, an improvement in our bees as the result of stocking each colony with a young queen reared by scientific methods from our choicest breeder. Second, young and vigorous queens will keep up brood-rearing later in the fall, and begin earlier in the spring, which means a strong force of bees for winter and a strong colony of workers for the coming harvest. Third, the queens being bred from one mother will be uniform, and will be likely to give uniform results in honey production. Fourth, there will be no weak or queenless colonies, and every colony will be able to give a good account of itself. Fifth, there will be no swarming—at least, none to speak of. Sixth, those who advocate requeening the second or third year will have swarming and more weak colonies in the spring. There is a class of bee-keepers who recognize the importance of requeening, but don't like to do the work that is necessary in order to rear the choicest queens, preferring to rear five-cent queens by simply removing the old queen and trusting to luck for the rest, and are laboring under the de-

lusion that they are improving their stock. It does not require an expert to decide that such a method is open to serious objection.

My bee-keeping friend who may read these lines, it is for you to decide whether you will allow your apiary to deteriorate as a result of natural supersedure or whether you will keep your queens until they begin to fail, meanwhile overhauling every one of your colonies four or five times every season to see if the queens are beginning to fail, and finally have the most of them do their own requeening in spite of your misdirected efforts to help them, or whether you will make a sure thing of it once and for all by requeening your apiary each year at a trifling cost, and greatly increase your profits by bringing your entire apiary to a higher state of permanent productiveness. I say *trifling* cost, because with the right system and a very simple equipment any bee-keeper can rear his own queens and have them fertilized without having any nuclei; and no colony need be queenless for a single day except the ones that start the queen-cells, and these not over 48 hours. This simple method is fully explained in GLEANINGS, Dec. 15, page 1586.

THE QUEEN'S RELATION TO THE SWARM PROBLEM.

It should be understood that there are other forces that govern the real act of swarming, in a far greater degree than the mere presence of queen-cells; and unless these conditions are present there will be no swarming; and the queen, quickly passing the broody stage in which the mother instinct predominates, will quickly destroy every queen-cell that lies in her path, and she will find them all. I confess the above is not orthodox as compared with the text-books; however, I submit it as the most reasonable theory that has yet been advanced as to why queen-cells are constructed, and why a queen will allow queen-cells to remain in the hive at certain times and not at others.

In conclusion, Doolittle is certainly right when he says that natural supersedure is one of nature's plans. The question is, do we want nature's methods in their crude form, or do we want nature's plans modified and improved by man's reason and ingenuity until the objections are all eliminated like a rose without thorns?

Birmingham, Ohio.

## THE WHITNEY V. THE MILLER BEE-ESCAPE.

BY WM. M. WHITNEY.

I note what is said in Stray Straws, Jan. 15 and Feb. 1, about the Miller and Whitney bee-escapes for outside use, and would like to make an explanation of the working of the one bearing my name, illustrated on page 1150, 1907. The escape, of course, can be made to suit the needs of the apiarist. My business being comparatively small, and the matter an experiment, the escape-box was made of thin stuff large enough to cover six supers of sections resting on their sides crosswise on a table and about ¾ inch apart. The box, or cover, telescopes over the supers and rests on the table so that the line of escapes is at right angles to the line of supers—whether the supers should rest on the side or end depending, of

SWISS BEE-STATION AT SIGGENTHAL.

SWISS BEE-STATION AT ZELL.

course, upon the way sections are put in supers. The reason of this will be evident to all.

The escape-cones being in a row lengthwise through the center of the cover, and about ½ inch above the top of supers, afford the only light into the box, thus attracting bees to the exit. It is amusing to see the bees rushing out faster than is possible to count them. I tried the mosquito-netting with escape; also cloth, but there seemed so much light where not needed that it did not work well; but when the above method was tried, it worked like a charm. In mid-summer the bees are not disturbed in their exit by outside bees; but late in the season, when the honey-flow is slight, they are likely to be. To prevent this I constructed a hood, or cover of thin stuff with wire-screen top, long enough to cover all the cones, 4 inches high and 4 inches wide. It is very light, easily handled, and when put over the cones it will be filled with bees from the box below every 10 to 15 minutes. When it is lifted, and turned upside down, it is amusing to see the bees leave for home.

Now about your comments as to the loss of young bees. Did you ever notice nurse bees not old enough to mark their location occupying supers of sections? It is possible that a few might be found there; but I think it a rare case, as their work is among the larvæ in the brood-chamber. It was seldom that a dozen bees could be found after emptying half a dozen cases. In any event they should be shaken in front of any hive desired without fear of their being molested.

I think if Dr. Miller would try the above-described escape he would be pleased with it for outside work. It is not expensive. As he suggests, any bee-keeper can make it, or, possibly, find a box at some store, the right size; that is what mine was. The cone-escapes he can make himself at less than 10 cents a dozen, which can be tacked to the top of the box, or can be made in the form of a loose escape, as mine was, to slide into a space provided for it, in which case it could be removed when not needed to protect it from the weather, while the box could be left outside. I regard such an appliance as essential as the solar wax-extractor.

Evanston, Ill., Feb. 20.

SWISS BEE-STATION AT BERN.

## CURING ALFALFA UNDER HAY-CAPS.

[The article which follows is copied from *Hoard's Dairyman*, of Ft. Atkinson, Wis., one of the best agricultural papers of this country, and the standard authority on dairying. The editor has had much experience with alfalfa, and knows the value of hay-caps. With hay-caps it is unnecessary to cut the hay before it is ripe.—W. K. M.]

The first crop of alfalfa is very difficult to cure. The time of year when the first crop of hay is made is usually moist, and the hay is invariably sappy and heavy, all of which hinder the rapid and proper curing of the hay. By the use of the hay-cap, alfalfa can be cured better, even if the weather be dry; and if it rains considerably the crop can be saved, which is very apt to spoil unless protected by the hay-cap.

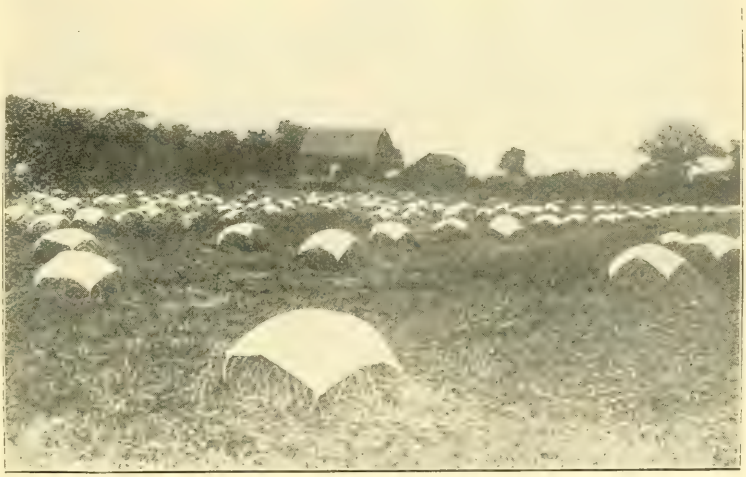
We cut our alfalfa in the afternoon, and it is cocked up the next day. The first night's dew does not hurt it, and we want the leaves to wilt before cocking. They should not be permitted to become dry, for if they do the hay cures much slower, for a large part of the moisture of the stems passes out through the leaves if not permitted to dry.

The cocks should contain from 75 to 100 lbs. of hay, and, on the average, it requires four days to cure it after it is put in the cock. When cocked the hay-cap is put on. Of course, much depends upon the weather conditions. The hay, while in the cock, should go through a sweat, which helps to cure it and prevents it from going through the sweat again in the mow. Just before the hay is to be put into the mow the cock should be spread out for a few hours to the sun and wind. It should not be left so long that the leaves will become dry and break off in handling. The cloth in the cap is made from A sheeting torn into pieces 40 inches square, and to each corner a large washer, weighing about half a pound, is tied. These washers may be obtained at any hardware store.

The weights that are attached to the corners of the cap tend to keep the cloth tight over the hay; for as the hay settles, the weights drop closer to the ground. To shed the water well the cloth must be kept smooth and free from wrinkles, and to accomplish this the weights, when the caps are put over the cocks, should be several inches from the ground. This method gives the weights an opportunity to pull down constantly on the four corners of the cap.

Some have recommended that pegs be attached to the corners of the cap, and hook them into the hay to hold the cap over the cock. This system would be all right if the cock of hay did not settle; but since the hay through settling would soon pull away from the cap, enough to loosen it materially and cause more or less pockets and folds in the covering, we do not recommend this method.

It might be added that the hay-cap serves equally well in the curing of clover hay. The advantage of the hay-cap is not only valuable in protecting the hay from rain but from the sun as well. The hay can be put up into cocks when it is green, and cured in the shade, which is better than drying it out in the sun. Hay cured this way is more palatable, and retains more of the leaves, because they do not become brittle and break off. The leaves of the hay are the most valuable part of it, and any system that tends to cure them properly, and prevent losing them in the field, is, in our estimation, worth practicing.



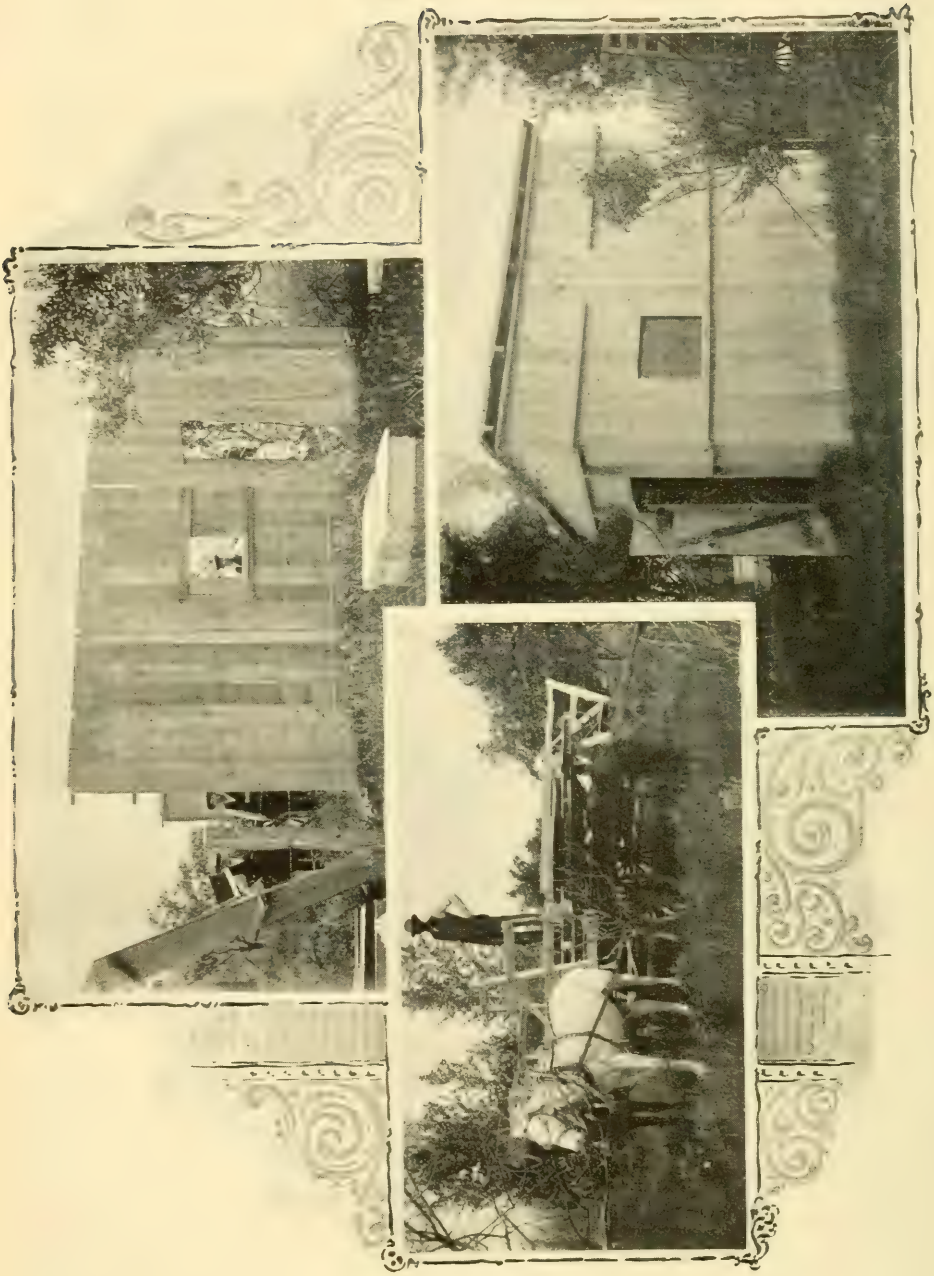
CLOVER IN COCKS AND COVERED WITH HAY-CAPS, ON THE FARM OF M. T. WRIGHT, WISCONSIN.

## A SIMPLE, PORTABLE TAKE-DOWN BEE-HOUSE OR SHOP.

BY E. F. ATWATER.

We have had too much experience with the system, if such it may be called, of hauling a tent and outfit to the out-apiaries. We have gradually abandoned that plan, as we are fully convinced that it is much more economical, and pleasant for all concerned, to have a building and the few necessary tools at each yard. When we began building shops for the out-yards we adopted the plan of the Townsend take-down houses, as described in GLEANINGS some time ago.

There are a few faults in the plan of the Townsend houses. First, they should be built higher, as more storage room for supers is cheaply added by making the building only two or three feet higher. The second fault is that the sills, etc., project *inward*, so as to interfere with piling supers closely against the wall. After building two Townsend shops we found that we needed



E. F. ATWATER'S TAKE-DOWN HOUSE AND SHOP FOR USE AT OUT-YARDS.

The illustration at the left shows the house in the flat, loaded on a hay-rack ready to be hauled to an out-yard. The view at the top shows a side and end panel set up. The bottom cut shows house when put together. Note that the sills, or 2 x 4's, are nailed on the *outside* to give clear piling room *inside*, and also more room. The panels are held in place by bolts passing through the intersecting ends of the 2 x 4's.

two or three more small buildings for storage at the out-yards; and as the yards at which they are to be used contain only about 100 colonies each, we decided on buildings only 10×12 feet, with the frame on the *outside*.

The cuts will make the construction clear. Each side and end is made in one piece with ship-lap running vertically. The roof is in two parts, and covered with rubberoid roofing. The door is 3×6½ feet, while the window is about two feet square. The cost, including a carpenter at $4.00 for one day, is about $30.00 each. Such a shop will hold six or seven hundred comb-honey supers, or half as many full-depth extracting-supers. One illustration shows the house in the flat on the hay-rack, just after arriving at the Linder yard. Another shows the house in the yard, about half set up. The third shows the house complete, with just a glimpse of the apiary at the right, and part of our hive and super-hauling rack at the left.

Meridian, Ida.

[This is one of the best-designed buildings that has been submitted to the bee-keeping public. The plan of putting the 2×4 braces on the outside, and bolting them together at the ends, is good—very good.—ED.]

## WAX-RENDERING.

### The Hatch-Gemmil Press versus the Hot-water System.

BY J. L. BYER.

During the past few years considerable has been written regarding wax-presses and the different methods of rendering wax; and it may be the opinion of some that these subjects are somewhat threadbare, and lacking of interest at the present time. However, it is a fact that, notwithstanding all that has been said and written, a large number of bee-keepers are still doing without a press, and annually *throwing away* lots of good wax which could, with a very little outlay, be saved; and the work of securing this larger amount of wax would not be nearly so great as is the case in securing a much less amount without a press.

In this connection, thanks of the bee-keepers are due such men as Hershiser, Gemmil, Hatch, and others for calling our attention to the frightful waste of beeswax, unavoidable with the processes of wax-rendering as practiced in past years.

My first experience in trying to get wax from old combs has, no doubt, been duplicated by nearly all bee-keepers, and the results were of such a nature that it is not to be wondered at that we rather dreaded the job and often allowed such combs to be destroyed by the moths, consoling ourselves with the thought that "there was not much loss anyway."

The first press that it was the writer's privilege to use was one built like the Root-German steam press, only considerably smaller. When this press arrived we thought the problem of rendering the old combs was solved; but after a couple of days' trial our enthusiasm waned quite rapidly, as it was found that, for any large quantity of material to be handled, it would take weeks of work to finish the job; and as we came to the conclusion that our patience (to say nothing of our time) was not equal to the occasion, the machine was voted a failure.

We next purchased a press of the Hatch-Gemmil type, and have ever since used the same with pleasure and profit; but before giving any more particulars about this style of press I will give my experience with the Root-German steam press.

It will be remembered that Mr. F. Greiner, some time ago, wrote up his experience with this press in the columns of GLEANINGS, stating that he was almost tempted to give up trying to get the wax out of old combs, as the most wax he could get in a day with the steam press was about 15 pounds. Seeing this, Mr. J. F. Davison, of Unionville, Ont., asked me to try his Root-German press and see how much wax I could get in a day from old combs. In his opinion Mr. Greiner's estimate was about right.

To make a long story short, in the short time we used the press, results were much in accord with Mr. Greiner's experience; *but* before the *day* was up we had caved in the bottom grates of the machine. Quite a few have had this same experience; and, if I remember correctly, the senior editor of GLEANINGS reported something of the same nature. Used as it is supposed to be handled, for any great amount of combs, this machine is not to be recommended as it is too *slow*; but it will get the wax all right if one is not particular as to time. A number having these presses first melt up the combs in a wash-boiler or kettle, and then put the mass through the press; and, while this works fairly satisfactorily, yet there is a likelihood of putting in too much at one pressing for good results, and, as previously pointed out, there is the danger of putting on too much pressure and bursting the machine.

After using the Hatch-Gemmil press for some time, the claims of the Hershiser and other hot-water presses coming into prominence we started to save the slumgum from our press; and during the past four years we have accumulated quite a pile of this article. The treatment of some of this slumgum with one of these hot-water presses has, in connection with the requests of some bee-keepers, led to the writing of this article.

The press I have been using during the last week is constructed on the principle of the one described by Mr. Holtermann in GLEANINGS a short time ago, only the one I have is much stronger than the machine referred to. It is practically the same system that is used by Mr. Hershiser, only Mr. H.'s machine stands right on the stove or furnace, while the one I used has the mass of stuff to be pressed first heated in another vessel, then transferred to the press, all then being surrounded and covered with boiling water. An enormous pressure is applied by the two-inch screw with a four-foot crowbar as a lever; and just here I wish to remark that the screw as ordinarily used in the Hatch-Gemmil press is not, in my opinion, strong enough to do good work in pressing three or four cheeses as it is called to do if said press is worked over into a hot water machine, as is recommended by some. Three hundred and eighty pounds of slumgum was treated; and, by the way, that amount of material, thoroughly dry, makes quite a bulky pile of stuff to

handle. From this amount of slumgum we got 54 pounds of wax, or about 14 per cent.

This seems quite a large percentage, and I admit that I was surprised at the amount of wax obtained. However, those figures do not indicate that 14 per cent of the wax was left, as the 380 pounds of slumgum was the residue of 520 pounds of wax previously extracted. In other words, out of 574 pounds of available wax, 54 pounds, or about 9½ per cent, was left in the mass.

Then, again, some of this slumgum was saved at a time when I was not using the press in a proper manner; and it was noticeable that the slumgum of this winter's saving did not yield as much wax as did that of four years ago.

As nearly as I can figure, the way I use the Hatch-Gemmil press at present I have about 8 per cent of the available wax in the slumgum. I say "available," because I find that, with any process, some wax will be left; and, after repeated pressing for two hours under hot water, minute wax globules would continue to rise to the surface while using the hot-water machine.

In using this type a large amount of reserve hot water is absolutely necessary. We used a large agricultural furnace for heating and dissolving the slumgum, and an oil-stove kept a large boiler of water hot; yet our hot-water supply was not nearly plentiful enough. Four days' time was occupied in getting that 54 pounds of wax; so when fuel for the stoves is counted there is no great margin for handling the stuff. No doubt those who make a specialty of handling large quantities of slumgum have better facilities than we; but 100 pounds, or thereabout, is as much as we could handle in a day. The four days mentioned included the remelting of the wax.

Mention has been made of not using the press properly, and I wish to say that such is quite possible with the hot-water machine too. Before being shipped to me a friend had used this press in rendering quite a quantity of combs into wax. He obtained only a little over one pound of wax to every five Langstroth combs; and I am convinced that he made the cheese too thick, as on an average three Langstroth combs should yield about one pound of wax. Formerly I filled the form *too* full when using the Hatch-Gemmil press, and I now see the mistake of that course. As I use the press now, care is taken that the pressed cheese be not over ¾ in. thick. When pressed it should be quite dry; if over ¾ inch thick, and mushy, you are leaving a lot of wax. You will leave enough anyway.

It is advisable to have leather straps on top of the follower; and, after pressure is all on, reverse the screw, lift out the follower, and saturate the mass with a couple of dipperfuls of water. Replace the follower and press again, and with ordinary care a good job is assured.

A number have asked me what press I would get if buying now; and in answer I can only say that each will have to use his own judgment. Certainly for the bee-keeper with a few colonies I would recommend a press of the Hatch-Gemmil style. With the extensive bee-keeper it may be a different matter; but personally, even if I keep the hot-water machine, I shall certainly not discard my old standby, the Hatch-Gemmil—at least not until I see things differently than I do now.

Just a word as to the quality of the wax obtained from this slumgum. When we consider the nature of the stuff handled—moldy, mussy, and some of it as black as lampblack, believe it is casting no reflection on the hot-water system when we admit that the wax obtained is of very poor quality. Of the 54 pounds, 25 pounds has been melted twice, the rest once since taken from the press. Even the 25 pounds is very dark, and the smell of it is strong, not at all like the aroma of ordinary wax. While I expect to be able to sell it, yet I would not think of sending it to the manufacturers who get my wax at other times. If absolutely necessary I can use sulphuric acid, but I will not do so unless I have no alternative. Be it understood I do not blame the machine for the poor quality of the wax, as I am certain that wax from the same source, no matter how obtained, will necessarily be of inferior quality. As yet I have not tried this hot-water press with combs, so I can give no data along that line; but my experience so far convinces me that not nearly as rapid work can be done as with the unheated press. With any considerable quantity of old combs to melt I first run through the old press, and afterward, if necessary, reheat and put the residue through the heated press—i. e., after quite a quantity of the slumgum has been accumulated.

In conclusion let me urge every bee-keeper, even if he keep only a dozen or more colonies, to get some kind of press. He certainly will have it proved to him, after having used it, that it was a paying investment. If he is one of those who get "all the wax" without a press, of course he doesn't need to pay any attention to the advice given. But candidly I don't believe any such bee-keepers live in America.

Mount Joy, Ont.

[Our experience in using the Hatch-Gemmil press has shown us quite conclusively that the plan of pouring hot water over the cheese, and pressing again, though taking less time, does not give nearly as good results as the plan of throwing out the cheese after all the wax possible is obtained by the first pressing, and melting it up again afterward. The trouble with the first plan is that the cheese remains in the same position relatively, and the wax does not have so good a chance to escape as it would if the particles of the mass were entirely rearranged, so to speak. If the slumgum were gone over the second time in the Hatch-Gemmil machine it would take only a little over half as long as the first treatment, and we feel sure that the final loss could be reduced to 3 per cent.—Ed.]

## BREEDING DOMESTIC ANIMALS FOR BUSINESS.

### Crossing Wild and Tame Species to Strengthen the Stock.

BY W. K. MORRISON.

Some fun has been poked at the Texan bee-keepers on account of their method of producing a new breed of bees. In justice it ought to be pointed out that Luther Burbank works on the same lines in producing new varieties of fruits, namely, by hybridizing distinct species of plants, and also by crossing distinct varieties with quite

different characteristics. Dr. Munson, whose work is equal to Burbank's, and perhaps more important, also works on the same lines, having originated a number of splendid varieties of grapes by crossing distinct *species* of wild and tame grapes. Working along such lines they have effected improvements at one jump which would have taken several generations to effect if done by the ordinary way of seed selection. Such varieties are probably much more permanent than those produced by selection.

It is practically the same in regard to animals. Prof. Cossar Ewart has succeeded at one bound in creating a new breed of horses by crossing the horse and zebra. Such an animal possesses great stamina and courage. It can probably live in Africa, where no horse can live on account of the tetse fly.

In this country a cross between the buffalo and the cow produces a remarkably healthy and hardy animal able to resist blizzards, and beefy enough to compare with a Hereford graded steer.

Our most highly domesticated animals are the weakest, and most subject to disease. This is more particularly true of the race horse, which suffers greatly from diseases of the bone. Our thoroughbred cattle such as Holsteins, Jerseys, and Guernseys are subject to tuberculosis in a remarkable degree. Probably the healthiest horses in all America are the two wild ones belonging to the Zoological Garden, of New York. In size and appearance they resemble Arabian or Morgan horses. This shows that, the further we get from the true type, the greater is the risk of weakness. The high-bred English horses were no match for the half-wild ponies of the Boers. They could not stand the "grief" and hardship of a severe campaign. Texan ponies did far better, and there isn't a deal of difference between the so-called wild horses of Nevada and Oregon and the genuine wild horses of Asia.

Our efforts at improvement by selection are not always satisfactory in an esthetic sense. Our asses are very homely, whereas the wild asses are really beautiful, having short ears and elegant forms; our mules are homely; but a natural mule between the ass and the horse, or between the zebra and the horse, or between the zebra and the ass, are really beautiful animals; moreover, they are wonderfully healthy and hardy.

The cattelo is more noble-looking than the bull, and more robust than the buffalo—superior to either for several purposes. It is nearly the same in regard to domestic fowls. The best turkey is the wild turkey or its crosses, either to look at or to eat. The best goose for table purposes is a direct cross of the wild Canadian goose and the common domestic kind.

Our best table fowls are the game which very much resembles the wild chickens of India. The Dorking fowl closely resembles one of the wild species of chickens, and that, too, is a great table bird. Cross these two breeds and we get the best table fowl of all. In other words, our highly domesticated breeds lack stamina and fine health.

Another point is this: By crossing or hybridizing we secure "sports." In fact, every seed produces a new variety. When Burbank hybridizes two species of walnut, such as the Persian and American, every nut he plants produces a sport, or new variety. In fact, he has had ten thousand new varieties of walnuts by this plan.

The so-called "Darwin" tulips are a case in point. These were produced by hybridizing. There is nothing in nature like them. Burbank produced a new species of flower by crossing nicotiana and petunia, and so on.

It is evident that the Texans are only following the lead of the ablest scientific breeders of our age when they cross the Italian, Cyprian, and Palestine bees. It is the quickest way to secure results.

[The crossing of these three varieties was tried in the early '80's; and while the resultant product showed up well in the supers it was very cross—so much so that many apiarists have been trying to breed it out ever since. There was another bad trait in the cross — namely, that it ran too much to breeding out of season. But this very quality that would not be desirable in the North might be valuable in Texas and other warm States where there are long seasons. Moreover, that very crossness also would be less pronounced, probably, than in the North. The principles that Mr. Morrison has enunciated are correct; but the bee-keeper of the North can not afford to get into his strain of bees some of the undesirable traits of the Cyprian and Holy Land bees. In crossing with other strains we should aim, of course, to weed out the bad and keep the good traits. To do this may require the skill of a Burbank. He who succeeds will have a strong demand for his stock at good prices.—ED.]

## THE TROUBLES OF AN AMATEUR BEE-KEEPER.

### Spring and Summer Surprises.

BY F. DUNDASS TODD.

In April I became suspicious that my venture with duplicate queens was a complete failure, as I noticed the bees seemed to run from one entrance to another as they desired. It was my intention to leave the hives under their winter cover until well on in May, but it so happened the only possible croquet ground was in front of the hives, and occasionally a ball would run right up to the entrances. The children had played daily all the previous summer without a sting, but I felt the risk was too great to run for another year. If a change of location was necessary it ought to be done before the bees became very strong. So about the middle of April I removed the winter covering, which was as dry as tinder, the top of the box having been covered with tar paper. On opening the hives I found that all the introduced queens were missing, and that the bees were carrying the stores to the other side of the hive. Of course, I removed the division-boards. The hives were changed to the new location; and as they would be exposed to all northerly winds they were wrapped up in tar paper. The usual plan of obstructing the free flight of the bees, by boards in front of the entrance, was adopted, and there were really few bees lost by returns to the old stands.

The spring of 1907 was cold and wet, so that building up was very slow. I expected great

things from No. 1, as it had gone into winter quarters in splendid condition with plenty of bees and "millions of honey in the house." No. 2 had done only moderately, but had laid in lots of stores. No. 3 had plenty of bees—far more than No. 2—but had stored very little sugar.

To my surprise, No. 2, the weakest last summer, began to build up first. The best hive of last year followed slowly behind, while No. 3 seemed to stand absolutely still. On account of the weather I hesitated to examine; but in the middle of May I overhauled and found No. 1 almost solid with stores; No. 2 in fair condition, provided clover bloomed by June 1st as usual, while No. 3 had nothing over a day or two's food on hand. To avoid killing the grass on my lawn I had made stands of inch dowel rods passed through scantling set on edge—good stands by the way and inexpensive, but not suited for the Alexander feeders I had on hand. But something had to be done quickly, so I tilted up the front of the hive until it was about two inches higher than the rear, and shoved in a wedge between the bottom and the stand. Then from an old can I improvised a runway for the feed to start it through the entrance. Each night I poured about a pint of warm feed, consisting of equal parts of sugar and water, on to the bottom of the hive, and in the morning it was all gone.

White clover bloomed June 17, being about three weeks late; but the bees paid but little heed to it. But dandelions had bloomed as never before; and while my neighbors were lamenting and wrestling with the pest on their lawns I was content, for my No. 2 hive was fast gaining ground. The bees were hanging out at night, so I added a second body, put three full frames above, replacing below with empty ones.

July 4 my best hive got busy all of a sudden—there was something doing. No. 1 was gaining strength, and even No. 3 was making headway. I put supers on the first and third, though I expected nothing from the latter; but as I was to move at the end of the month I wanted to see what I could do. I was still running in competition with my friend, and desired to be on top.

Then the swarming fever developed; in fact, in that locality swarming seemed to be a mania. I was busy winding up my business affairs and packing furniture preparatory to a long western journey, and every minute was precious. Two more of my friends had followed my example into the bee-world; and since they were at business all day their wives were naturally upset when a swarm set off for the top of the nearest high tree. I got so I hated to hear the ring of the telephone-bell between the hours of ten and six. My own queen-cells were kept cut out, and my queens' wings were all clipped; but my neighbors were less careful. I have already said I never wanted to see a swarm of bees; but the honor has been thrust upon me. My son enjoyed the first one or two he went after, just for the fun of it; but it soon grew monotonous. Sometimes he would be on one side of the village, sweating over one swarm, and before he got back I would be, perhaps, thirty feet above ground, hanging on the stem of a slim tree that I suspected was never meant to sustain the weight of a man six feet in height. However, I always responded when a woman's nervous voice came over the phone, "O Mr. Todd! our bees are swarming, and are settling right at the top of the tree at the back of the yard, just south of the chicken-house. What shall I do about it?" But there was no joy in the task. I always felt like the man who complained of being bothered with cold feet in bed, but the feet were not his.

Even my best hive cut loose one day. Somewhere I had read, or thought I had read, that queen-cells are always on the edge of the combs, and that it is not necessary to dig out all the frames in order to get at queen-cells with the Danzenbaker and similar hives. So once I just tilted back the hives and cut out the cells in sight; but on this occasion two had been started on the face of a comb, and of course I had missed them. My neighbors' bee troubles got too many for me. However, when the shout went up that my bees were swarming I did not hurry any, but proceeded to the hive, cut out the queen-cells, and waited for the return of the fugitives. Next day hive No. 1 played the same trick and got the same treatment.

What did I do with the queens? Nothing, for the very good reason that I never saw them. Theoretically they ought to have been hopping about on the grass in front of the hive; but, although I searched long and carefully, I never found them. They must have got back all right, because these same hives swarmed later in great shape. July 17 I sold out, and agreed to deliver to my successor, who lived eleven miles away. I was to get all sealed honey above the lower brood-chamber. I took from hive No. 2 45 lbs. of chunk honey; from No. 1, 11 finished sections; from No. 3, only one section.

Medford, Oregon.

## AGE OF LARVÆ USED BY BEES IN STARTING QUEEN-CELLS.

### Do the Bees Ever Use Larvæ that are Too Old when Younger Larvæ May be Had?

BY DR. C. C. MILLER.

When a colony is made queenless, either by accident or design, the bees proceed to rear a queen, more likely several queens, from material already at hand. If a larva more than three days old is chosen, an inferior queen will be the result. Some have held that the bees, in their eagerness to supply the place of the missing queen, will select larvæ more than three days old.

Dr. E. F. Phillips made measurement of larvæ selected by queenless bees for queen-rearing, and by his courtesy I am permitted to give the results herewith:

SIZE OF LARVÆ CHOSEN FOR QUEEN-REARING.

A colony of Caucasian bees was made queenless at 11 A.M. On the second day at 2 P.M there were eight queen-cells started. Their contents were as follows:

| | |
|---|---|
| Empty | 2 |
| Larva one-half size of worker-cell (2 days ) | 4 |
| Larva one-third size of worker-cell (2 days) | 1 |
| Larva filled worker-cell (4 days – ) | 1 |

All these queen-cells were destroyed, and the colony examined again the following day at 2 P.M.

| | |
|---|---|
| Empty | 3 |
| Larva one-third width of worker-cell (2 days) | 2 |
| Larva nearly filled worker-cell (4 days) | 2 |
| Larva somewhat extended in cell (5 days) | 1 |

All these cells were destroyed, and, two days later, at 2 P.M., the colony was again examined, with the following results:

| | |
|---|---|
| Larva nearly filled worker-cell (4 days) | 4 |
| Larva becoming extended in cell | 1 |
| Sealed cell with larva straightened out | 3 |

The ages of larvæ are merely approximate, and are based on the sizes of worker larvæ. Since queen larvæ probably grow more rapidly on account of extra feeding, it is probable that all these approximate dates are too high.

All larvæ were removed from queen-cells, and fitted into worker-cells to determine the size.

As befitting his position, Dr. Phillips has refrained from drawing conclusions, as if to say: "There's what the bees did; make the best (or the worst) of it." Although it is not the easiest thing to draw conclusions that are positive and exact, it will do no harm to analyze some of the particulars, and at least make some deductions.

Looking at the lot of eight cells mentioned at first trial, I fancy I hear some beginner say, "There's at least one case in which the bees made a bad choice, for the age of the larva is given at four days, plus, which no doubt means something more than 4 days old. If three days is the oldest that will do for a good queen, then certainly the larva in question must have been too old by more than a day." Not so fast, my good friend; don't you see that this larva was not necessarily four days old at the time it was selected by the bees? It was four days old when the examination was made, and that was two days and three hours after the bees were made queenless.

To come to any definite conclusion in this case we need to know just how long after removal of the queen the bees discover their queenlessness and get busy at starting queen-cells. Without looking the matter up, I think my memory is not at fault in saying that not long ago there was some discussion of the matter, both the editor and C. P. Dadant agreeing that it was within a few hours—one of them, if I mistake not, saying it was within the hour, or almost immediately. Let us figure at what time, after unqueening, this larva must have been selected to make it too old. Right here we run against a snag in that "four days, plus." Plus how much? For the sake of some basis to work on, let us assume it means four days plus six hours. Then if it was started when just three days old, it must have been selected one day and six hours previous to the examination. That would be twenty-one hours after the removal of the queen.

But it must not be forgotten that that "plus" might be more than six hours. Suppose we call it 18 hours. Then, if selected at three days old, the selection must have been made nine hours after unqueening.

I am free to confess prejudice in favor of the good judgment of the bees; and, rather than admit any lack in this regard, I would plead the possibilities in the case. It is possible that the bees started the cell within an hour after the removal of the queen, and it is possible that the "plus" may be not more than three hours. That would make the age of the larva at time of selection not more than two days and one hour old.

The majority of the larvæ (four) were less than three days old at the time of examination; so of course they were less than three days old when selected, and may have been less than one day old. The remaining larva was still younger. Of the six larvæ started, then, five were most positively started when less than three days old, and it can not be proven that the sixth was too old, the strong probability being that it was the first one selected, as it was the oldest of the lot. It is very clear that those who say the bees are so lacking in judgment as to select larvæ that are too old do not find the proof of it in this part of the experiment.

The other two experiments are of no practical interest to the man who rears queens only from the first batch started. They are of interest, however, from another point of view, for those who say that the haste of the bees to rear a queen makes them select larvæ too old say also that, if the first lot be destroyed, the bees will have gotten over their haste and will then select younger larvæ. Does comparison of the different parts of the experiment prove this?

The average age of larvæ found at first examination was 2.33 days; at the second, 3.4; at the third, 4.5. Suppose it took the bees twelve hours in each case to discover the need of starting cells; then the average age of larvæ at the time of first selection was 1.83; second, 2.9; third, 4 days. It may be said that, in the first case, the bees would be longer in discovering their need of starting cells than in the other cases. But that can not possibly account for a difference of 2.17 days between the first and the last case. It may also be noted that, while it can not be proven that any larva in the first case was chosen when too old, there is clear proof that in the other two cases larvæ were chosen that, if not too old, were at least older than any in the first lot.

It may be urged that larvæ were older in the second and third cases than in the first. Yet at the beginning of the third period the queen had been removed just three days and three hours, and so abundance of young larvæ must have been present, the youngest being only three hours out of the shell.

I submit that the experiment does not prove that bees when made queenless select larvæ too old; nor that there is any gain by destroying the first lot of cells started and giving the bees a second chance.

Some one may say, "Well, suppose some one does hold mistaken views on the subject, what matter?" It matters for two reasons. One is that I believe it a libel on the intelligence of the bee to accuse it of doing so unwise a thing as to select poor larvæ when better can be had. That is a sentimental reason; the other is practical. It is that erroneous teaching in this regard is likely to frighten the every-day producer of honey away from what is for him the easiest and best way of rearing queens; and that is not only a practical but a very important thing.

I doubt if there's any ground for the error except prejudice. Prejudice, however, takes a powerful grip on one. There's Editor Hutchinson, a man who has sometimes shown himself the personification of unprejudiced fairness, who holds tenaciously to this error, with no inclination to set himself right, and to do justice to the bees. I have coaxed him, I have defied him, to make a very simple experiment that I think would convince him—simply to unqueen a colony, and then look 24 hours later and say how old were the larvæ he found in queen-cells. Then he

could return the queen. The experiment would cost him little; but, no! he falls back upon his old experience, real or supposed, and says he has tried it; and he reared poor queens. Well, I've tried it, and I've reared good queens. But neither of those two things is exactly to the point. Let Mr. Hutchinson give us something in the way of clear proof that bees made queenless are in such haste to rear a successor that they use bad judgment in their selection, or else stop maligning the bees.

Marengo, Ill.

## EXTRACTING-TOOLS.

### How to Prevent Robbing when the Extracting is Done During a Honey-dearth.

BY E. D. TOWNSEND.

The tools for the yard work in harvesting a crop of extracted honey consist of a Daisy wheelbarrow, two empty hive-bodies, two Coggshall bee-brushes, one of the latest four-inch smokers, and three robber-cloths. The last named are nothing more nor less than cloths two or three inches larger than the top of a hive with sticks, nailed on each long side. One of these cloths is laid over the hive after the cover is removed, to keep out the robbers; and as it is quickly rolled up far enough to take out a frame, and then rolled back, the whole top of the hive is never exposed at one time. The cleats for the two long sides of the cloths are made of pieces of lath 20 inches long. One edge of the cloth is wrapped entirely around one of the pieces, when a second one is laid on top of the wrapped lath, and nailed. The cloth now comes out between the two pieces of lath, and is thus firmly secured. Two more pieces are nailed on the other side of the cloth, which makes it complete. The sticks must, of course, be on the long side of the cloth rather than on the ends, so that they will be parallel with the top-bars. In this way it is very easy to roll the cloth back just far enough to lift out a frame.

In removing the honey from the hives the row furthest from the extracting-house should be begun on first, so that it will not be necessary to work at any time in front of the disturbed colonies; for if the work is done when there is no honey coming in from the field, robbers are always troublesome. Place the wheelbarrow back of the hive and put one of the empty hive-bodies on it lengthwise so the frames may hang parallel with the barrow to prevent unnecessary swinging and shaking. The other hive-body should be placed at one side of the colony, leaving a space between for the operator. When the hive is to be opened, the smoker should be working well; and as soon as the cover is removed the bees should be given a gentle puff of smoke. If too much smoke is given, bees become demoralized, some flying out and others running across the combs, so that the results are not at all satisfactory. There should be no smoke blown down between the combs, therefore, until most of the bees have run off the top-bars of the frames, and started down toward the lower part. When bees are once started properly, there is no trouble in keeping them going, especially if the honey is all capped (as it should be), for the idea is to keep the bees ahead of the smoke as much as possible. When about three-fourths or more of the bees are smoked out of the upper story this should be quickly lifted off and set on the empty body that has been placed near by for the purpose. It is important to be quick about this, so that none of the bees may have time to run back. If there are more stories to be taken off, repeat the whole operation, setting additional stories on top of the one first removed. When the first story is taken off, quickly cover one of the hives with one of the robber-cloths, as the bees will soon "boil over," when there will be trouble in putting on the cover without killing the bees. Having the bees nearly all smoked out, a comb should be lifted with both hands and then held over the entrance of the hive. In that position it may be held with the left hand in the original position while the right hand holds the brush. A slight turn of the wrist exposes either one side of the comb or the other to the brush. This part is clearly illustrated by the engravings, pages 1244, 1245, Oct. 1, 1906. Two sweeps of the brush on either side of the comb are usually sufficient to remove the bees with the exception of a few stragglers next to the bottom-bar, which are allowed to pass out through the bee-escape on the honey-house windows later. As fast as the combs are brushed they are put into the hive-body on a wheelbarrow. If the first three combs are placed at the furthest side of the bodies, the further edge of the robber-cloth can be lifted up to get them in; but it is best to put the five other combs in from the front by lifting the front edge of the cloth. As a full upper story will yield about 50 lbs. of extracted honey, we wheel in only two at a load.

One great secret of success in extracting when there is no honey coming in from the field is to keep *all* honey away from the bees while it is being handled in the yard. Another secret is to avoid giving combs wet with honey back to the bees while the extracting is going on.

If it is desirable to return these combs to the bees for any purpose, they should be given just at night, when they will all be cleaned up by morning so that there will be no commotion.

The honey should be extracted almost immediately, so that it will not have time to get cold. In order to work to the best advantage there should be two operators in the extracting-house, and one to take off the honey and wheel it in. All honey to be extracted should be piled up near the uncapping-tank. While one person does the uncapping, the other turns the extractor and handles the honey, although sometimes the uncapper has time to help a little in some other work.

When uncapping, the end-bar of the comb should be rested on the pivot or point in the cross-piece of the uncapping-tank. It is best to use a long uncapping-knife, commencing at the lower end of the comb, and cutting deep—down even with the wood—with a drawing motion. As the knife reaches the middle of the frame it will be necessary to hold the comb nearly vertical to prevent the cappings from falling back on the comb instead of directly into the capping-

box below from the outer edge of the knife. If the work is done well, the cappings, many times, fall down in one whole sheet.

While it does not take any great skill to operate the extractor, one should be careful, especially when the combs vary greatly in weight, to put them into the baskets in such a way that the reel will be as nearly balanced as possible. Where there are several combs to select from, one can usually pick out the ones that will balance the best, and, after the first two or three turns, the weight will be so equalized that the reel will run almost as evenly as if the combs were of the same weight in the first place.

Remus, Mich.

## NATIONAL CONVENTION NOTES.

### Diseases of Bees to be Discussed.

One of the most serious disasters thet can visit an apiary is that of foul brood, either American or European. All should be constantly on the watch for it. Every bee-keeper ought to be able to recognize it instantly, and know exactly what course to take when it is found. Not only is foul brood a great misfortune to the owner of the diseased colonies, but it is a serious menace to surrounding apiaries.

For these reasons, one whole session of the National convention is to be devoted to the discussion of diseases of bees. Dr. White, of the Apiarian Department at Washington, has consented to take up the bacteriological feature; show us how cultures are made and the diseases propagated, etc. Some one of the inspectors will tell us how to detect the diseases, another how to treat them, etc.

BEE-KEEPING IN HAWAII.

We bee-keepers of the United States might be surprised if we knew all about the keeping of bees in Hawaii. It seems that Uncle Sam thought it of sufficient importance to send a special agent, our friend Phillips, of the Apiarian Department at Washington, out to these islands to investigate this industry. He spent several months studying the industry, and we have been fortunate enough to secure his promise to tell us, at the coming National convention, all about the bee-keeping of Hawaii, illustrating his talk with stereopticon views taken while at the islands. Those who are fortunate enough to be present may expect a treat.

LIVE-BEE DEMONSTRATIONS.

Few things will attract and hold a crowd better than the handling of bees in a wire-cloth cage. A good demonstrator can do very effective missionary work at such times, or, if at a fair, large quantities of honey may be sold at such demonstrations. Of course, to a bee-keeper, the handling of bees is no novelty, but not every one of us knows how to handle bees in a cage in the most successful and agreeable yet novel manner, hence it will be interesting to know that E. R. Root has consented to bring a cage to the National convention, and give an actual demonstration of how he makes this exhibition.

W. Z. HUTCHINSON, Sec.

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

SWEET AND ALFALFA CLOVER IN ALABAMA.

When I first came south I thought that sweet clover would grow anywhere—that all I had to do was to scatter some seed and the work would be accomplished. Accordingly, I got a bushel of seed and scattered it freely in the woods and out of the woods. I cleared a small patch of level land and put it in, feeling confident I should soon have honey from it; but to my great disappointment I got nothing. In a few places it germinated, but soon dwindled and died. Early in the following spring I prepared a small piece of ground near the house, where it was very strong, and it came up nicely, grew most luxuriantly, and I felt sure I had gained my point, thinking what was needed was good rich soil to start in. When it was in full bloom, before it made seed I cut it, thinking the second crop would make the seed. I had seen it cut at all times in Illinois, and it always started again. In fact, no one thought of killing it by mowing; but to my sorrow my crop died just like oats or wheat. I was annoyed and perplexed, and I never tried it again. I have concluded that I should have mowed it above the first branch, or else allowed it to mature its seed.

I also tried alfalfa, but it died out. However, it was sown on very poor soil. Our subsoil is very dense, and I think the tap root of both these clovers finds that too hard to penetrate. Cow peas do remarkably well in this soil. Would the roots of the pea inoculate the soil for the clovers? If any one has succeeded I should be pleased to hear from him. E. B. ELLIS.

Hanceville, Ala.

A SAFE PLAN FOR INTRODUCING A VALUABLE QUEEN.

Having made several failures, and losing many valuable queens when following the regular plan sent with cages, I at last stumbled upon a plan like the others, yet enough different to make it worth telling. The plan is as follows:

After preparing and getting the colony in condition for the valuable queen I first put a queen-guard or trap in front of the entrance to make sure no flying virgin can get in. I then catch the queen from this colony, close the hive, and set it on a new location which can be near by for convenience. I set another hive-body, of similar appearance, on the old stand, and put some of the brood (two or three frames if plenty of brood exists) in the hive on this original stand. Quite a lot of bees will return to the old stand. Of course, I do this when robbing will not be bad, and I put weeds, grass, or leaves about the entrance to keep robbing down. One full comb of bees from the first hive after the queen has been caught will keep down the robbing unless it is during a honey-dearth, when it would be hard to prevent it. Two or three days after this is the best time I find to introduce the queen to the original colony moved to the new location. The zinc is very important, as a virgin queen might otherwise take possession of the hive, and the queen would never get out of the cage.

This is a modification of several plans, and only a slight modification of Dr. E. Gallup's plan given in GLEANINGS in 1881.

I came across this a few days ago when hunting something on safe introduction of a valuable queen.

This plan is intended merely for breeders of very valuable queens that one wishes to introduce without fail. It is too much work, as a general thing; but one can afford to take extra precaution with a very fine queen.

Lewisburg, Miss. W. T. LEWIS.

HERMAPHRODITE BEES; THE PUPA OF A DRONE THE WRONG END TO IN THE CELL.

Yesterday evening I opened a hive to see the progeny of a queen recently purchased. The young bees have been maturing for fully a week now, and I saw something which rather knocks me out. It was a bee with a worker head and body, and the back part drone. On further examination I found another with the back part seemingly half drone and half worker; then further on I found another the same as the first, with worker head and body and the back part drone. In those cases where the two were alike, the back or drone part is all yellow; whereas the one half-and-half was yellow down the one side, and marked like an Italian worker on the other. The worker progeny are all nicely marked, three-banded, and light.

Another strange thing I saw this spring (but it was only a freak) was a drone which, when turning endwise when in a larval state, had turned his head toward the center of the comb. It was in worker comb, and, after maturing he died. I happened to notice that the workers had the mouth of the cell open and eaten away for some distance down the side of the drone. I took him by the wings and pulled him out, but it took quite a tug. You will understand that his shoulders, being too large for a worker-cell, caused this. D. CHALMERS.

Poole, Ont., June 23.

[Once in a great while there will be a queen that will produce hermaphrodite bees or drones. Almost any queen-breeder, if he does any business in queen-rearing, will see cases of this kind two or three times in a season; but it is very seldom that a honey-producer runs across it, and hence it is nothing strange that you should not have seen it before. It is very rarely that one finds a worker or drone with its head wrong end to in the cell. You will probably never see the like of it again.—ED.]

SHADE FOR BEES; COLONIES DO BEST IN UNPAINTED HIVES THAT STAND IN THE SUN.

My bee-yard 33 years ago was in a young apple-orchard, and about half my bees were placed in the shade, or partial shade of the trees, and the rest in the open. As the years passed on, and the colonies that stood in the shade died, others were transferred to their places, and so it went on for about ten years when I stopped replacing the dead colonies that stood in the shade, and from that day to this all of my bees have stood in the open sunshine; for, looking backward, how sorry I feel for those bees in the shade! They were doomed—they had no chance. Those bees in the shade made but a small surplus, and at best were short-lived in comparison with those in the open. Since then I have taken note of other bee-keepers who kept their bees either in the shade of trees, vines, or bee-houses, and invariably, as they termed it, were "having such bad luck with their bees." They would all die out, and oftentimes their owners would courageously buy more and try again; but bad luck would continue if they continued the shade. To have success with bees the sun must shine on the hives—preferably unpainted hives—and the bees must be properly cared for besides. Take, for instance, the escaping bees that go to the woods and into hollow trees. It is the same—they are doomed. The great majority die the first winter, and the rest dwindle away the second summer or winter.

I would ask you, Mr. Editor, and the readers of GLEANINGS, to take a backward look into your own past experiences and say if I am not correct.

Plainfield, N. H. H. C. DANIELS.

ALSIKE AND TIMOTHY.

There is a great deal of horse sense in the following excerpt from the *Northwestern Agriculturist.* There is no better crop than alsike and timothy where the climate and soil are suitable. Every bee-keeper who is located in an alsike neighborhood ought to keep the seed on hand and sell it as cheaply as possible. Many of them ought to grow it, both for fodder and seed. Alsike and timothy always sell at the highest prices when properly handled.

There is a growing demand for a combination of clover and timothy for hay and pasture in all sections of the Northwest. The medium and mammoth red varieties do not succeed on low moist grounds as well as the alsike, which also matures with timothy. The feeding value of alsike clover is superior to the medium red variety—in fact, is quite equal to alfalfa in that respect. Alsike and timothy also make a very profitable seed crop in many sections of the Northwest. This is specially true on poorly drained lands where crops of grain are grown with much uncertainty during a rainy season.

The writer has called the attention of our readers on several occasions to the profits arising from growing crops of grass seeds, especially timothy, on fields that are inclined to be wet during the spring months. The wisdom of the suggestion is appreciated this spring by people who have their low lands seeded to the tame grasses. The addition of a quantity of alsike clover seed with timothy increases rather than decreases its selling value on almost every market. Farmers prefer such a combination for hay or pasture, and the seedsman uses them in making his various pasture mixtures. When the alsike clover is ripe and dry, the seed thrashes out from the straw quite as well as timothy with a common grain-separator. This should be speeded high, and the seed crop fed into it rather slowly. In fact, to do an economical job of thrashing grass seeds about half of the crew of helpers should take a rest and enjoy seeing the others work. If the machine is crowded, waste — an expensive and needless waste — is quite sure to occur. Grass seeds will be in active demand next spring at good prices. Save the clover-seed crop in every instance. Fodder corn will take the place of hay, but there is no substitute for clover seed.

MORE IRRIGATED LAND FOR BEE-KEEPERS.

ACCORDING to newspaper report, Mr. E. H. Harriman, the great railroad magnate, has decided to finance a great irrigation project in Imperial County, Cal. The area which will be reclaimed is over 1,500,000 acres of the very best land. The present system of canals in the Imperial Valley will irrigate only 500,000; but this is the largest single system in this country at present. It is one of the finest spots for bee-keeping in the United States, bees being phenomenally successful, as well as fruit-growing and alfalfa hay.

W. K. M.

# OUR HOMES

By A. I. Root

Receive my instruction and not silver; and knowledge rather than choice gold. For wisdom is better than rubies; and all the things that may be desired are not to be compared to it.—Prov. 8: 10, 11.

He that is slow to anger is better than the mighty; and he that ruleth his spirit than he that taketh a city.—Prov. 16: 32.

You know, friends, or at least most of you do, that I have a strain of White Leghorn fowls down in Florida that I think promises great things in the way of egg-laying; and before I take up my work again down there, say next November, I shall need a new male bird; and while I am about it why should I not have a pretty good one? While I do not think of going up into fancy prices (for I care little or nothing for high-scoring birds), I should like a male bird whose mother and grandmother were great layers. Well, I have got one—or at least I think I have. I bought him of the Glenolden Poultry-yards, near Philadelphia. Their sole business is to raise "trapnested" fowls. I paid $5.00 apiece for two cockerels whose mother had laid 220 eggs in a year. Now, before shipping them down to Florida I thought best to give them a careful test this summer here in Ohio. Accordingly I purchased three pullets, no relation to the cockerels, whose mothers also have made a fair record. As soon as they came to hand I gave them one of the cockerels, and set the very first eggs the three pullets laid. Mrs. Root insisted that the first eggs laid by pullets are not good for strong healthy chickens. But I was in a hurry to see how well they would do, and was agreeably surprised to have every egg produce a chicken but one, on the first trial. On the second trial I gave the hen 13 eggs, and she brought out 13 nice strong beautiful chicks; and they are a delight to me to study and watch, morning, noon, and night, and a good many times between.

What we have to do with, however, this beautiful bright morning, is with the first hen that hatched every egg but one. She is a Rhode Island Red, belonging to Mrs. Boyden. I "brought her up" last summer, and she *ought* to be a good young mother; and, in fact, she *was* one of the gentlest and nicest hens I ever saw. When she was sitting I could pat her on the back and admire her and call her pet names as much as I chose; but on the morning of the twentieth day, as soon as I came near her nest I found something had happened. She gave me to understand at once, very decidedly, that from that hour on it was to be "hands off" and no foolishness. In trying to get the eggshells out of the way of the chickens I got so many "digs" that I was obliged to get a bent wire and fish them out. By the way, it certainly is very desirable to have your sitting hens gentle and docile; to have pleasant relations between them and their owner, and I generally do have such a state of affairs. I got along with this hen very well by giving her a wide berth until one Sunday afternoon when a gusty thunderstorm came up very suddenly. She was a rod or two away from her home, under the stairway, and I was quite anxious to get her in and shut down the storm-door before the rain came. When I undertook to drive her she showed fight; then I gently pushed her with my foot; but she had got it into her head that I was after her chicks, and in a little while she became frantic. I finally said, "Old lady, there is no time for fooling, and you might as well understand right off now that you are my property, and that I am going to boss things."

Now, I hate to confess it, dear friends, but right then and there, with a storm blowing almost a hurricane, I had a regular fight with that sitting hen. Yes, and the saddest part of it is I lost my temper. She bit pieces out of the back of my hand, clawed my wrists, soiled the cuffs of my clean Sunday shirt, and was not whipped even then. I finally decided to *choke* her into submission, and so I choked her, as long as I dared to, to make her be decent; but the minute I let up she showed me that she was not whipped a bit. I had an exceedingly plain demonstration of the old saying,

A hen convinced against her will
Is of the same opinion still.

May be my couplet as above is not exactly as it has been handed down from generation to generation, but it hits the point exactly. While smarting from the wounds on my hands, and getting a glimpse of my soiled Sunday clothing, I was most sorely tempted to "wring her worthless neck," and it makes me shudder now, as I think how *near* I came to doing such an inhuman, unmanly, and unchristianlike thing. I was so angry at that hen that it made me shake like a leaf. I tried to collect myself; but while doing so she contrived to get loose, and, either with her head or leg, she managed to give me another vicious dig. But I *did* stop and consider. If I wrung her neck there was a brood of chickens only three or four days old, without a mother, and a storm coming up. Then, again, I reasoned, what could be accomplished, even if I *did* by my superior brute strength crush out her life? As I began to cool off I reflected that her only sin—that is, if animals can commit sin—was the sin of *misapprehension*. She *meant* well; she was defending her chickens as God taught her to do, but she did not *understand*. Oh dear me! How many others are there in this world of ours whose only sin is like that of this mother hen! She meant well, but she had a wrong understanding of things in that little head of hers. I set her down near her home where her chickens were hatched; but although the big drops of rain were now falling she did not see her shelter nor understand *any thing*. She was crazy with rage. She went to scratching in the dirt in a frantic way because she did not know what she was doing. She cackled, and stepped on her chicks until I finally picked her up and placed her by main strength in her domicile; and after chasing the chickens out in the rain I succeeded in getting the last one out of the weeds and under shelter. In this last encounter I felt *sure* I could keep my temper down; but she was so exceedingly idiotic in her frenzy that I actually lost my temper again. I did not hurt her at all. I did not *do* any thing out of spite;* but I was sorely tempted. Let me digress a little.

A few days ago I was thinking I had not been angry for many long months, perhaps not for years, as I used to be; but this provoking sitting

*Be ye angry, and sin not.—Eph. 4: 26.

hen had stirred me up and reminded me that my old temper (or perhaps I should say my old *tempter*) only lay hidden in the background, and I think it must have been hidden by only a *very thin* ambush.

Our first text reminds us that wisdom, or the ability to act wisely under all circumstances, is more to be desired than any thing else this world can offer; and our second one reminds us of the exceeding importance of ruling our own spirits, or keeping that wild demon that seems to be implanted in the most of us, if not all, in complete subjection. Under no circumstances should it ever be let loose. We can excuse a sitting hen or a dumb brute for getting into a frenzy of rage; but no human being should ever let any such impulses from the evil one prompt his actions.

I have not finished with my good friend Biddy, however. A few days later she was hovering her brood in the middle of the road leading from the barn to the street. A team was coming up, and I studied a little how to get her out of the way without a fracas. After I got her chickens out from under her I saw she was determined to fight, and so I gently gave her a "hist" with my foot clear up to one side of the road. Dear me! she came back and right up into my face like a perfect whirlwind. I grabbed her by the legs and caught her by the neck as I had on the former occasion, but not before she opened anew some of the scratches on the back of my hand, and, worse still, stirred up *also* that old temper. I was tempted again to wring her neck and not have such a vicious animal around; but the temptation was not nearly as strong as the former one,* and just now I have got two jobs on my hand. One is to teach this virago of a hen *decency;* and the other is to teach this *quick temper* of mine to behave in a like manner. I can say with good grace to both of these obstacles in my way, "Here! you keep back and down. *I*, through the grace of the Lord Jesus Christ, am going to be master and *ruler.*"

Now, friends, this is a simple story. Some of you may wonder why I have told it at all. Well, I have told it because it illustrates humanity. Husbands and wives are quarreling with no more reason than there was why this mother hen and I should have differences.† Over and over again when we look into the matter we find it is misapprehension and misunderstanding. When Satan gets hold of them, men and women often act as silly and foolish as that mother hen.

I told you some years ago of a man who wanted to move a building past a neighbor's house, and it was going to brush some of the shade-trees —may be break off a limb or two. The two neighbors got into a quarrel, and their wives and children became so absorbed in it that they came pretty near staying out in the street all day long, or at least while that house was going by. Lawyers were consulted, neighbors took sides, and it was the excitement of that part of the town for some time. But when they came to consider the matter coolly, they all decided there was really nothing to make a fuss about.

When Huber and I were taking that trip up through Northern Michigan, some people were afraid their horse was going to be frightened by our automobile. A woman got up in the buggy and gave Huber and me a piece of her mind. Before I could stop him, Huber retorted back to her, "We have just as good a right in the road as you have." I succeeded in quieting him; and I hope I convinced him, at least partially, that, as *our* method of conveyance was an unusual one, we had not *exactly* as good a right in the highway as they had, and when things became quiet we found the horse paid no attention to our vehicle at all, and I have found this to be the case over and over again.

There is one thing more I wish to consider. Had I given way to temptation, and wrung the neck of the poor mother hen by my superior physical strength, I should have succeeded in crushing out the life that God gave. I should have, in one sense, won the field, but would I have been any happier by so doing? There are several points to be considered right here. If a burglar breaks into your house at night, with a revolver in his hand, perhaps you would be excusable in taking his life—that is, in self-protection. It may be that the good of the community would demand that he be not permitted to live; but if this is true, by far the better way would be to have him put to death by law; but neighborhood quarrels are quite a different thing. Some years ago in our vicinity two men were quarreling over a very trifling matter. One called the other one a liar; and as it seemed to be the prevailing code at that time, and in that neighborhood, that one should knock a man down who had called him a liar, the other struck him a blow that killed him. In olden times where two men got into a fight the one who "licked" or killed his opponent was supposed to come out ahead. I believe it is not so much so now. If I were obliged to take the place of one or the other of those two neighbors I think I should prefer that of the one who lost his life. The man who killed his neighbor went to the penitentiary for a time; but an intimate friend assured me that his regret and remorse were so great for that act that he had had scarcely a moment's piece of mind since. Many times one is called on to act as peacemaker; but where both parties are in a frenzy of passion it is not only difficult but dangerous. I have heard of cases where one who interfered, with the best of intentions of stopping a quarrel, was either killed or killed somebody else before the matter was ended. I do not know how many temptations policemen have in handling men who are crazy with rage, or perhaps rage and drink together, but I think it very likely they

*Resist the devil, and he will flee from you.—JAMES 4:7.

† I believe Mrs. Root is one of the kindest, most sensible, and best-tempered women in the world; yet if I were to be wicked enough to set about it deliberately, I might be able (Satan helping me) to make her as unreasonable and bad-tempered as that sitting hen. Suppose, for instance, I should deliberately and on purpose walk into some yellow clay such as we have here in some places in this part of Ohio, and suppose I should purposely walk over her clean kitchen floor, and suppose I did this again and again, and give her to understand I did it on purpose to vex her. I sincerely hope that none but a drunken man ever did such a thing. But I greatly fear there are men, and perhaps women, who show such a devilish spirit. God forbid, however, that any *woman* be found of that kind. As I was going to say, I fear there are men who, under the influence of Satan, deliberately nag and provoke the women they have before God sworn to love and protect. Well, whenever such a state of affairs comes to pass, nobody knows, who has not been there, what a frenzy of passion *may be* stirred up in even a *woman's* soul. I say "may be," mind you; for God's promises are all sure and true; and where Christ Jesus rules in the heart of either man or woman they will be saved from any temptation that this world has to offer; for "God will not suffer you to be tempted above that ye are able."

find it extremely hard at times to let reason and good common sense rule the day.

The great crying need of the present hour is for men of ability to fill important offices for State and for nation; men who can not be tempted by great opportunities to enrich themselves while they are discharging important public duties; men who can not be swayed from the straight and narrow path by any allurement that this world has to offer. We have had such men, who have lived and died with an untarnished and unstained record, and just now we need more like them—men who can be entrusted with all this world has to offer. How much would it be worth, dear friends, when you come to die, and look back over the record of the life you have lived, to feel that you have merited the precious words of the dear Savior, "Well done, thou good and faithful servant; thou hast been faithful over a few things, I will make thee ruler over many things; enter thou into the joy of thy Lord?"

Well, it is a fact, even if it is a sad one. that it is not only individuals who get into a frenzy through some misapprehension, but sometimes it is great bodies of people—a whole political party or perhaps a great religious denomination, Let me give you one illustration. First I clip from the *Missouri Issue* for June 19.

The official organ of the liquor-dealers' organization in Philadelphia in February last said, "It is the Anti-saloon League and not the Prohibition party which is chiefly responsible for the big conquests which liquor exclusion has been making in recent times. The League has no politics; it works as effctively in Democratic as in Republican communities. All parties look alike to the Anti-saloon League."

As I have been with the Anti saloon League from the very start up to the present time, I think I am in position to declare that the above statement is true. The Anti-saloon League *is* working for the kingdom of God and his righteousness, and nothing else. Now, to illustrate how we are misunderstood, and in a way that seems to me "perfectly *awful*," I want to clip again from this same *Missouri Issue:*

While we are fighting the brewers, the official organ of the Prohibition party, whose editor, by the way, is managing Dr. Palmoree's campaign for the Prohibition nomination for the presidency, both editorially andin its correspondence, goes after the League, and the following is a sample of extracts from that paper, which have been recently going the rounds of the secular press:

"Damnable dope is local option, says State Chairman Stokes, editor of the Kansas City *Leader*, official organ of the Prohibition party."

Then follows extracts from the *Leader* where the editor of that paper gives it as his candid opinion that the Devil himself could not devise a more damnable dope than local option. Another where he says trying to demoralize Prohibitionists seems to be the principal business of that organization, referring to the Anti-saloon League, the organization which the brewers of this State would rather see broken up than any other opposition they have ever had.

Why, dear friends, is not this all wrong? I can readily believe that it was the Devil himself who suggested using such words to be applied to the Anti-saloon League. It is true that, from the very nature of things, especially in the way the Anti-saloon was started, we can not now pull down our colors and become a political party. We recognize the reason for the existence of that great political party, and God knows we have the kindliest feeling toward them. We are glad to give them all the aid in our power; and as we are working for one common end, and with the great Father above us, why in the world should we not be friends and neighbors, even if we do not see things exactly alike? May God help us all to take a lesson from the poor, mistaken, and misapprehending mother hen, and let reason and common sense rule, even in politics.

### THE CANCER THAT IS EATING AT THE HEART OF OUR NATION.

The following is a clipping from the *Temple Appeal:*

The Republican party has held its great convention in Chicago, and nominated a splendid man, William H. Taft, of Ohio, as nominee for President. We have read the Republican platform which Mr. Taft has to stand on. We are sorry for him, and sorry for the Christian voters of the G. O. P. The great subject which is nearest the hearts and homes of America finds no mention in their platform. They dare not touch the cancer that is eating at the heart of the nation—the American saloon. The time is not far distant when the voice of the people of this land will demand a temperance plank in the platform of the party that expects to be voted into power.

To all the above I hope our readers can join with me in a hearty amen.

# POULTRY DEPARTMENT

### WHY THE EGGS DID NOT HATCH.

"Do you see that nice brood of chickens? Are they not beauties? There are just thirteen of them. That mother had thirteen eggs, and she hatched every one of them; and as they are now over two weeks old, if no accident happens she will raise every one of them."

The above was a remark I made to my sister, Mrs. Gray, while she was looking over our premises; but just as I finished Mrs. Root put in:

"Now, dear husband, you want to show her the *other* hen with only eight chickens (one a cripple), that had nineteen eggs and brought out only the eight chickens."

As there were several standing around (the occasion was on the Fourth of July), it raised quite a laugh at my expense; and somebody suggested that it was doubtless providential that Mrs. Root and I were united together so she could tone down a little my disposition to see the bright things, so that, taking us both together, people could get a fair and unbiased view of this world as it opens up before us. Yes, it *is* true that the very next hen that I set, with exactly the same kind of eggs that were laid after the successful thirteen, hatched only eight chickens from the nineteen eggs. I boiled the eleven eggs that did not hatch, so I could dissect them without having a disagreeable mess of it, and in order, also, to utilize valuable animal food. Some of you may criticise me here; but I have been in the habit of boiling the eggs that did not hatch in the incubator, and giving them to my young cockerels to see if any bad results followed. They became ravenously fond of them, and they seemed to take the place of other animal food to perfection. The practice might teach a flock of chickens to eat their eggs; but if given to a pen of cockerels that are kept by themselves I have never noticed that it did any harm. Now, why did not that next setting, right away after the successful thirteen, give a good hatch? Mrs. Root said I gave the hen too many eggs; but as I had repeatedly been successful with twenty or more I did not think so. An accident

gave me a clew to the trouble. The hen with eight chickens hatched them upstairs in one of the little poultry-houses. One night she climbed the stairs to go back to her old nest. The eight chickens could not follow, so they doubled up with the hen that had the thirteen; and I concluded I would save time by letting them stay, especially as their mother was a borrowed hen; but when I picked her up to carry her home (she belonged to Huber, across the way) she was so light that I uttered an exclamation of surprise; in fact, she was nothing but skin and bones; and then I remembered that, when I borrowed her, about three weeks before, she seemed to have so little weight I was astonished; but I thought that, with plenty of food, and nothing to do but to sit on a nest, she would fatten up all right. But it turned out the other way. She got poorer and lighter still. Why did I give such a poor scrawny hen *nineteen* eggs? Well, I did *not* give her the nineteen. I first had a good large fat hen with the nineteen eggs; but after she went out on a strike and threw up her job I went all around the neighborhood to get any kind of sitting hen; and that is how I got hold of this light one. Now, my theory is this: That hen was out of health, and she could not keep up the proper temperature, even during the last days of June. And the moral I would adduce is this: When you get a sitting hen to do a good job (especially if you are going to give her *nineteen* eggs), get a good big fat hen that has a good constitution and a lot of stored-up flesh and blood to furnish the proper amount of bodily heat when needed. It just now occurs to me that the hen that hatched every one of the thirteen eggs used to get off her nest and stay for two or three hours during warm days. Yesterday, July 5, I noticed a hen that had a little inclosure about her nest, so that the other hens could not disturb her, got off her eggs in the middle of the day, and sat down beside them, instead of over them, for all of two hours; and the sitting hens that do the best work often take almost a "half-holiday" when the weather is quite warm. One very successful hatch came off when the mother was away for a couple of hours when two or three of the eggs were chipped. Of course, the weather was very warm; and although I was tempted to think she did not know her own business, the *result* seemed to indicate that she did. One of the poultry journals has suggested that an ordinary sitting hen has more wisdom in her little noddle than all the great incubator manufacturers and poultry people of the whole wide world massed together; and I confess that I often feel like uncovering my head and sitting down at the feet of a sitting hen when she stands up beside her nest, and tips her little head to one side as if to say, "You may bring on your scientific man and scientific books; but after you have got them all piled up, not all of you together know as much about this business as I do."

### DUCKS, APPLE-BLOOM HONEY, ETC.

You may wonder what ducks have got to do with apple-bloom honey; and, by the way, quite a few of the friends have inquired anxiously about my ducks this season. Well, I am *sorry* to tell you I am not in the "duck business" at present —not because I have lost interest, for, in fact, it is just the other way; but it was because I became satisfied that no one should think of keeping ducks unless he is off on a farm or where there are no neighbors very near.

As my ducks became older they seemed to be more and more inquisitive. At first the neighbors laughed at their queer actions, and said they rather liked to see the ducks around. But pretty soon they got to be a little *too* inquisitive. They were not only inquisitive, but they had a fashion of sampling every thing that looked as if it might be good to eat. In fact, I could not get a single blossom from my perennial peas last year because the ducks would, by some hook or crook, snap off the blossom-buds. Ducks are great explorers. Every day they went a little further, and I am just now waiting until I can get off by myself somewhere (may be down in Florida), where I can renew my acquaintance with those odd friends of mine, the Indian runner ducks.

On page 1157, Sept. 1, last year, I told you about my friend and neighbor, Mr. Philip Bohlei and his ducks. Well, he has over one hundred young ones already, and his first hatching has just been sent to market. Last year he got 60 cents each, live weight; but this year the price is somewhat better than that. He is on a good-sized farm, with no neighbors near. The ducks wander into a brook that runs through the woods nearly a quarter of a mile from his house. These ducks almost board themselves this season of the year. If you are interested you had better turn back and read the article I have mentioned. Well, I want to tell you this last day of June that Mr. Bohlei is also something of a bee-keeper. I think he got a few colonies last spring; and he has just surprised me by bringing me a jar of apple-bloom honey. In fact, he has extracted during apple-blossom time 240 lbs. from 7 colonies, and it was all sold quickly to his neighbors at the rate of $1.00 a gallon. You may begin to suspect what I have just found out, that Mr. Bohlei, with his nice family of boys and girls, is one of the men who succeed in almost every thing they undertake. The family all get up early in the morning, and they not only know how to work, but I think they *love* to work. So you see it does not make very much difference whether it is ducks or bees or general farming. They always have their dish right side up when it rains honey, even if it be for only just a day or two during apple-bloom as it did here in Ohio.

### HOW TO MAKE A HEN'S NEST.

*Mr. Root:*—The box you described on p. 768, June 15, is ideal, but the contents is where we differ. Fix your box as you described; then go to some good sod land, cut a piece of sod a little larger than you wish your nest to be, and let the sod have green grass on it three or four inches long if you can get it. Place it on the box. Now take some clean straw and make the sides of your nest to keep the eggs from rolling out, and place your eggs on the sod. The green grass will soon turn yellow, and the eggs will be on a nest as soft as a pillow. In the winter months the cold air can not come up through the bottom of your nest to chill your eggs, and in summer it keeps cool. Your hens will sit better, the eggs will hatch better, and this is my way to make a nest after fourteen years of experience in raising poultry. I am a cripple, made so by having my hip dislocated while playing base ball fourteen years ago. I can not do a day's work, so I turned to poultry, which I have studied very closely.

In the month of March I set nine hens on 135 eggs. They broke but one, and hatched 122 chickens, strong and robust. The eggs seem to draw some moisture from the sod. The nest stays clean and sweet — no foul smell about it, even when used the second time. L. M. Morris.

Bower, W. Va.

# PATENTS.

Twenty-five Years' Practice.

## CHARLES J. WILLIAMSON,

Second Nat'l Bank Bldg,. Washington, D. C.

Patent practice in Patent Office and Courts.
Patent Counsel of The A I. Root Co.

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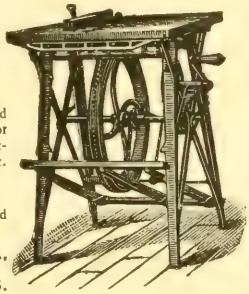
## BARNES' Hand and Foot Power MACHINERY



This cut represents our combined circular saw, which is made for bee-keepers' use in the construction of their hives, sections, etc.

**Machines on Trial**

Send for illustrated catalog and prices. Address

W. F. & JNO BARNES CO.,
545 Ruby St.
ROCKFORD, . ILLINOIS.

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## Metal Hame Fastener

Does away with straps. Every farmer and teamster delighted. Outwear harness. Fasten instantly with gloves on. **AGENTS 200%** profit. Indispensible when once used. FERRY'S HANDY HAME FASTENERS bonanza for agents. Many sell dozen an hour. Sample 25c, doz. $1.10. Circular at wholesale price free.
**COONER & FORTUNE CO. Dept. 18 INDIANAPOLIS, IND**

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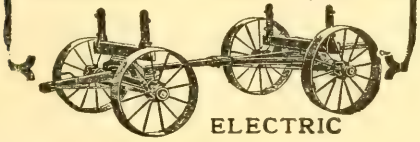
## Let Us Send You Our Book.

about good wheels and good wagons that will save you a lot of work and make you a lot of money—the

**ELECTRIC STEEL WHEELS**
—and the—
**ELECTRIC HANDY WAGON.**

By every test, they are the best. More than one and a quarter millions sold. Spokes united to the hub. Can't work loose. A set of our wheels will make your old wagon new. Catalogue free.

ELECTRIC WHEEL CO., Box 95 Quincy, Ills.



ELECTRIC

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# T. B. TERRY'S HEALTH HINTS

published only in The Practical Farmer each week, have been the means of saving lives and thousands have been helped to enjoy life more than they have ever done before. Send **Twenty-five Cents** to The Practical Farmer, Philadelphia, Pa., and read Mr. Terry's Health Hints **thirteen weeks on trial.** You will be surprised to find how simple a matter it is to get well and strong and keep so. The latest and best that can be given you, together with strong editorials on Agriculture, Live Stock, Gardening, Home Life, etc. A high class weekly, well worth the subscription price of $1.00 per year. Address

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**P. O. Box 1317 PHILADELPHIA, PA.**

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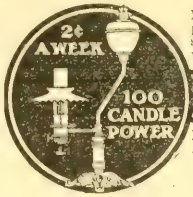


Makes and burns its own gas and produces a pure white, steady, safe, 100 candle power light. No wick, smoke, dirt, grease or odor.

**THE BEST LIGHT**

Lighted instantly. Over 200 styles. Agents wanted. Write for catalog

**THE BEST LIGHT CO.**
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## SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"

MYERS

The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

**F. E. Myers & Bro.,**
**Ashland, Ohio.**

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Do You Want A COPY OF ? FRUIT and VEGETABLE GROWING in MANATEE COUNTY, FLORIDA.

SEABOARD AIR LINE RAILWAY — SEABOARD AIR LINE RAILWAY

## WE WILL SEND TO YOU FREE.

This handsomely illustrated, fifty-page, booklet containing a most interesting description of the famous Manatee section, being a reproduction of a series of articles written by the editor of one of the leading agricultural papers in the United States after a personal investigation by him. The articles were run in serial form in his publication during the last four months, and we have embodied same in an attractive pamphlet, illustrating it with dozens of interesting and instructive scenes from actual life. This handsome piece of literature will be thoroughly enjoyed and worthy of preservation, and will be sent free, together with pamphlet containing a list of properties available in the LAND OF MANATEE upon receipt of five cents in stamps or currency to cover cost of mailing. Our supply of this booklet is limited, and if you want a copy you should not delay, but write at once.

J. W. WHITE,
General Industrial Agent
**Seaboard Air Line Railway.**
Dept F PORTSMOUTH, VA.

# In Bee Time

Distance is measured, not in miles, but in minutes. That's why PEIRCE AT ZANESVILLE is nearer you than Brown of your own State or county.

## There's No Red Tape.

Your order receives *personal* and *immediate* attention, and shipment from a city with *unsurpassed shipping facilities. Several carloads of Root's Goods* handled this season. Catalog free.

**EDMUMD W. PEIRCE,**
**ZANESVILLE, .. .. OHIO**

# What's the Matter With Hilton?

## WHY!

He has got his new goods fresh from The A. I. Root factory, and his 1908 catalog, and wants you to send for one free—40 pages illustrating and describing Root's goods at Root's prices. Send him a list of what goods you want, and let him tell you how much they will cost you.

Cash or supplies for beeswax at all times.

**GEORGE E. HILTON**
**FREMONT, :: :: MICHIGAN**

# HONEY-JARS

from
## New York City

We consider the No. 25 jar with solid metal cap and waxed liner the best jar made for honey.

Gross crates . . . . $5.00; 5 gross, $4.75 per gross.
12-oz. screw-cap jar . . 4.50; 2 gross, 8.25 per gross.
1-lb. sq. jar with cork . 5.00;
Italian queen . . . . 1.00. Catalog free.

Apiaries, Glen Cove, L. I.

**I. J. STRINGHAM, 105 Park Place, New York**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**
## ROOT'S GOODS

NO CHARGE FOR DRAYAGE.

**John N. Prothero**
**Dubois, .. Pennsylvania**

**1884 1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M. Jenkins**
**Wetumpka, : : Alabama**

# Dittmer's
## COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

# THE BEE-KEEPERS' Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND
**AN IMMENSE STOCK OF HONEY-CANS**
(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

| | |
|---|---|
| 12-in. 4-row shipping-cases with 3-in. glass | $17.00 per 100 |
| 9¼-in. 4-row shipping-cases with 3-in. glass | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass | 9.35 per 100 |
| 6¼-in. 3-row shipping-cases with 3-in. glass | 9.80 per 100 |
| 7⅛-in. 3 row shipping-cases with 3-in. glass | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 27 cts. cash; in trade, 30 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**UDO & MAX TOEPPERWEIN**
1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

# HIGHLAND FARM QUEENS

are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey, Highland Farm queens will produce them. We are now sending queens of this celebrated strain by return mail at the following prices:

| | 1 | 6 | 12 |
|---|---|---|---|
| Select untested queens . . . | $ .75 | $4.00 | $ 7.50 |
| Tested queens . . . . . | 1.25 | 6.00 | 10.00 |
| Select tested queens . . . . | 1.50 | 8.00 | 15.00 |

Safe delivery and satisfaction guaranteed. Send for queen circular—it tells why Highland Farm queens are superior to others.
Address all orders to

**J. E. HAND, BIRMINGHAM, ERIE COUNTY, OHIO.**

GRAY **CAUCASIAN** QUEENS.

*1905-1906 Queen-breeder in Apiary of Dept. of Agriculture, Washington, D. C.*

During that time Caucasians were being distributed by the department so that I handled many of the imported queens and bred much of the stock which other breeders are using, and am in a position to furnish the best of Caucasian queens. They are hardy and prolific, but not great swarmers; are builders of white combs, great honey-gatherers, and their extreme gentleness has won for them the name "STINGLESS." Queens are reared from imported mother of gray type. Have three-band or leather-colored Italians also. They are hustlers.

PRICE LIST AFTER JULY 1.

| GRAY CAUCASIANS. | | | | THREE-BAND ITALIANS. | | | |
|---|---|---|---|---|---|---|---|
| Untested queens..... | 1, $ .75; | 6, $4.25; | 12, $ 8.00. | Untested queens..... | 1, $ .60; | 6, $3.35; | 12, $6.50. |
| Select untested queens... | 1.00 | 5.50 | 10.00. | Select untested queens... | .75 | 4.00 | 7.50. |

SAFE ARRIVAL AND ENTIRE SATISFACTION GUARANTEED.

*No bee disease* ever in this section. Descriptive circular and testimonials free.

**LESLIE MARTIN, :: Birdcroft Apiaries, :: LEBANON, TENNESSEE.**

# ITALIAN QUEENS

And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens . . . . . | $ 75 | $4 00 | $ 7 00 |
| Tested queens . . . . . | 1 00 | 5 00 | 9 00 |
| Select tested queens . . . . . | 1 50 | 8 00 | 15 00 |
| Breeders . . . . . | 3 00 | 15 00 | |
| Straight five-band breeders . . . | 5 00 | | |
| Two-comb nuclei, no queen . . . | 2 25 | 12 00 | 22 00 |
| Three-comb nuclei, no queen . . | 3 25 | 18 00 | 32 00 |
| Full colonies on eight frames . . | 5 00 | 25 00 | |

**All queens now go by return mail.** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

**QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.**

# ITALIAN QUEENS

Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J L FAJEN, . ALMA, MO.**

## NOT CHEAP QUEENS, BUT QUEENS CHEAP

**500 Best Strain Italian Queens Ready to Mail March 1st.**

Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK ARK**

## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, 75 cts.; tested, $1.00.

**New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.**

## Golden Italian Queens, 75c

**Six for $4 00.**

Mailed promptly. Safe arrival and satisfaction guaranteed. Circular.

**J. B. CASE, . . . . Port Orange, Fla.**

## Westwood Red-clover Queens

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

## A Chance for Some Choice

# QUEENS

I have been breeding a few improved Carniolan queens this season. I think I have the finest lot I have ever reared, and will mail at once at the following prices (only one grade of queens to offer):

SELECT UNTESTED QUEENS.

One queen, 85 cts.; 2, $1.50; 6, $4.00; 12, $7.80
Four-frame nucleus, including untested queen, $3.50
Full ten frame colonies, " " " $7.00

**W. W. CRIM, Pekin, Ind.**

## QUEENS of MOORE'S STRAIN OF ITALIANS

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

PRICES: Untested queens, $1.00 each; six, $5.00; doz., $9.00. Select untested, $1.25 each; six, $6.00; doz., $11. Select tested, $2.00. Extra select tested, $3.00. Breeders, $5.00 to $10.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

**J. P. Moore, queen-breeder, Rt. 1, Morgan, Ky.**

## ITALIAN QUEENS

Bred from best stock to be had in the country, and by best methods, insuring beautiful, vigorous, long-lived queens. Prices for 1908:

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $ 5.00 | $ 9.00 |
| Tested | 1.50 | 8.00 | 15.00 |
| Select tested | 2.00 | 10.00 | 14.00 |
| Breeder | 5.00 | | |
| Two-frame nucleus | 2.25 | 12.00 | 22.00 |
| Three-frame nucleus | 2.75 | 15.00 | 28.00 |
| Full colony on eight frames | 5.00 | 25.00 | |

Add queen wanted to above.

I shall offer no Caucasians for sale this season.

**E. M. GRAVES, Ioamosa, San B rnardino Co., Cal.**

**W. H. Laws** says that, while his trade is very satisfactory, and about as large as he can handle, yet he does not want you who are new to him to forget that the very best of honey gatherers and a square deal is what you will always get when you buy Laws queens.

You should try his strain of Red-clover Long-tongue Italians, one firm alone having bought over 3000 of the Laws queens in the past six years; and more than half the queens sold this season are sent to customers who have bought in former years. A long string of testimonials testify to their merits, and you will make no mistake in buying Laws queens.

Single queens, $1.00; 6 for $5.00. Some very fine breeding queens on hand. Safe delivery and satisfaction guaranteed at $5.00 each. Address

**W. H. LAWS, Beeville, Bee Co., Texas.**

## ITALIAN QUEENS BY RETURN MAIL OR MONEY REFUNDED

Warranted, 75 cents each, six for $4.00; tested, $1.50 each. Circular free.

**D. J. BLOCHER PEARL CITY, ILLINOIS**

### Long-tongued

# Red-clover Queens

### Bred by their Originator

Do you want to get some specimen queens of the world-famous red-clover stock of Italian bees? Then buy from me, because I am the originator, and surely ought to know how to breed them in their purity. When you get them from me you know you have the real strain. For years I have devoted time and skill to this stock, trying to reach perfection. I can submit many splendid testimonials in favor of this stock to show my work has not been in vain. Try them, and YOU will be pleased also. I endeavor to please the practical man looking for definite results in dollars and cents. Many years' experience as head apiarist of The A. I. Root Co. enables me to fill the most exacting order with complete satisfaction to the purchaser Let me show you how well I can please you.

### Prices

| | | |
|---|---|---|
| Untested queen | June to October, | $1 00 |
| Select untested queen | " | 1 25 |
| Tested queen | " | 2 00 |
| Select tested queen | " | 3 00 |
| Breeding queen | " | 5 00 |
| Select breeding queens | " | 7 50 |
| Extra select " 1 yr. old | " | 10 00 |

**F. J. Wardell**
**Uhrichsville, Ohio, U. S. A.**

# 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5 00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11 00 |
| Tested queens | 1 50 | 8 00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders, $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

# QUEENS

of the Robey strain of three-banded Italians during the season of 1908. Warranted queens, 75 cts. each; $4.25 per six; $8.00 per doz. Tested queens, $1.00 each. Satisfaction or money refunded.

**L. H. ROBEY, Worthington, W. Va.**

**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.,* **Minneapolis, Minn.**

CHOICE

# QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3 00
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

---

**GOLDEN-ALL-OVER and RED-CLOVER**

# ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested . . . . . | $1 00 | $5.00 | $9 00 |
| Select untested . . . . | 1 25 | 6.50 | 12 00 |

Tested, $1.75 each; select tested, $2.00 each.

Positively all orders filled in rotation.

**Wm A. Shuff, 4426 Osage Ave., Philadelphia, Pa**

---

## DANIEL WURTH'S QUEENS.

**Golden Five-banded and Three-banded.**

Finest that can be had at any price; large and prolific. Have had 35 years' experience. Having moved from Pitkin, my address is Fayetteville, Ark., R. F. D. box 5, A.

**Untested, $ .75 each; 6, $4.35**
**Tested, 1.00 each; 6, 5.50**

---

# At St. Louis

On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

## Root's Bee-supplies

We sell at factory prices.
Send us a trial order.

**Beeswax Wanted.**

**Blanke & Hauk Supply Co.**

DEPT. B.

1009-11-13 Lucas Ave. **St. Louis, Mo.**

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

---

# WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

Complete NEW STOCK now on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

Our 1908 catalog is now ready to mail. Write for it to-day. Address

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

---

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**

**Dallas, : : . Texas**

# SPECIAL NOTICES

## By Our Business Manager

### HONEY-PACKAGE LEAFLET.

We have finally got ready for distribution a four page leaflet of honey-packages, some of which are not listed in our general catalog. This, together with our label catalog, we shall be pleased to mail on application to those interested.

### SECOND-HAND CASES FOR DANZENBAKER SECTIONS.

We still have sixteen crates, of nine cases each, for twenty sections 4 x 5 x 1⅞. In our last issue we mentioned eight cases to the crate, but find they are packed *nine* to the crate. Price, to close out, $1.50 per crate, or $20.00 for the lot.

### ONE-FRAME OBSERVATION HIVES AT A DISCOUNT.

We have a few one-frame observation hives, slightly shop-worn, which we offer at reduced price to close out before taking inventory. They are almost equal to fresh new goods. There are seven with supers, which we will sell at $2.25 each, and two without supers, at $1.90 each.

### SECOND-HAND 60-LB. CANS.

We have on hand from one to two hundred second-hand five-gallon cans, two in a case, in fair condition, which we offer at $4.00 for 10 cases; 25 cases or over, at 35 cents. They are all looked over, boxes put in good shape, and no cans included which are rusted on the inside so far as we can determine by careful examination. They ought to be worth this price, especially for cheap grades of honey.

### JAPANESE BUCKWHEAT.

Just after going to press with our last issue we secured 50 bushels of Japanese buckwheat seed in Wisconsin, which will undoubtedly be here before this reaches our readers. We inquired of one of the large seedsmen, and they wanted $1.70 per bushel of 48 lbs. in ten-bushel lots. We can still supply seed in two-bushel lots and upward at $1.50 per bushel, no charge for bags, although at this price we have very little margin. One bushel, $1.75; half-bushel, $1.00; peck, 60 cents, bag included in each case.

### EXTRACTORS WITH POWER GEAR.

Since the publication of the last edition of our catalog we have developed a special gear for use on extractors intended to be driven by power, which adds five dollars to the price of the machine. A crank is also included, so the machine may be run by hand if any thing happens to your engine or other motive power. The gear-bar across the top of the can projects beyond the can far enough to receive a third bearing outside the pulley and belt-tightener. The bearings stand higher, and are much heavier. The cross-shaft is one inch instead of ¾—the usual size on hand-driven machines.

### HONEY-LABELS.

On the inside cover pages of this issue will be found samples of some of our honey-labels printed in colors. Our job-printing department is prepared to furnish promptly these and other styles which you will find listed in our label-catalog, mailed on application.

Bee-keepers can not be too careful or painstaking in putting up their honey for market in a neat and attractive way. When you look over the shelves of the modern up-to-date grocery and note the neatness and taste displayed in many of the tempting packages, you will see the reason for care and forethought in putting your honey in tasty and attractive form before placing it on the market.

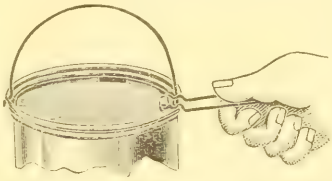
### UNTESTED QUEENS.

The very favorable conditions prevailing here at Medina have enabled our queen-breeders to produce a very nice stock of Italian queens, in sufficient quantity not only to supply our trade but to have some over. We do not care to go to the trouble and expense of having these queens tested more particularly, as it is not likely many of them are mismated. Bee-keepers who are anxious to get a good strain of bees for their apiary will find this a unique opportunity to secure something extra good at small expense, hence we think that we are doing them a favor by calling their attention to the opportunity. It is not every year we are in position to do this; but a happy combination of circumstances makes it possible for us to offer a lot of really good queens at a nominal figure. Remember a young vigorous queen is a great help in wintering, and in spring she is certain to outdistance an older one. Price for one queen, $1.00; six, $5.00.

### BALL-BEARING EXTRACTORS.

For some time we have been on the lookout for a good ball-bearing at a price low enough to enable us to use it in our honey-extractors without greatly increasing the price. We have now found what we have been looking for, and propose from this time forward to equip all our extractors with ball-bearings. This we can not do at the regular price; but the machines will be so much improved in durability and easy-running quality that you will be well repaid for the slight additional price. In addition to the ball-bearings we are arranging a slip-gear device on almost all hand-power machines, to enable one to throw the gears out of mesh and stop the crank from revolving the moment you stop applying power, and allow the reel to spin on its ball-bearings, throwing out the honey while you uncap the next lot of frames ready to put into the extractor. None of these improved machines are in the hands of our dealers, as we did not get them perfected in time for this season's trade. You must not expect the new features on any extractors you may order this season unless you especially request it or mention it in your order. The revised price list, with these improvements, we expect to publish in the next issue of GLEANINGS. The increase in price over the present list will be from one to two dollars, according to size.

### CLOSE-OUT BARGAINS IN TIN PAILS.



We have a little stock of tin pails, such as we formerly listed in our catalog, which we offer, to close out quickly, at the following prices:

RECORD'S TIGHT-SEAL-COVER PAILS.

Of this style we have on hand, to close out, 163 No. 1, holding 1½ lbs. of honey at $4.50 per 100, $7.00 for the lot; 102 No. 2, holding 3 lbs. of honey, at $5.50 for the lot; 36 No. 5, holding 7½ lbs. of honey, $2.50 for the lot.

RAISED-COVER PAILS.

We used to sell large quantities of these pails for honey. We have the following to close out: 43 1-qt., holding 2½ lbs. of honey, $1.50 for lot; 144 2-qt., holding 6 lbs. honey, $4.50 per 100; $6.50 for lot; 100 nests of 1 and 2 qt., $8.50 per 100 nests; 60 nests of ½, 1, and 2 qt., $6.00 for lot; 250 1-lb. Jones pails, with wax-seal cover, $5.00 for lot.

The prices named above are very much below what we formerly sold them at, and they could not be replaced now for anywhere near this figure. We offer them low to close them out quickly. First come, first served. Better name a second choice for fear the first may be gone.

### CLOSE-OUT BARGAINS IN GLASS PAILS AND TUMBLERS.

We have a few remnants of stock in glass pails and tumblers formerly listed, which we offer, to close out, at greatly reduced prices. 5 bbls., 16⅔ doz. each, No. 789, tin-top tumblers, holding 1 lb. of honey. Price to close out, $5.00 per bbl.

Of screw-top glass pails we have 1 bbl., 16⅔ doz., No. 776, holding a scant pound, $5.50; 1 bbl., 12½ doz., No. 777, holding a full pound, $5.00; 2 bbls. 8⅓ doz., No. 778, holding 1½ lbs., $4.50 per barrel.

**RED-CLOVER QUEENS**

200 lbs. honey from my breeding colony. Mostly red-clover honey. Untested queen, 65 cts.; tested, $1.00; doz., $7.00. Four-frame nuclei and fine tested queen, $4. **G. Routzahn, Biglerville, Pa.**

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLD'G. CLEVELAND, OHIO.**

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Help Wanted

WANTED.—An experienced bee-keeper to install and take charge of an apiary on the Niagara River. Address
H. H. LARKIN, Buffalo, N. Y.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

## For Sale

FOR SALE.—Mated thoroughbred homer pigeons at $1.00 per pair. FRANKLIN G. FOX, Erwinna, Pa.

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—1908 home-grown recleaned scarlet-clover seed, now ready; $3.50 per bushel, sacks free. A No. 1 stock.
G. L. ELLIS, Millsboro, Del.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—200 cases of 5-gallon cans. All are free from rust inside, and the majority have been used but once. Two cans in a case; 10 cases or more, 25 cts. per case.
J. E. CRANE & SON, Middlebury, Vermont.

FOR SALE.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cents each, postpaid. FRANK ALEXANDER,
Delanson, N. Y.

FOR SALE.—Best Wisconsin sections, 1000, $4.00; 2000, $7.75; 3000, $11.00; 5000, $17.50; No. 2, 50 cts. less; plain, 25 cts. less, 24-lb. 2-in. glass shipping-case, 14 cts. Catalog free.
H. S. DUBY, St. Anne, Ill.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

Don't bother with cans. Kegs are cheaper and easier to fill and handle. 160-lb. pine kegs, with 2-in. hole and plug, 50 cts. each, f. o. b. factory. Orders given prompt attention. Send list of supplies needed. I can save you money.
N. L. STEVENS, Moravia, N. Y.

FOR SALE.—75 eight-frame Root hives with good worker combs; used two seasons; also lid and bottom; $1.60 each. One hundred 4¼ supers, trimmed with sections and foundation; used one season; 40 cts. each. Sixty 10-frame hives and five Danzenbaker hives, with combs wired, all Root's goods, $1.75 each, without super. Thirty 8-frame supers, trimmed, $3.00 each.
H. A. ROSS, Evansville, Indiana.

## Real Estate for Bee-keepers

FOR SALE.—Twenty acres—three in fruit, two in raspberries; 80 colonies or bees; no disease; 12 miles south of Sioux City. For particulars, address
L. P. GOODWIN, Route 2, Dakota City, Neb.

## Bees and Queens

Golden-all-over queens and nuclei. Price list free.
J. H. WAGNER, Beatrice, Neb.

FOR SALE.—Italian queens, clover stock; untested, 50 cents each; tested, $1.00 each. W. SIMPSON, Meyer, Ill.

Golden Italian queens by return mail, 50c.
J. F. MICHAEL, Winchester, Ind.

FOR SALE.—Golden "mortgage-lifters;" warranted queens, $1.00; tested, $1.50 to $3.00. D. E. BEST, Slatington, Pa.

FOR SALE.—Italian and Carniolan queens, untested, 75 cts.
GEO. E. KRAMER, Valencia, Pa.

FOR SALE.—800 colonies of bees; for particulars, address
DR. GEO. D. MITCHELL & CO., Ogden, Utah.

FOR SALE.—Italian queens, hustlers. Untested, 65c; tested, $1.00. MRS. J. W. BACON, Waterloo, N. Y.

FOR SALE.—Northern-bred red-clover queens. Untested, 75 cts.; tested, $1.00. E. S. WATSON,
R. F. D. No. 2. Madison, Maine.

FOR SALE.—Italian, Carniolan, and Caucasian queens. Untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Stamps not accepted. EDWARD REDDOUT, Baldwinsville, N. Y.

Golden Italian queens, untested, 50 cts. each; tested, $1 each. Your money right back if you say so, if the order can not be filled in three days. D. T. GASTER, Rt. 2, Randleman, N. C.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

Standard bred red-clover Italian queens. Bred for gentleness and their superior working qualities. Virgins, 45 cts.; untested, laying, 85 cts.; select untested, $1.00; tested, $1.50.
J. R. MCCORKLE, Wingate, Ind. Rt. 5.

FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $5.00; twelve, $9.00. Carniolan, Banat, and Caucasian queens, select, $1.25; six, $6.00; twelve, $10.00. Tested, any kind, $1.50; six, $8.00. Choice breeders, $3.50. Circular free. W. H. RAILS, Orange, Cal.

## Wants and Exchanges

WANTED.—Refuse from wax-extractors and old combs for cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

## Honey and Wax for Sale

FOR SALE.—New crop fancy white-clover and amber comb honey. W. J. HARBOUGH, Kernstown, Va.

FOR SALE.—New No. 1 white clover comb honey at $3.50 per case of 24 sections; less than six cases, 25 cts. per case extra.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm,
Kendaia, N. Y.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice white and alsike clover honey in 60-lb. square cans, 2 cans to a case, at 9 cts. per lb., delivered at railroad station. Reference, agent or postmaster, Lakeville. St. Joseph Co., Ind., at which place address— C. A. BUNCH.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan, Ky.

FOR SALE.—1908 crop of Northern Michigan red-rasbberry and clover honey; heavy body, light color, fine flavor. Price $10.50 per case of 120 lbs. (two cans). Cash with order.
IRA D. BARTLETT, East Jordan, Mich. Box 156.

FOR SALE.—Our own production of comb honey, 4 x 5 plain sections, No. 1 quality, at 18 cts. per section. Our comb honey won every important premium in the State last year. If you have a place for some " gilt-edge " comb, write.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—10,000 lbs. *clover and raspberry honey*, ripened on the hive in sealed combs; delicious aroma, rich and ripe. This honey is the best a specialist can produce; 60-lb. tin cans, two in a case, $10.75—any quantity. Sample on request.
F. B CAVANAGH, Boscobel, Wis.

FOR SALE.—Our crop of raspberry extracted honey is now on the hives curing, and will not be extracted until nearly August. This will insure its being the *very best* that can be produced—rich, ripe, delicious. Then it will be put into *new* 60-lb. cans, two in a case. It is reasonable to assume that this rich ripe honey can not be produced as cheaply as the thin, watery, ordinary kind, and we shall have to get 10 cts. a pound for it on car. A sample will be mailed free.
E. D. TOWNSEND, Remus, Mich.

## Honey and Wax Wanted

WANTED.—White ripe extracted honey; will pay cash.
GEORGE RAUCH,
No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—We are in the market for No. 1 white extracted honey in any quantity. Correspondence solicited. State kind, quantity, and price asked. We also have for sale 60-lb. honey-cans, 2 cans in case. Both cans and cases in A1 condition, at 30 cts. per case. MICHIGAN WHITE CLOVER HONEY CO.,
31-33 Griswold St., Detroit, Mich.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

I club a high-grade Italian queen with GLEANINGS, new o renewal. W. T. CRAWFORD, Hineston, La.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden Italian queens, 75 cts. each. Satisfaction guaranteed.
WALTER S. HOSS, 1127 Blaine Ave., Indianapolis, Ind.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND,
Birmingham, Erie Co., Ohio.

Order your bee-supplies from Superior Honey Co., Ogden, Utah, at Root's catalog prices. You save time and money. Largest dealers in the West.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

SWARTHMORE Golden-all-over queens—the famous original stock. Queen-rearing outfits and books; 40-page catalog.
E. L. PRATT, Swarthmore, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for cir cular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# Texas School Lands

## $1.00 to $5.00 Per Acre

Texas has passed new School Land Laws. Millions of acres are now to be sold by the State at $1.00 to $5.00 per acre; only one-fortieth cash and no more to pay for 40 years, unless you desire; only 3 per cent interest. You can buy 160 acres at $1.00 per acre, payable $4.00 down and 40 year's time on the balance, 3% interest. Greatest opportunity ever offered to investors and farmers. Texas land is better than Oklahoma, Iowa or Illinois. Send 50 cents for Book of Instructions, New State Law and Map of Texas, and I will tell you FREE how to secure list of over 400 million acres of vacant public lands in 25 different States, which are open to homestead. Address

**E. C. HOWE, 784 Hartford Building, CHICAGO, ILL.**

# Italian Queens

**GOLDEN AND CLOVER STOCK.**

Choice queens, 75 cts. each; six for $4.00, or $7.50 a dozen.

**GEO. W. BARNES, Box 340, Norwalk, O.**

# DOOLITTLE & CLARK

Are sending out fine Italian queens at the following prices: Untested, $1; 3, $2.50; 12, $9.00. Tested, $2.00; 3, $5.00; 12, $18.00. Breeders, $2.50, $5.00, and $10.00. Send for circular.

**BORODINO, ONONDAGA CO., N. Y.**

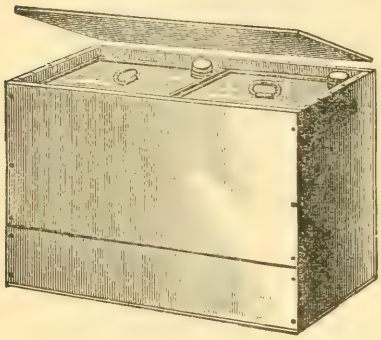
**BIG STOCK OF**

## BEE-SUPPLIES AT FACTORY PRICES.

To bee-keepers sending their names and address I will send list of supplies that I have in stock up to June 30. On a cash order for $10.00 or over I will give 8 per cent off; cash order for $5.00 or over, 5 per cent off, delivered here at depot.

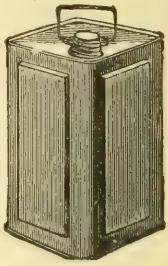
**S. D. BUELL - UNION CITY, - MICH.**

# TIN HONEY-PACKAGES



## FIVE GALLON (60-lb.) SQUARE CANS.

A five-gallon can is the favorite package for shipping extracted honey. There is no shrinkage and consequent leaking, no taint to the honey from wood as is so frequently the case with barrels and kegs. The cans, being made square, economize space, and are easily boxed. They are used exclusively in the far West.

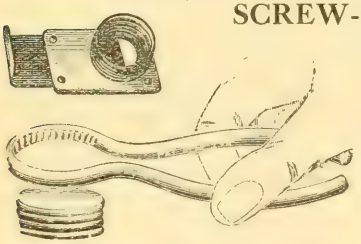


## SMALL SCREW-CAP CANS.

Besides the five-gallon square cans we list also the three smaller sizes—1, ½, and ¼ gallon. These are furnished with 1¾-inch lined screw cap like the five-gallon cans. We can also supply the five-gallon cans with 4-inch screw as well as the 1¾, at 5c each extra; and with an 8-inch screw at 15c each extra. Latter is largely used in Texas for chunk honey. Price of cans packed in boxes or crates given in the list below.

PRICE LIST OF SQUARE CANS.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box of | 1 | 5-gal. | can | (60 lbs. | capacity) | $ .55; | 10 | boxes, | $ 5.00. | Weight | per | box | 10 | lbs. |
| " " | 2 | 5-gal. | " | (60 lbs. | " ) | .85; | " | " | 8.00. | " | " | " | 15 | " |
| " " | 10 | 1-gal. | " | (12 lbs. | " ) | 1.50; | " | " | 14.00. | " | " | " | 20 | " |
| " " | 12 | ½-gal. | " | ( 6 lbs. | " ) | 1.50; | " | " | 14.00. | " | " | " | 20 | " |
| " " | 24 | ¼-gal. | " | ( 3 lbs. | " ) | 2.40; | " | " | 23.00. | " | " | " | 25 | " |
| " " | 100 | 1-gal. | " | (12 lbs. | " ) | 11.00; | " | " | 105.00. | " | " | " | 110 | " |
| " " | 100 | ½-gal. | " | ( 6 lbs. | " ) | 9.00; | " | " | 85.00. | " | " | " | 80 | " |
| " " | 100 | ¼-gal. | " | ( 3 lbs. | " ) | 7.00; | " | " | 65.00. | " | " | " | 60 | " |



## SCREW-CAP HONEY-GATE AND CAN-SCREW WRENCH.

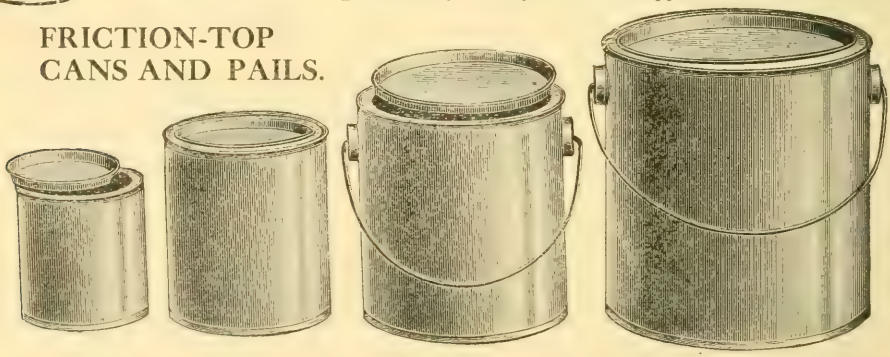
Screw-cap gate, 15c; by mail, 18c. Screw-cap wrench, 10c each; 75c per doz; by mail, 4c each extra.

We furnish the gate for 1½, 1⅝, or 1¾ screw. Other sizes made to order from caps you may furnish.

The wrench fits a 1¾ screw, and can be used on 1⅝ or smaller by a bushing between cap and wrench.

*When you order these gates separate from cans we can not guarantee a fit unless you send us a cap from the screw with the order.*

## FRICTION-TOP CANS AND PAILS.



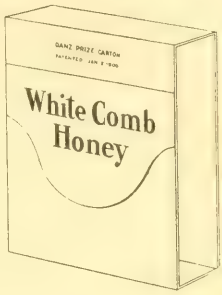
For packing honey in small tin packages we know of nothing better than package here shown. We do not carry these in stock, and offer them only for direct shipment from factory in original packages as indicated.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1-lb. can, | $2\frac{11}{16}$x4, | from Maywood, | near Chicago, | in crates of | 1155 | at | $25.00 | per | crate. |
| 2-lb. " | $3\frac{1}{2}$x$4\frac{3}{4}$, | " | Hamilton, Ohio, | in crates of | 588, | | $15.00 | per | crate. |
| $2\frac{1}{2}$-lb. " | 4x$4\frac{9}{16}$, | " | " | " " " " | 462, | | 14.00 | " | " |
| 3-lb. " | $4\frac{3}{16}$x$4\frac{7}{8}$, | " | " | " " " " | 420, | | 14.50 | " | " |
| 5-lb. pail, | $5\frac{1}{32}$x$5\frac{11}{16}$ | " | " | " " " " | 220, | | 12.75 | " | " |
| 10-lb. " | $5\frac{15}{16}$x$7\frac{1}{2}$, | " | " | " " " " | 116, | | 9.50 | " | " |

Send all orders to Medina for unbroken crates as indicated, to be shipped direct from the point indicated only. The 1-lb. to 3-lb. have no bail, while the 5 and 10 lb. have a wire bail.

# CARTONS for COMB HONEY

We are now prepared to furnish these cartons in several styles and in two grades of stock; also in various styles of printing. We can also execute special designs in quantities on special orders. Let us know your wants.




The Danz. open-end carton will enclose a section and pack in the regular shipping-case. We furnish it for 4x5x1⅜ and 1½, 3⅝x5x1½, and the several widths of the 4¼ section. To hold the carton in place on the section you need a rubber band around it. These bands are not furnished with the cartons except at an extra price, and only when so ordered.

The folding carton is of a different pattern from those heretofore furnished. They tuck in at the top and bottom in a neater form, and are without tape handle. Sections packed in these cartons require shipping-cases made a little larger than the regular sizes, but such cases do not require glass. Some of our agencies have on hand some of the old style cartons in some sizes, which may be supplied on orders unless otherwise specified. These cartons are furnished for all regular sizes of sections; namely, 4¼x4¼x1⅞ and 1½; also 4x5x1⅜. Other sizes furnished in quantities on special order.

PRICE LIST OF CARTONS.

Danz. carton, regular size, plain or printed name blank, 50 cts. per 100; 500, $2.25; 1000, $4.00. Weight, 4 lbs. per 100.

Folding cartons, regular sizes and grade, plain, 60 cts. per 100; 500, $2.75; 1000, $5.00.

Folding cartons, regular sizes and extra quality, plain, 75 cts. per 100; 500, $3.25; 1000, $6.00.

Extra for printing stock design, name and address blank, 50 cts. per 1000 one side; 75 cts. both sides for each color.

For inserting name and address in design at same printing, add 50 cts. for any quantity. For printing in name and address in a stock design, after that has been printed, add 50 cts. for 100; 75 cts. for 500; $1.00 for 1000. Such cartons can be supplied only from Medina. Special designs or printing quoted on application.

# AIKIN BAGS FOR CANDIED HONEY.

These are of tough paper coated with paraffine. Honey should be poured into them just as it begins to thicken by granulation.

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-pound bags, | | 3½x5½, | per | 100, | $ .65; | 500, | $3.00; | 1000, | $5.50. | Weight | per | 1000, | 10 pounds |
| 2 " | " | 5 x7½, | " | " | .80; | " | 3.75; | " | 7.00. | " | " | " | 18 " |
| 3½ " | " | 6 x9½, | " | " | 1.00; | " | 4.75; | " | 8.75. | " | " | " | 28 " |
| 5 " | " | 7 x 10, | " | " | 1.20; | " | 5.50; | " | 10.50. | " | " | " | 35 " |
| 10 " | " | 10x10½, | " | " | 1.50; | " | 7.00; | " | 13.50. | " | " | " | 45 " |
| Printing name and address extra, | | | " | | .30; | " | .75; | " | 1.00. | | | | |

May be sent by mail for 18 cts. per pound for postage and packing.

# Candied-brick Honey-wrappers.

We have developed a good trade in choice candied honey cut into 1¼-pound bricks, like a piece of butter. These bricks are wrapped in parchment paper, placed in a folding carton, and a fancy white wrapper printed in gold with end-labels put on the outside. We can supply the parchment wrappers, cartons, and labels complete ready for use at $7.50 per 1000 sets. With your name and address on the wrapper add $1.00 per 1000.

**The A. I. ROOT COMPANY, MEDINA, OHIO**
**CHICAGO NEW YORK PHILADELPHIA**

THE
CELL
THAT SELLS AND EXCELS
IS FOUND IN
DADANT'S
FOUNDATION
DADANT'S FOUNDATION DADANT'S FOUNDATION
and
BEE
SUPPLIES
DADANT & SONS.
Hamilton, Ill.

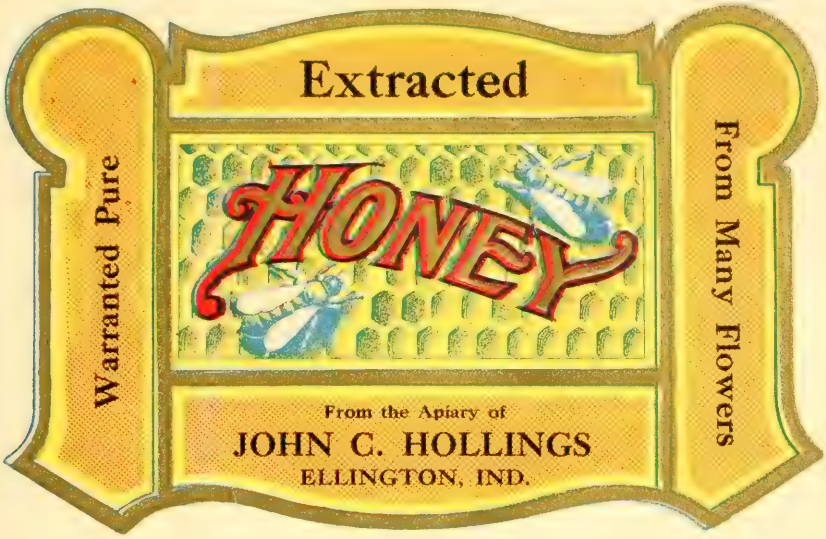
SUPPLIES
FOR
BEE-KEEPERS

Every thing you want; all made by us
in our own factories--at
LOWEST PRICES.

The American Bee-keeper (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

W. T. FALCONER MFG. CO.
DEPARTMENT G. :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# Tasty Labels for Tasty Honey-packages




No. 84.—Wording except line Honey changed to suit. 250, $1; 500, $1.50; 1000, $2.25.

No. 77.—Wording below line Honey changed to suit. 250, $1; 500, $1.25.

No. 85.—Wording except line Honey changed to suit. 250, 75c; 500, $1.25; 1000, $1.75.

A complete catalog of 40 different labels sent free on request. Special labels printed at reasonable prices. Address orders to

***The A. I. Root Company,***
*Medina, Ohio.*

No. 82.—Wording except line Honey changed to suit. 250, 30c; 500, 50c; 1000, 75c.

# SUBURBAN LIFE

## For August

CHAS. D. KELLOGG, the well-known naturalist and bird lover, tells for the first time the story of

# DON--A DOG

Every one who has listened to this wonderful man, or perhaps seen his dog, will be interested in the story.

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### Other Features in this Number

Real Camping in Wisconsin
Good Evergreens from Home Grounds
The Canning and Preserving of Fruit
Common Sense in Care of Horses
Sleeping Out of Doors
Good and Bad Fences
Enjoying a Piazza Vacation

ALL NEWS STANDS AT 25 CENTS A COPY

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### SPECIAL VACATION OFFER

On receipt of $1.00 we will send Suburban Life for the balance of the year, beginning with the July issue. The first number can be sent to your Summer Home and the balance to your permanent address. This offer holds good anywhere in the United States or possessions. To Canadian points add 25 cents extra for postage.

Send your order now and it will include our double Home Building Number, issued in September.

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Publishers Suburban Life. 44 East 23d Street, New York

# Gleanings in Bee Culture

A. I. ROOT AND HIS RHODODENDRON IN FULL BLOOM.

*Published by* The A. I. Root Co., Medina, Ohio, U. S. A.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI AUGUST 1, 1908 No. 15

# SENT ON APPROVAL

To Responsible People

# LAUGHLIN FOUNTAIN PEN

AND

# RED GEM

## *The Ink Pencil*

To test the merits of **Gleanings in Bee Culture** as an advertising medium, we offer you your choice of

**THESE THREE**
POPULAR STYLES
POSTPAID FOR ONLY

**$1.00**

*POSTPAID TO ANY ADDRESS.*

(By Insured mail 8c extra)

***ILLUSTRATIONS ARE EXACT SIZE***

EVERY pen guaranteed full 14K Solid Gold. Cut on right hand, our new Non-breakable Transparent, a pen in which you can **always see** the quantity of ink in the holder. We guarantee this holder and cap against breakage from any cause whatsoever, accident or otherwise. Cut on left, our Standard Opaque (black) Holder; either of these two styles plain or engraved as preferred.

To show our confidence in the Laughlin Fountain Pen, you may try it a week, if you do not find it as represented, a better value than you can secure for **three times this special price** in any other make, if not entirely satisfactory in every respect, return it and we will send you $1.10 for it. The extra 10 cents is for your trouble in writing us. (Two customers in 3000 have asked for return of money.)

Cut in center is our famous and popular Red Gem—the Ink Pencil, a complete leak-proof triumph may be carried in any position in any pocket or shopping-bag; writes at any angle at first touch. Platinum (spring) feed, Iridium point, polished vulcanized rubber case, terra-cotta finish. **Retails everywhere for $2.50.**

AGENTS WANTED.—Write for our money-making proposition and terms. **Write now,** "lest you forget." Address

## LAUGHLIN MFG. CO.

316 Majestic Bldg. :: :: Detroit, Mich.

# C. H. W. WEBER

HEADQUARTERS FOR

# BEE SUPPLIES

DISTRIBUTOR OF

**ROOT'S GOODS EXCLUSIVELY**

**AT ROOT'S FACTORY PRICES**

NO CHARGE TO DEPOTS
FOR DRAYAGE.

## HONEY WANTED.

Fancy white clover, EXTRACTED and COMB. State how it is put up, and price expected delivered in Cincinnati.

# C. H. W. WEBER

Office and Salesroom, 2146-2148 Central Ave.
Warehouse, Freeman and Central Avenue.

**CINCINNATI, .. .. .. OHIO**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

NO. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

NO. 2.—Three-fourths of the total surface must be filled and sealed.

NO. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

SAN FRANCISCO.—Several cars of new honey have been sent east from El Centro, and practically all of the Orange Co. extracted honey has been bought by a San Francisco packer. The prices to growers on new crop extracted range from 5 to 6 cents. The crop in nearly all sections is very short, and prices are fully as firm as they have been for several months past. Packers prices, as quoted below, show no change. Water-white comb, 16 to 17; white, 16; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5¾.

July 18. *Pacific Rural Press.*

BUFFALO.—The season for old honey is about closed. Very little is on the market not sold. But little new honey is arriving. The trade will probably buy sparingly until the weather is cooler and honey becomes more plentiful. No. 1 to fancy white clover, 16 to 17; No. 2 will not sell now.

July 17. W. C. TOWNSEND.

CINCINNATI.—Quite a number of shipments of fine honey are now coming in, but prices are ruling lower than last season. In fact, we have never seen buyers so disinterested in a new crop of honey. We are offering the choicest at 14 and 15 by the single case. The demand for extracted honey is dull, which we attribute to the lack of activity in the business world; and, secondly, this is one of the dullest months in the year. We are selling amber extracted at 5½ to 6½ according to quality and quantity purchased. Fancy white extracted honey brings from 7 to 9 cts. Beeswax is somewhat easier, and we are paying 27 cts. cash and 29 in trade, delivered here. The above quotations on honey are the prices at which we sell—not what we are paying.

July 21. THE FRED W. MUTH CO., Cincinnati, O.

ZANESVILLE.—Some honey is arriving on this market from local producers, but practically none from outside except Cuban. For clover honey jobbers are offering 14 cts. for fancy, and 13 for No. 1. The wholesale price is scarcely established. There is a much improved demand for native honey, but scarcely any for the imported. Extracted in small retail packages is moving slowly. For good quality of beeswax I offer 30 cts. in exchange for bee-supplies. EDMUND W. PEIRCE,

July 22. Zanesville, O.

CINCINNATI.—There is an abundance of comb honey arriving daily, but no demand for it. We can give no other reason than, perhaps, hard times. People do without it. There is a fair demand for extracted white clover, which is selling at 7½ to 8. Amber in barrels is selling at 5½ to 6. Beeswax, light demand, is selling at 33.

July 22. C. H. W. WEBER, Cincinnati, O.

INDIANAPOLIS.—The demand is good, but prices very irregular and unsettled. Producers are offering fancy white comb as low as 12 cts., and white-clover extracted in five-gallon cans as low as 7 cts. Amber grades are not mentioned here at present. Beeswax remains steady at 28 cts. cash and 30 in exchange for merchandise.

Indianapolis, July 18. WALTER S. POUDER.

PHILADELPHIA.—This has been unquestionably the greatest honey season we have had in the East for a quarter of a century. The first lot, of 3000 lbs., arrived in Philadelphia on the river boat yesterday, and was offered at 10½ for the amber and 12½ for white, no other sales being made. The market is not as yet established; but we are looking for low prices. Beeswax is firm at 28. WM. A. SELSER, Philadelphia, Pa.

July 24.

KANSAS CITY.—The honey market has been somewhat slow on account of the abundance of cheap fruit. Fancy white comb honey in 24-section cases is selling for $3.35. Now and then a few cases go for $3.50; but $3.35 is the ruling price. Amber and other off grades are selling as low as $2.75. We do not look for much improvement in the honey market until after the first of September. White extracted is selling at 7½.

July 23. C. C. CLEMONS & Co.

DENVER.—We are entirely closed out of comb honey, and ready to receive consignments of new-crop comb, the first arrivals of which should move quickly at good prices if fancy stock. Extracted honey is in fair demand. We quote white extracted, 8 to 9; light amber and strained, 6¾ to 7½. We pay 25 for clean yellow wax delivered here.

THE COLORADO HONEY-PRODUCERS' ASS'N,

Denver, June 23. F. Rauchfuss, Manager.

BOSTON.—Fancy white comb honey, 17; No. 1 white comb, 16; California white sage, extracted, 9; California light amber, 8; Southern honey in barrels, slow sale, 5 to 6.

July 1. BLAKE-LEE CO., Boston, Mass.

LIVERPOOL.—Honey is steady. Market prices are fully maintained. Chilean extracted, 4 to 6; Peruvian, 3½ to 5½; California, 7 to 9; Jamaican, 4 to 5; Haiti, 5½ to 6. Beeswax is quoted, African, 29; American, 30 to 33; West Indian, 29 to 32; Chilean, 30 to 36; Peru, 33 to 34; Jamaican, 33 to 34.

July 18. TAYLOR & CO., 7 Tithebarn St.

**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.,* **Minneapolis, Minn.**

# Our Wants are Unlimited.

Mail us a sample of your

# EXTRACTED HONEY

either amber or fancy; and name your lowest cash price per pound delivered here. We buy every time the price justifies, no matter if it is one barrel or a car load, and remit the same day shipment comes to hand.

**The Fred W. Muth Co.**
THE BUSY BEE-MEN
**51 Walnut St. Cincinnati, O.**

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On a Line

to all points in the South and Middle West.

Send for our free illustrated catalog of

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We sell at factory prices.
Send us a trial order.

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**Blanke & Hauk Supply Co.**
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Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK**, and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**
**Dallas, : : . Texas**

# Italian Queens

**GOLDEN AND CLOVER STOCK.**

Choice queens, 75 cts. each; six for $4.00, or $7.50 a dozen.

**GEO. W. BARNES, Box 340, Norwalk, O.**

# DOOLITTLE & CLARK

Are sending out fine Italian queens at the following prices: Untested, $1; 3, $2.50; 12, $9.00. Tested, $2.00; 3, $5.00; 12, $18.00. Breeders, $2.50, $5.00, and $10.00. Send for circular.

**BORODINO, ONONDAGA CO., N. Y.**

## DANIEL WURTH'S QUEENS.

**Golden Five-banded and Three-banded.**

Finest that can be had at any price; large and prolific. Have had 35 years' experience. Having moved from Pitkin, my address is Fayetteville, Ark., R. F. D. box 5, A.

**Untested, $ .75 each; 6, $4.35**
**Tested, 1.00 each; 6, 5.50**

# Carniolan Queens

from imported mother, mated to drones from imported mother in yard remote from other bees, $1.00 each; $9.00 per doz. Mismated queens, Carniolan and Banat, 50 cts. each; $5.00 per doz.

**E. H. HAFFORD, : Fennville, Mich.**

# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT CO., Medina, Ohio.
J. T. CALVERT, Business Manager.

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**Prompt Shipment** **Low Freight**

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We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

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We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
**241 BULL ST. SAVANNAH, GA.**

# NEW ENGLAND BEE-KEEPERS

WE ARE HEADQUARTERS FOR

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## Bees and Queens.

**W. W. CARY & SON**
**LYONSVILLE, MASS.**

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both
**Comb and Extracted**
of all kinds.

No shipment too large for us. Send samples, and state best price delivered here. We remit as soon as goods are weighed in. Best of references furnished. Don't sell until you quote us price; it will be to your interest. Large stock of Root's bee goods carried constantly on hand. Greatest shipping center in the United States—both rail and boat. Try us.

**Griggs Bros. & Nichols Co.**
523 Monroe St. .. Toledo, Ohio

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin. You can save freight by ordering from this branch. Complete line bee-keepers' supplies always in stock. Secure a catalog at once. BEES and QUEENS.—Your orders will be attended to.

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1024 Mississippi St., St. Paul, Minn.

**PITTSBURGH Headquarters** for **ROOT'S BEE-SUPPLIES** at **factory prices.**

Also Poultry and Dairy Supplies, Seeds, and Pet Stock.
Get our catalog and prices.
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**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **...Boston**

**H. H. JEPSON,**
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**(Transparent) FOR COMB HONEY**
NOW BEING USED BY LARGE PRODUCERS

Makes section look more attractive, and increases selling price. Any one can apply it and get 2 to 4 cents more per pound, and it costs you only a fraction of a cent per section.

**Price $3.25 per thousand sheets, printed with name and address.**

Samples free. Special prices on quantities.
**H. A. SACKETT, 147 W. 26th St., N. Y. City**

# WESTERN Bee-keepers

.. will ..
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**by ordering ROOT'S GOODS from Des Moines, Iowa.**

A Complete NEW STOCK on hand. Our stock includes a full line of Danzenbaker hives and all other up-to-date goods.

Remember we sell at Root's factory prices, and offer liberal discounts now.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

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565-7.W.7th St., Des Moines, Ia.

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OHIO STATE FAIR PREMIUM LIST.

The following is a list of premiums to be awarded at the Ohio State Fair, Columbus, August 31 and Sept. 1, 2, 3, 4, on bees and honey to be exhibited in the farm-product department. Bees are to be shown in closed hives. Displays must not include honey entered for any other premiums.

| | | |
|---|---|---|
| Display of comb honey — appearance, quality, and condition for market to govern | $15.00 | $8.00 |
| Case of 24 sections white-clover comb honey—general appearance, filling, and capping to govern | 3.00 | 2.00 |
| Case of 24 sections of basswood comb honey | 3.00 | 2.00 |
| Case of 24 sections of comb honey from fall flowers | 3.00 | 2.00 |
| Display of extracted honey—quantity, quality, condition for market, and arrangement to govern | 15.00 | 8.00 |
| Six jars of extracted honey, 3-lb. (quart) size | 3.00 | 2.00 |
| Six jars of extracted honey, 1½ lbs. (pt.) " | 2.00 | 1.00 |
| Display of candied honey, not less than 25 lbs. | 5.00 | 3.00 |
| Display of beeswax | 2.00 | 1.00 |
| Nucleus of Italian bees in observatory hive | 3.00 | 2.00 |
| Nucleus of Carniolan bees as above | 3.00 | 2.00 |
| Display of comb foundation | 2.00 | 1.00 |
| Largest and finest display of honey, comb and extracted — quantity, quality, and condition for market to govern | 20.00 | 10.00 |

T. L. Calvert, Sec., Columbus, O.

NEWCASTLE, DEL., COUNTY FAIR, SEPT. 1—4.

Dr. Joel S. Gilfillan, Supt., Newark; E. M. Miller, assistant, Wilmington, Del. Neither of the above will compete.

Best display of comb honey, not less than 30 lbs., $5.00; second prize, $2.00; ditto extracted honey, $5.00; second, $2.00. Best dozen sections of comb honey, $1.00; second, 50 cents. Best sample of extracted honey, not less than 10 lbs., $1.00; second, 50 cents. Best display of beeswax, 50 cents; second, 25 cents.

Bees.—Best colony shown in observation hive, Italian, $3.00; second, $1.50; Caucasian, Carniolan, black, and hybrids, the same.

Best display of bees in observatory hives, not less than three, $10.00; second, $3.00.

Best display of bee-supplies, $2.00; second, $1.00.


4% A request on a postal will bring you our free booklet

Established 1892

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We will pay you 4 per cent—compounded twice a year on your savings account whether large or small—secured by assets of over 700,000. Send to-day for particulars explaining how you can open an account safely and conveniently by mail.

Under ordinary circumstances all or any part of your deposits may be withdrawn at will.

*Send for the booklet to-day.*

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MEDINA, OHIO

# Sections and Foundation for Immediate Shipment

and all

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Lansing, Mich.
*Dear Sirs:*—Enclosed please find $1.15 for GLEANINGS one year, and your bee-veil with silk tulle front.

Name

Address

GLEANINGS one year, new or renewal, for $1.15, including a bee-veil with silk tulle front, postpaid. Send for our catalog.

**M. H. HUNT & SON**
**LANSING, :: MICH.**

# Extracted Honey Wanted

We are always in the market.

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NATIONAL BISCUIT COMPANY
Purchasing Department.
**Washington Blvd. & Morgan St.**
**CHICAGO, ILL.**

**WE WILL BUY AND SELL**

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**of the different grades and kinds.**

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**NEW YORK.**

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CHOICE

# QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3 00.
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

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STATE FAIR OF OKLAHOMA, OCT. 1 TO 10, AT OKLAHOMA CITY, APIARY DEPARTMENT PREMIUM LIST.

F. W. Van DeMark, Superintendent.

Open to the world.

1. Entries close in this department September 30, 1908, at 6 o'clock p. m., and all articles entered for exhibition must be in place at that time.

2. No premiums will be awarded in this department except as definitely stated in this premium list.

3. The judge will be governed by the code of rules adopted by the Illinois Bee-keepers' Association.

4. Two hundred and fifty pounds only will receive full score for comb and extracted honey, and 50 lbs. in candied honey; 50 lbs. beeswax will receive full score for quantity in display of beeswax.

5. Only one entry will be allowed each exhibitor for any one premium.

6. No article can be removed until the close of the fair, except upon written permission of the president.

7. The superintendent will be on the grounds for a week previous to the fair, prepared to wait upon exhibitors as they arrive.

8. The superintendent must check the entries shown in the entry-books in each ring, with the exhibits present, and so mark the entry-books that they will show what exhibits were passed on by the judges.

| | 1st | 2d | 3d |
|---|---|---|---|
| Display of comb honey | $15 | $10 | $5 |
| Collection of labeled cases containing 12 or more lbs. of white honey from different flowers. Five or more cases | 10 | 6 | 4 |
| Case of sweet-clover honey, 12 or more lbs. | 4 | 3 | 2 |
| Case of cotton honey, 12 or more lbs. | 4 | 3 | 2 |
| Case of sumac honey, 12 or more lbs. | 4 | 3 | 2 |
| Case of dark amber honey, 12 or more lbs. | 4 | 3 | 2 |
| Display of extracted honey | 15 | 10 | 5 |
| Display of samples of white extracted honey | 4 | 3 | 2 |
| Display of samples of amber extracted honey | 4 | 3 | 2 |
| Sealed comb for extracting | 3 | 2 | 1 |
| Display of candied honey | 10 | 8 | 5 |
| Display of beeswax | 10 | 6 | 4 |
| Display of designs in beeswax | 10 | 6 | 4 |
| Display of designs in honey | 10 | 6 | 4 |
| One frame of golden Italian bees in observatory hive | 4 | 3 | 2 |
| One frame of dark Italian bees in observatory hive | 4 | 3 | 2 |
| One frame of native bees in observatory hive | 4 | 3 | 2 |

MICHIGAN STATE FAIR AT DETROIT, SEPT. 3 TO 11. PREMIUM LIST FOR APIARIAN DEPARTMENT.

F. B. Ransford, Caro, Superintendent.

All strains of bees to be plainly labeled and placed in observatory hives, appearance of hives to be considered.

The exhibition of all kinds of implements and bee-keepers' supplies is invited, for which space will be provided, as far as possible, at ten cents per square foot for space used.

Diploma given for best exhibit.

| | 1st | 2d | 3d |
|---|---|---|---|
| Italian bees and queens in single-comb observatory hives | $8.00 | $5.00 | $3.00 |
| Carniolan bees and queen in single-comb observatory hives | 8.00 | 5.00 | 3.00 |
| Caucasian bees and queen in single-comb observatory hives | 8.00 | 5.00 | 3.00 |
| Largest and best display of bees of various races in observatory hives | 10.00 | 6.00 | 4.00 |
| Largest display of queens of various races in mailing-cages | 5.00 | 3.00 | 2.00 |
| Best case white comb honey | 3.00 | 2.00 | 1.00 |
| Best case light-amber comb honey | 2.50 | 1.50 | 1.00 |
| Best and largest display comb honey | 10.00 | 6.00 | 4.00 |
| Best display of special designs | 3.00 | 2.00 | 1.00 |
| Best dozen jars of white extracted honey | 2.50 | 1.50 | 1.00 |
| Best dozen jars of light-amber extracted honey | 2.00 | 1.00 | .50 |
| Best and largest display of extracted honey | 8.00 | 5.00 | 3.00 |
| Best display of extracted honey in granulated form | 3.00 | 2.00 | 1.00 |
| Best 10 lbs. yellow beeswax | 2.00 | 1.00 | .50 |
| Best and largest display of beeswax | 5.00 | 3.00 | 2.00 |
| Best display special designs in beeswax | 3.00 | 2.00 | 1.00 |
| Best display of honey-producing plants, mounted | 3.00 | 2.00 | 1.00 |
| Best display of fruits preserved in honey | 3.00 | 2.00 | 1.00 |
| Most instructive display of apiarian products and of the various uses made of honey and beeswax | 15.00 | 10.00 | 5.00 |

# RASPBERRY HONEY

My brother and myself have five apiaries in the wild-red-raspberry region of Northern Michigan, where we are harvesting a crop of unusually fine quality. Not a pound is extracted until it has been thoroughly ripened and sealed over, and it is thick, rich, and delicious. We are putting it up in bright *new* 60-lb. tin cans, two in a case (the ends of the cases are bound with hoop iron to protect them in shipment), and offering it at ten cents a pound—$12 00 for a case of two cans. To some this may seem a trifle high in price; but it must be remembered that it costs more to produce such honey as this, and it is worth more; besides, to a certain extent it is a novelty. It is *raspberry* honey — a honey with a flavor all its own — a flavor that smacks of the wild red raspberry of the woods. It is the honey that won the gold medal at the Jamestown Exposition against all other honeys from all over the United States. The dealer who builds up a trade for this honey can hold it against all odds.

If not acquainted with this honey, send me ten cents and I'll mail you a generous sample, and the ten cents may apply on the first order that you send.

**W. Z. HUTCHINSON, Flint, Mich.**

# LISTEN!

## DO YOU HEAR THOSE BEES WORKING?

Soon they will want room or will swarm.

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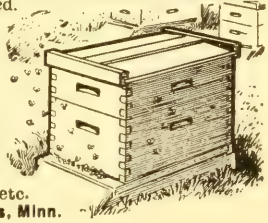
**JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTG. CO., MISSOURI.**

# BEE-KEEPING will be a profitable industry this season.

Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

## Get Ready Now for More Honey



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**E. GRAINGER & COMPANY**
**Deer Park, Toronto, Ontario, Canada**
Canadian agents for The A. I. Root Co., Medina, O., U.S.A.

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**des pays de langue Francaise**
**Nous vous informons que.**

**L'Apiculture Nouvelle**
Revue mensuelle illustree,

est tiree de:

**Gleanings in Bee Culture**

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## Popular Works on Bee Culture.

The list of books below are for the most part by writers of well-known literary ability, and are very interesting indeed, and are greatly valued by bee-keepers and others for their literary merit, and the popular style in which bee-keeping is depicted and we are very glad to have the opportunity to offer them to bee-keepers and others. The description of each work will give a fair idea of the same, but a pamphlet giving an extended view of these and the practical books on bee culture listed in the preceding columns will be sent on application.

THE HONEY-MAKERS. By Miss Margaret W. Morley. This is the story of the life of the bee, told in very interesting style—how it lives, gathers honey, and all about it. While clothing the general subject with an air of poetry, it seems to be entirely within the limits of known facts while attempting to deal with them. We believe it will give all thoughtful bee-keepers a greater liking for their business to read it. Probably it has more to do with the curious traditions connected with bees than any other book of the kind. Price $1.50 postpaid; by freight or express, 10 cents less.

THE LIFE OF THE BEE. By Maeterlinck. This is a masterpiece of fine writing by a modern Shakespeare. The words fly from the pen of this writer like sparks from a blacksmith's anvil, the result being a glorification of the honey-bee. Maeterlinck is considered by many to be the finest writer now living, and any thing from him is sure to be worth reading. He is, to a certain extent, familiar with bee-keeping, but the truth about bees does not interest him so much as the romance of the queen and the drone and the swarming instinct. The book itself is well bound and beautifully printed. Cloth bound, 42 pages. Ed. 1903, price $1.40 postpaid; by freight or express, 10 cts. less.

THE BEE PEOPLE. A book on bees, especially for children, from the pen of Margaret W. Morley. Including its elegant illustrations, it is, in some respects, the prettiest bee-book in existence. It has 177 pages, very coarse print, the reading being ingeniously interwoven with the illustrations showing the parts of the bee. The story of bee-life is told in a fascinating manner, and is well calculated to get the casual reader, as well as children, interested in this useful insect. The cuts go just enough into detail to explain fully the lesson taught, without confusing the mind with other things. We think the book well worthy a place in every bee-keeper's home. Fittingly designed cover. Price $1.50 postpaid; by freight or express, deduct 10 cents.

THE SWARM. By Maurice Maeterlinck, author of the Life of the Bee. This is a book of 113 pages, prettily bound in cloth. Price $1.20 postpaid; by freight or express, 10 cents less.

THE BEE-MASTER OF WARRILOW. Tickner Edwards. Cloth bound, 64 pages; 57 cents postpaid; by freight or express, 7 cents less.

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There are a good many bee-keepers who will admit they ought to know more about the anatomy of the bee; but owing to the difficulties surrounding the subject they have thus far been unable to acquaint themselves in the least with the marvelous structure of the honey-bee. For such persons there has been constructed a *pasteboard* bee, showing all the internals of a queen and also a drone in a manner that leaves little to be desired. With the aid of the key, any intelligent person may soon become well acquainted with the anatomy of the bee and the proper name of each organ. First there is a life-like representation of the queen and drone (separately). By lifting the outer covering the breathing apparatus and digestive system are unfolded; lifting again there will be found the reproductive system and poison-glands; and by again lifting, the nervous system is clearly outlined. Every thing is as clear as daylight, as each part and organ is numbered, and the key which we send gives the correct scientific name of the same. Our models of the queen measure 6½ inches, while those of the drone are 5½ inches. We can furnish the two with a key for 75 c. postpaid; or either one at 50 c. postpaid

**The A. I. ROOT COMPANY, - MEDINA, OHIO, U. S. A.**

**"If goods are wanted quick, send to Pouder."**
**Established 1889**

# THE BANKER AND THE BEE

*By the Bee Crank.*

"For our troubles," the bankers exclaim,
"It's Teddy who must bear the blame."
"But that's nothing to me,"
Says the industrious bee;
"I'm hustling this year just the same."

The bee-men, the fruit-men, and the farmers are not doing much talking just now, because they are too busy. When folks are busy they can't afford to have to worry about delays in getting the materials to work with. My business is so systematized that orders for all standard goods are filled just as promptly during the rush season as during the dull season, and you can avoid complications by placing your rush orders here. Just at present I am shipping immense quantities of shipping-cases, honey-jars, sections, and smokers. I have the full line of Root quality goods, and they go at factory prices.

Hoosier-Italian queens on return train for 75 cents, untested. Select untested, one dollar. Reared during the warm honey-flow, and nothing could be nicer.

I can use more beeswax, and am paying 28 cents spot cash or 30 in trade, delivered here.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

H. H. ROOT, Assistant Editor
A. I. ROOT, Editor Home Department

E. R. ROOT, Editor

A. L. BOYDEN, Advertising Manager
J. T. CALVERT, Business Manager

VOL. XXXVI AUGUST 1, 1908 NO. 15

## STRAY STRAWS

DR. C. C. MILLER

DID YOU NOTICE in the platforms of the two great political parties any thing said about the greatest public question of the day, the saloon question?

HERMAPHRODITE, that's what the queen-bee is —*Bee-keepers' Review*, 205. Doesn't that go pretty well with the "sting trowel" and the "umbilical cord"?

I'VE ALWAYS supposed it was cheaper to buy new plain separators than to clean old ones. I'm not so sure of it after reading E. F. Atwater's way of cleaning them, p. 878.

LIKELY you are right, Mr. Editor, p. 868, that my tags were oil-soaked, and not paraffine-boiled. Allee samee, I hope this country will some day catch up with Germany on the tag question.

BASSWOOD flow (very little basswood here) lasted 11 days. [It did not amount to much here. In our locality a good year for the clovers means a poor one for basswoods. But this is not invariably so.—ED.]

BRO. DOOLITTLE gives sound advice, p. 871, about mastering "awfully cross bees," only for one thing; he doesn't tell us how he'd do if he wanted to find a queen; for after pounding them into subjection his chances would be small for finding a queen on that trip.

LOUIS SCHOLL, do we understand from what you say, p. 872, that you have tried bottom-bars with only ¼ inch between them, and that the space was filled with glue? I've supposed this is a gluey locality, and I've never found that space filled with glue—never once.

REFERRING to the question whether abundance of stores in sight has a stimulating effect on bees, Editor Hill says, *American Bee-keeper*, 190, "Mr. Hand contends that the influence would be the same on the bees as that of bins full of wheat on a flock of hens. It should be noted, however, that it would probably make some difference in results as to whether the bees or the hens had access to the surplus-food supply. Food locked up in the granary would hardly influence the egg-laying of the flock, nor would tons of honey stacked away in the loft of the house have any stimulating effect on the bees in the hive."

HEATING honey for extracting late in the season is a fine thing; but Allen Latham gives a needed caution, *Review*, 214. Late in November he had the honey stacked in an old hen-house, paroid-covered; ran the lamp slowly Friday, faster at night, and still faster Saturday morning. The sun came out warm, and he says that, on opening the door at noon, he found all the top supers had melted down, and the honey was drizzling all over all the supers in the place. Some sixty combs melted down, and 100 to 200 pounds of honey was lost. Even then the lower tiers had not become nearly warm enough to extract.

J. E. HAND, p. 881, seems to think that natural supersedure and deterioration go hand in hand. Did you ever stop to think, friend Hand, that, in the case of bees not under man's control, unless the whole colony dies, *every queen before her death provides for a successor by natural supersedure?* Do you think an all-wise Providence would thus deliberately plan for deterioration? And if that deterioration has been going on ever since creation, ought not wild bees to be about deteriorated out of existence? [We find supersedure cells generally quite equal to those reared during the swarming impulse. But cells reared under ordinary conditions are much inferior to either.—ED.]

MORE THAN one egg in a queen-cell is a very reliable sign of laying workers. But lately I found five eggs in a queen-cell in a nucleus with an old laying queen. [If you were raising queens in baby nuclei, doctor, you would find that, when the queen had laid every available cell full of eggs, she will begin to stick in two or three and even five eggs to the cell. This is a very common observation in our queen-rearing work; and, of course, under those conditions we do not expect any laying workers. But we may safely say that, when there is plenty of egg-laying room, cells empty, and other cells containing a plurality of eggs, there is probably a laying worker or drone-layer in the hive.—ED.]

H. C. DANIELS, you ask us to take a backward look, p. 894, to see if we can not see bad results from having bees in the shade. When I look back I see the very best results from bees under good apple-tree shade. [Here too; and, what is more, we believe that bees are a little more quiet in the shade than out in the hot sun; or perhaps we should put it this way: When hives are obscured by shrubbery, trees, and the like, cross bees are not quite as likely to follow one as where there is clear unobstructed vision. For example, before our grapevines leave out, robbers and cross bees will follow one much more persistently than afterward. Of course, it might be said that, when the vines are in full leaf, then is the time when the bees are approaching the honey-flow or are in it. But there is a condition after the honey-flow in August, in our locality, that is far worse for robbers than in that season of the year prior to the full leaf of the grapevines. But as has been pointed out by others, we believe that too dense

a shade of a big tree is detrimental. While it is very comfortable for the apiarist, the bees do not spring and summer quite so well.—Ed.]

You ask, Mr. Editor, p. 867, whether my yellow bees (Italians) swarm more than my "hybrids and blacks," and say, "If all of them swarm, then we should attribute this swarming to the peculiarity of the season rather than to the yellow blood." I have no blacks. I have made special effort in the past two years to get in Italian blood, and a good number of my colonies are full-blood or half-blood Italians. The rest are of my old stock of hybrids. I have an impression that the season is the worst for swarming I ever experienced. But all have not swarmed. There are six colonies that have never had an egg in a queen-cell; three had an egg in a queen-cell just once, and when the egg was destroyed the offense was not repeated; four had a cell or two occupied on two different occasions, but have gone on since without starting cells again. Except these thirteen, every colony has swarmed, or would have swarmed, so far as I can judge, if special treatment had not been given. These thirteen were all of the old hybrid stock. Yes, emphatically my yellow bees swarm more than my old hybrid stock. But that is no proof that Italians swarm more than hybrids. Please remember that for years I have been breeding from bees that showed least inclination to swarm, paying no regard to color (more fool I), and they approximate non-swarming, not because they are hybrids, but because of special selection; and if I had held to pure Italians all the while I might just as well have had a strain of pure Italians little given to swarming. The one important point in the case is that there is some proof—quite a little I think—that by continued selection one can approximate a non-swarming strain. [As you say, the whole point is that you have attempted to breed out the swarming tendency, and that the same effort applied to pure Italians would probably have been productive of the same results.—Ed.]

# EDITORIAL

By E. R. Root.

### A GOOD SUGGESTION.

The following note from Secretary Hutchinson will explain itself:

E. E. Pressler, of Williamsport, Pa., stamps upon his stationery and price lists the following: "Will be at Detroit Oct. 12." Why couldn't all of us who send out much mail get a rubber stamp and do the same? It would advertise the National convention in a most telling manner.

### CANE OR BEET SUGAR IN KANSAS.

We notice by the *American Grocer* that the Kansas Board of Health, which has the enforcement of the pure-food laws of that State, says that grocers who sell beet sugar for cane will be subject to prosecution. We wish this ruling might be general all through the United States, as it is impossible now to know what one is buying—cane or beet sugar. We always try to get cane exclusively for feeding; but the large sugar-refiners will make no statement as to what they are sending, other than that it is granulated sugar.

### AN OLD TIMER.

We had a call last week from F. H. Cyrenius, of Oswego, N. Y. While our friend is not one of the "old boys," he is an old-timer. He began the culture of bees when he was only about twelve years old, and has been an ardent student of them ever since. He is considerable of an inventor as well as a practical man in the field. He has promised to give us some items for publication.

### IS BEESWAX DIGESTIBLE?

There has been some little discussion among our exchanges as to whether beeswax is digestible. The fact that most hydro-carbons, including fats, oils, and the like, are digestible, lends color to the theory that beeswax, also a hydro-carbon, may be partly so; at least, Mr. D. F. Robinson, in the *Canadian Bee Journal*, last issue, presents some pretty good arguments, supported by the authority of experts on food, in favor of the proposition.

### A BEE-VEIL WITH HOLES IN IT.

By the way, did you ever notice that a bee-veil with a few holes in it is almost as good a protection from stings as one with no holes? Even if a bee should happen to get through an opening, it finds itself a prisoner and is then more concerned about getting out than carrying out its designs of vengeance. When we talk about holes we mean small ones, say a quarter or half an inch in diameter. Larger ones, of course, will let in a direct onslaught of bees, and then they strike their javelins without stopping to argue the question.

### GOVERNMENT OFFICALS STUDYING FOUL BROOD IN CALIFORNIA.

Dr. E. F. Phillips and Dr. White, the Bacteriologist, are just now on the Pacific coast doing some field-work experiments on bee diseases. They are gathering data, which, no doubt will be presented to the public in the form of a bulletin. In our last issue we spoke of what the Bureau is doing in Massachusetts and the bordering States. It is a pleasure to know that our apicultural investigators are giving close and careful attention to this subject of bee diseases.

### THE IMPROVEMENTS IN OUR EXCHANGES.

It is a real pleasure to see the gradual and steady improvement in our apicultural exchanges. Our contemporary to the north of us, the *Canadian Bee Journal*, has shown new life since it went into the hands of the new managers. Away to the south of us in Florida the *American Bee-keeper* is giving us once a month a great deal of practical and valuable matter. The *American Bee Journal*, still the "Old Reliable," is furnishing a large amount of interesting as well as valuable matter, with many illustrations; and last, but not least, the *Bee-keepers' Review* is showing the enthusiasm of an editor who is *fresh from the field*; for Mr. Hutchinson is a honey-producer. We wish all of our exchanges success.

### THE FOLLY OF MARKETING COMB HONEY TOO LATE.

Let us not again repeat the folly of last year, when thousands and thousands of pounds of comb honey were dumped on the market after the selling season. Much of that is still in the

market candied and has a slow sale. This is most unfortunate just now.

Along in last October and November there was a crying demand for honey; but it could not be had for love or money. After the demand was well nigh over, and hard times were beginning to come on, along came this honey. If it had all been cleaned up it would be much better for the market.

### A BEE-ESCAPE BOARD IN TWO PIECES TO SAVE LIFTING OF HEAVY SUPERS.

MR. F. G. MARBACH, foreman of our machine-shop, suggests making a honey-board in two pieces. With a hive-tool pry up one end of the supers and slip under the narrow piece. The other end of the super may now be lifted up just enough to provide proper clearance for the other piece, which is now inserted far enough to meet the first piece. His idea is to save all lifting by prying one end of the super at a time with a hive-tool. Any old honey-board may be fixed in this way by sawing off one end, the small one not being more than one inch or so wide. Some of our bee-keeping friends can try it and see how they like it.

### FEEDERS NOT WORTH PATENTING.

WE are constantly receiving designs for some new style of feeder on which the sender has applied for a patent, adding that he would like to know how much royalty we would be willing to pay. As we have said repeatedly we say again, we would not give one cent for a patent on any kind of feeder, because there are too many good unpatented feeders, and any one who gets out a patent on a feeder is wasting his good money for nothing. We believe in patents, own a number, and are paying royalties on others. Hundreds of patents have been granted on feeders; but we do not know of one that has earned its owner a cent.

### CAUCASIANS HARDY.

IN setting forth some of the desirable and undesirable traits of these bees in our last issue, page 869, we failed to mention one point in their favor; and that is, their ability to stand wear and tear. Some time ago we made up a colony of pure Italians and pure Caucasians, mixing the two races in one hive. For the first month or two there was about an equal number of both races in the colony. After that, the old yellow bees began to disappear, while the old Caucasians continued to remain in strong force. They are good for springing and wintering. Our experience has abundantly shown that; but we couldn't and wouldn't stand their excessive swarming and bee-glue.

### SENDING DISEASED BROOD THROUGH THE MAILS.

WE desire to caution our readers again when sending samples of suspected diseased brood to this office for diagnosis to wrap the specimen in paraffine paper, not in cotton batting, and put it in a stout wooden or tin box. Mark on the outside of the package the full name and address of the sender, and in the same mail be sure to send a letter giving full particulars. Specimens not having the mark and name of the sender will be burned without examination, and likewise all other specimens loosely or carelessly packed.

Another thing, do not use perfumery-boxes, spice-boxes, or, last of all, tobacco or cigar boxes, to send brood in, because the odor so scents up the brood that satisfactory diagnosis is made difficult if not impossible.

We are perfectly willing to furnish information to our subscribers, but they in turn must observe proper precautions.

### "WAX CRAFT."

THIS is the title of a new work in the hands of the printers, taking up fully its history, production, adulteration, and commercial value, by Thomas William Cowan, editor of the *British Bee Journal*, and author of the British Bee-keepers' Guide; and numerous other apicultural works.

Chapter I. is historical; chapter III. treats on wax-rendering, taking up all the various methods for accomplishing this by the aid of the sun, by artificial heat, through the medium of steam and hot water. Chapter V. has to do with the subject of refining and bleaching wax, removing impurities caused by the introduction of either mineral or vegetable waxes; commercial waxes, refining, etc. Chapter VI. deals with the adulteration of wax, the extent of it, the adulterants, with a list of the various kinds of waxes other than that made by the bees. Chapter VII. deals with the manufacture of comb foundation; chapter IX. with wax candles and tapers. Chapter XI. treats of the technical uses of wax.

No work of this kind has been published before, and we are of the opinion that it will fill a long-felt want without question. The size of the work is crown octavo. The price in paper covers is 2 shillings; in cloth, 3 shillings.

### THE CHICAGO DRAINAGE CANAL AND THE SWEET CLOVER NOW GROWING ON ITS BANKS.

ON p. 940 is an article with engravings in regard to sweet clover on the banks of this great drainage canal. This reminds me that, on my return from California in the fall of 1903, I was greatly impressed with the piece of engineering as planned and carried out for that great canal. At the close of the article referred to above, we are told that they expended $53,000,000. Well, there are places where the soil, stones, and gravel are piled up, to get it out of the way, in heaps that almost rival in size the *mountains of California.* At the time of my trip, railroads were constructed for the purpose of carrying this refuse material wherever it was wanted for filling in for railroading and other work. But I suppose it will be many years before these "hills and mountains" are entirely removed out of the way. The fact that sweet clover will take root and grow, and get sustenance from the air on such miscellaneous soils as those taken out at a great depth in the ground, is an additional proof of the great worth that it may have in making the most unpromising soil productive. This reminds me that the growth of sweet clover in the suburbs of Toledo is this year just wonderful. When the farming community all get to understand the way in which this plant does "missionary work" in restoring poor soils, we shall recognize what a wonderful gift to agriculture is this luxuriant sweet clover that has been so many times called by thoughtless people a "noxious weed." A. I. R.

PRICES ON HONEY FOR 1908; WILL THEY BE LOWER THAN LAST YEAR?

The flow of clover honey in the central-eastern States has been exceptionally heavy and of good quality; but this does not signify by any means that there has also been a great crop in other sections of the country. In some parts of New England the season has been good to poor. The same is true in parts of New York and Pennsylvania. In Ohio the flow has been remarkably good; and it has been fairly good in Michigan, Kentucky, Indiana, Illinois, and Wisconsin; in Iowa, fair to poor.

Some unfavorable reports come from Kansas and Nebraska. Missouri reports fair to good. In California the latest advices show generally a poor season except in the orange districts. Reports from Texas are a little more encouraging. Advices from Colorado are not as yet very definite as to what the season is to be.

We see no reason why the *general* market should take a slump; but the Chicago and New York markets, as well as those intervening, will probably have plenty of clover honey, and prices will necessarily be a trifle lower than last year. In Cleveland the buyers are very shy. They do not know what to offer. Along this line we quote from a private letter from one of the largest concerns in that city. As they had no knowledge that they were to be quoted we do not feel at liberty as yet to give their name.

We are not ready to make an offer on comb honey until we have further information from the section where we usually buy our honey. We are confident, however, that the price will be much lower than usual this season. The abundant fruit crop and general condition of the trade, which affects the line of luxuries most, are reasons for our thinking this, and the large crop of honey in Ohio, we are afraid, will prevent our selling much in sections where we have sold it before.

We wish to offer the suggestion that the large producers seek out markets where there have not been good crops, and *seek them early*. Be careful, also, to avoid a center that is being glutted. Do not, under any circumstances, send a large shipment without first making careful inquiries; and avoid sending to new houses.

It possibly may be advisable in some cases, with a well-known reliable houee, to send on commission; but send only a small shipment at first; and it that goes well, try another one immediately.

Gleanings is always willing to co-operate to the end that bee-keepers may get the best prices obtainable; but it would be the height of folly for us to attempt to "bull" the market when the conditions would not support it; for any bee-keeper who waits for better prices will be likely to be disappointed in that he may have to accept less than his first offers. Along in September the market will become more stable, but not higher probably. The number of offerings at present is making the buyers somewhat cautious.

*Later.*—After writing the foregoing, the following from one of the best and most reliable commission houses in Chicago has been received. As this has a direct bearing on prices we are glad to give it right here:

*Mr. Root:*—The honey yield of this season is beginning to come on the market. At this writing the demand for it is limited, but we usually have a very good demand by the beginning of August. What sales are being made now are on a basis of 15 cents for fancy white comb. For lots of any size this would be shaded, say a cent or so per pound, although a determination not to accept lower prices is our purpose at this time, as we believe the fine quality of the honey will create a demand for it that will pay this price. The consignments received up to this writing are most desirable, in that the sections are well filled, and the honey securely fastened to the same, giving promise that much of the honey will grade A No. 1 to fancy.

August and September are favorable months for transporting honey, as the wax is strong and there is seldom any of it broken in transit. Indeed, we think that, at this time of the year, honey shipped without being crated in carriers of six or eight cases comes quite as safely as that in the carriers.

The demand for extracted for family purposes is quite limited, and will be for a little while to come; meantime, clover is being sold from 7 to 8 cents per pound; amber, 5½ to 6½. The variation in price is caused by quality, flavor, and style of package. Beeswax sells freely at 30 cents per pound when clean and of fair color. R. A. Burnett & Co.

Chicago, Ill., July 22.

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THE PICTURE ON THE COVER FOR THIS ISSUE.

Something like twelve or fifteen years ago I purchased a rhododendron of the Storrs & Harrison Co., of Painesville, Ohio. I think the plant cost $1.50. It was about a foot and a half tall, and it was in full bloom when I received it. The rhododendron, or flowering evergreen, as it has been sometimes called, is a plant that can be shipped safely when in bloom, without injury. Yes, it is said that you can take a plant out of the garden and set it on the dinner-table, and plant it back in the garden again when in full bloom, without any setback. Perhaps this might be done with a small plant; but the one on the cover page is now taller than my head, as you will notice, and from five to six feet across. It has a beautiful round head of bright glossy evergreen leaves, and has stood safely the frosts of more than a dozen winters, and has always given us more or less bloom in the month of June. Each bunch of blossoms is nearly the size of my cap, as you will notice; and there were perhaps over a hundred trusses of bloom like the ones you see. The color is a beautiful pink; and inside of each flower there are pencilings as if a skillful artist had dipped his brush in some golden paint and dextrously touched the blossom here and there. I explained to the grandchildren that these pictures inside of the beautiful flowers are done by God's fingers. The glossy evergreen leaves roll up in the winter whenever the temperature is much below freezing. When the sun comes out they will unroll in a very few minutes. But when a freezing blast starts up suddenly they will curl up in about as short a time. I think this plant stands the weather best on the north side of the house. It then gets shade when the weather is very warm, and the sun is not so likely to start it early in the spring. I do not think I ever invested money in any flowering shrub that gave me more satisfaction than this one.

On either side of me you can get a glimpse of some blood-red Japanese maples. They too have passed through many winters without any protection; and their brilliant foliage, especially in the spring, when the new leaves are out, is as handsome as a beautiful flower; and it is a flower that is *always* in bloom. Of course the leaves drop off in winter, unlike the rhododendron, which always has foliage.

When I asked Ernest to give the readers of Gleanings a picture of that beautiful plant in full bloom I did not contemplate putting myself before you so prominently; but he said I needed to stand up among the flowers in order to give you a fair idea of the size of the trusses of bloom.

A. I. R.

# GLEANINGS FROM OUR EXCHANGES

By W. K. Morrison

According to the best advices obtainable, the sugar crop of the world is short, due to the shrinkage of the Cuban output by 500,000 tons. Corn is also high, so that glucose production must be curtailed until the price of corn goes down. The honey crops of Texas and California are considerably short of an average.

The Texas Agricultural Experiment Station has just issued an excellent bulletin on the honey-plants of the State. It is largely the work of Louis Scholl, assisted by his brother, E. E. Scholl. Professors Mally, Newell, Sanderson, and Conradi also contributed. To the Texan bee-keepers it will prove valuable, as they can obtain the correct names of honey-plants by consulting it. To students of honey-bearing plants it must prove invaluable.

### MORE LAND FOR SETTLERS.

Secretary Garfield has ordered opened for settlement 18,000 acres of land embraced in the Sun River irrigation project in Montana. This forms what is known as the Fort Shaw unit, which was withdrawn from entry while the canals were building. The terms are somewhat the same as for other irrigation projects built by the United States government. Practically Uncle Sam will give away 205 farms of first-class land. The money paid is simply for the construction of the waterworks. If you desire more information, apply to the Statistician, United States Reclamation Service, Washington, D. C.

### PARCELS POST AND GROCERS.

At the recent convention of the National Grocers' Association a strongly worded resolution was passed against parcels post in any form. As no one has proposed sending groceries by mail except on rural routes it seems as if the grocers went out of their way to take a slap at the farmers. It would be well if more resolutions of this sort were passed, for the farmers would soon be in a position to know who are their friends and who are their enemies. The special agent of the express companies in the national Senate, Mr. Platt, will soon retire (at the end of the term), and ere long we shall know just who is against this great improvement in our mail service, as Senator Carter intends to force Congress either to reject or accept parcels post.

### MAMMOTH CLOVER AS A SOIL-IMPROVER.

In Michigan there is what is what is known as the "jack-pine lands," which have proved until lately a sort of white elephant to all who essayed to work them. Experienced farmers with means tried their hand at the problem of soil improvement, always to meet with defeat. Recently it was discovered that mammoth clover would grow luxuriantly on these sandy lands, and this proved to be the key to the whole situation. Growing this clover for some time fits the soil for other crops, so that all the farmer requires to make a fair start is a supply of mammoth-clover seed. Michigan has some 2,000,000 acres of such pine lands; Wisconsin an equal amount, and Minnesota even more, so that the value of the discovery is considerable. Bee-keepers will be pleased, as mammoth clover is a honey-plant of considerable value. The United States Department of Agriculture has recently issued a bulletin covering this subject. We think it is free.

### A LESSON FOR BEE-KEEPERS.

The millers of the Northwest at their recent convention decided to spend $100,000 in an active campaign in behalf of white flour. They say they were forced to do this by the oft-repeated assertion of the breakfast-food manufacturers and others that fine bolted wheat flour, when made into bread, produces stomach troubles, whereas there is no truth in such a statement. For years Americans have had it dinned into into their ears that fine white flour is injurious, with the result that the sale of it has been seriously curtailed — at least the millers entertain that opinion. Bee-keepers can learn a valuable lesson from the millers as to the value of printers' ink. They can learn another—not to allow derogatory statements about honey to appear in the public prints. After a while people get to believe such statements to be true, and act accordingly. The net result is that the whole industry is hurt.

### A NEW KIND OF WAX.

Newspaper reports from Southwest Texas proclaim the discovery of a kind of vegetable wax which can be extracted from a native desert plant known as candalai, growing profusely on desert lands in Brewster and Terrell counties in very much the same manner as rubber is extracted from the guayula plant in the same region. A Mr. Willet, a mining engineer, claims the merit of the discovery, and has just secured a concession from the Governor of Texas allowing him to appropriate all the candalia-plants he can get for five years. He proposes to erect extraction-works at Sanderson, Texas, and interest local capitalists in his enterprise. He claims there is not less than 100,000,000 tons of this shrub in sight in Southwest Texas. This is a rather high estimate, for candalia is a small shrub, and grass or shrub of any kind is not very common in either Brewster Co. or Terrell. We shall await further developments with great interest.

### BEES IN CALIFORNIA.

Prof. Cook seems to feel rather "blue" about the prospects for successful bee-keeping in Southern California. There are good prospects ahead. Note the great Harriman project mentioned last issue; also the Yuma project now being constructed, and the Phœnix project, which will be finished next year. True, these last are not in California, but they are not far away. Date culture, alfalfa-growing, and citrus crops will be the main stays of the farmers there, very likely. If so, bee-keeping will be a safe industry, as all three are excellent nectar-bearers. Cotton-growing and cantaloupes will also favor bee-keeping should the ranchers find these crops profitable.

The United States Reclamation Service has on its slate a project for damming the Colorado River, for a great scheme costing $40,000,000 at least. These plans, when carried out, will result in great good to the bee-keeping industry in the far Southwest.

# NOTES FROM CANADA

By R. F. Holtermann.

Oh for some easy method of getting a young laying queen into a hive to replace one which is failing! I have seen many methods advocated, but I am afraid I lack the courage or faith to put some of them into practice. Others entail too much work and loss.

We have been spending day after day examining stocks for queen-cells, noting the general condition, giving room, and doing the many things necessary in modern bee-keeping. The honey-flow has been good over almost all the province. There have been remarkable yields of honey; and yet in some sections, owing to dry weather, the flow has been poor. Many ask what prices will be, and I am pleased that I am not on the committee which is to recommend a price. There should be moderation both ways. The prices should be neither too high nor too low. First-class honey will be protected by a duty to a certain extent.

### INFERIORITY OF BLACK BEES.

I never before was so thoroughly convinced of the inferiority of black bees. My Carniolans and even the Italians can keep a twelve-frame Langstroth brood-chamber well filled with brood; but the black queen generally occupies less and less room with brood; and where there is a long flow of white honey, and then a fall flow, the black colony is simply not in it at all, because of the lack of bees.

### THE NEXT NATIONAL BEE CONVENTION TO BE THE BEST YET.

Because of the energy which Secretary W. Z. Hutchinson is displaying, the good honey-flow bee-keepers are securing, and the great help which individual members of the association might give to create an interest in the meeting, the coming National convention at Detroit should in reality prove to be *the best yet.* I know of quite a number of Canadians who expect to be there.

### MOVING A CARLOAD OF BEES TO THE BASSWOODS.

We are just preparing to take a carload of bees to basswood at Long Point Island. Two years ago I took 240 colonies there at an outlay of about $200, and received practically no return; but the enterprising bee-keeper must run such risks. The result may be very different. This season a 10,000-lb. return would not be any more remarkable than a failure.

When moving we screen the hives in front and not on top, and we water the bees frequently, so that they are moved with comfort to themselves and to us.

### BEES NOT SO MUCH INCLINED TO ROB IN CLOUDY WEATHER.

We always have a number of students at our apiaries so that we have more or less of a school or college, and we discuss methods and reasons for action. We were speaking of robbing, and to a young man from Finland, Russia, who is with me for the season, I said that, other conditions being equal, bees do not start robbing as readily in cloudy weather as when the sun shines. In robbing-time I prefer a cloudy morning to a bright one; for when the sun shines brightly, robbing is more likely to occur. Another young man who has been with me for years endorsed this statement, and added that it was something which, so far as he knew, had not been mentioned in the bee-books and papers.

### THE BUILDING OF WORKER-CELLS AN INDEX OF THE PRESENCE OF THE QUEEN.

How many beginners in bee-keeping there are who do not know that, when the bees build worker comb naturally, it is a sure sign of the presence of the queen, and that it settles at once the often difficult question as to whether the queen is with the bees or not! Another way, if one is doubtful as to the presence of a virgin queen, is to give the bees a comb of young unsealed brood; and if the bees are queenless they will start cells. Many a queen is destroyed in introduction because the bees have other means of securing a queen. Avoid giving the colony young brood; and if such must be left in the hive, examine the combs, and in about 36 hours break down any cells that may have been started.

### THE ASPINWALL HIVE PUT TO A SEVERE TEST.

Some object to the Aspinwall hive because it is large and can not be readily carried about. Such men, in advancing that reason, are at least dangerously near the class that would object to a modern reaper because the old sickle can be carried about more readily. I have five Aspinwall hives in my apiary. On a certain day I gave instructions to a young man to make a special hive for some of the combs which were to be taken out of the brood-chamber and replaced by the slatted frames between the remaining combs. Owing to the end-spaces, the Aspinwall frames are not interchangeable with regular ones, and can not, therefore, be put into an ordinary hive. The young man neglected to do this, and the following week three of the five colonies had the swarming impulse. Of course, this is no reflection on the hive, as, without the slatted divisions, it was not really an Aspinwall hive. We then put in these slatted frames, or divisions, and actually broke up the swarming impulse in two out of the three. The third colony swarmed, owing to one cell being missed; but the bees returned after the cell was broken down; and this colony, too, is now free from the swarming impulse. This was a rather severe test, as the hive is supposed only to *prevent* the swarming impulse and not to cure it.

### HOW MUCH SHALL HONEY BE THINNED FOR FEEDING BACK?

The same young man from Finland is making a careful study of the A B C and X Y Z of

Bee Culture; and when we had occasion to speak recently of feeding back honey to complete sections, he stated that the A B C advised using one part of honey to four or five parts of water, and that the cappings frequently looked water-soaked. I told him he must be mistaken — that the prescription should be reversed — one part of water to four or five parts of honey, I thought. He then produced the book. Surely, the editor's pen failed to put down his thought. Such things do happen; but it should not be allowed to appear in another edition. [This statement is a mistake, of course, and we acknowledge with thanks the correction. These figures had been marked for correction, but in some way the change failed to materialize, and the matter was then overlooked. But would simply reversing the figures make the statement entirely correct? We have found that one part of water to two parts of honey makes a mixture that is of about the consistency of raw nectar, and we should be afraid that one part of water to four or five parts of honey would give too thick a mixture. We should be glad to hear from any who may have had experience in feeding back. Let us be sure that the consistency is right.—ED.]

# CONVERSATIONS WITH DOOLITTLE

MANAGEMENT OF SUPERS.

"When working for section honey, when should I put on the supers?"

"There are a number of things to be taken into consideration in deciding when to put on supers, Mr. Robinson. In working for comb honey, the more we can keep all the bees in one colony, the better. In other words, the stronger the colony the better chances we have of success."

"But do not strong colonies tend to induce swarming?"

"Yes. But we can do much toward restraining the swarming tendency."

"I should like to know about that; for as soon as my colonies became strong in numbers last year then they began to swarm."

"How much entrance did you give them?"

"The same as they have the year around—probably one-half inch deep by four inches long. Would that be enough?"

"That would be all right for winter; but for summer the entrance should be the whole width of the hive, and from one inch to 1½ inches deep, so as to give abundant ventilation beneath the brood-frames."

"But how do you get this height of entrance? My entrances are only half an inch deep."

"Is your bottom-board nailed fast to the hive?"

"No."

"Then all you have to do is to take a piece of seven-eighths board, the same length as that of the hive from front to rear, and mark off one inch at one end and nothing at the other, sawing through so you will have a wedge-shaped piece as long as your hive. Now, with two such pieces to each hive you are prepared to ventilate easily any hive by simply raising the front and slipping the points of the wedges in till the thick ends come even with the front of the hive. You now have an entrance 1½ inches deep by the width of the hive."

"Will that keep all colonies from swarming?"

"No; but it has a tendency that way. In addition to this you will need to shade the hive from the hot sun between the hours of 9 A. M. and 4 P. M.; and in this you will add another tendency toward overcoming the swarming of bees."

"But the man of whom I purchased my bees told me that they did better out in the open than they would do in the shade of trees."

"Well, I guess he was all right there; but the shade I advise will allow the sun in the morning and later in the afternoon to strike the hive. It is for the seven hours during the hottest part of the day that the shade is needed."

"How is that to be obtained? I use tin on the tops of my hives to prevent leaking, and I have noticed that this gets so hot on warm days when the sun is shining that I can not hold my hand on it."

"No wonder you were troubled with swarming, with that small entrance and the almost melting heat from the top of the hive. A shade-board should be made out of any old light lumber. The rear of this board should be about three inches from the top of the hive to allow the cool air to pass under it, and the "pitch" thus given will carry off all the water when it rains."

"How big should the board be?"

"I make mine ten inches wider than the tops of the hives, and six inches longer. This longer space comes entirely on the south side of the hive so as to shade the front and the entrance, while the other is divided equally. In this way the whole of the hive is shaded during the middle of the day."

"I see. I have gained another pointer. But we have said nothing about *when* to put on the supers."

"I know we have not, for I thought it better to touch the real trouble with you first."

"I supposed my trouble lay in not knowing just when to put the supers on. When should this be done?"

"When you have your entrances fixed and your hives shaded as we have been talking about, keep an eye on the bees and your field as regards the clover bloom. As soon as you see that the white-clover blossoms are opening, and on pleasant evenings there is quite a show of bees at the entrance of any hives, they standing there with fanning wings, you may know that the colonies where you see such bees are strong enough for a super, and that they will enter it as soon as nectar above the wants of the brood begins to come in from the clover. That is about the only way to tell from the outside of the hive. You will know a little better if you open the hive. If you see that any of the cells along the top-bars of the frames are being lengthened out with new white wax, and see honey sparkling in the cells, you should certainly have the supers on at once; for, failing here, you are apt to induce swarming on account of the honey crowding the brood, and the bees becoming crowded in their hives."

"You would use starters of foundation in every section in the super, I suppose?"

"In all but the center tier of sections in the supers. These should have baits in them."

"What do you mean by baits? Do you smear the foundation in these sections with honey?"

"No, not that. Nearly if not quite every one working for section honey has more or less sections in the fall of every year which are not filled full enough to be marketable. The bees are allowed to take the honey out of the combs in these sections, when they are placed in the center of the supers so that the bees find drawn comb in the first super put on, ready for them to store nectar in as soon as any comes in from the fields. And, beginning thus, they will at once begin work in the other sections immediately surrounding these, and thus the bees are *baited* into the sections before they would otherwise go."

"I see. But suppose I or any one else does not have such left-over sections."

"Not having any left-over baits, the next thing is to find, if possible, some pieces of white comb as large as your hand, and fit them in the sections. It will pay you to do this, even if it does make a little extra labor. Yea, more. I would have at least one section in the center of each super, or the super first put on, even if I had to use old black comb for that section, and four would be better still. And if we have the sections filled or partly filled with comb left over, 4 times 4, 16, is so much the better; and if we could have the first super on each hive filled entirely full of such sections containing combs all white and clean, left over from the year before, we could almost bid defiance to swarming if our hives were shaded during the middle of the day, and the wide-open entrances given. If the colony is strong, as soon as it commences sealing honey in these combs a second super of sections, all full of foundation, should be given; and thus early in the season, and under these conditions of keeping down swarming, this super should be put under the one the bees are already at work in, and a few days later put another super on top of both, which will almost insure no swarming of that colony."

Borodino, N. Y.

# General Correspondence

## FOUNDATION FOR SECTIONS.

### Split Sections vs. Hot-wax Methods; Perfect Filling Desirable; a Reply to Mr. Atwater.

BY J. E. HAND.

Mr. Atwater, page 151, says, "With the Hand method all sections must be rehandled," etc. He seems to lose sight of the fact that empty sections can be put into frames more rapidly than after they are filled with foundation.

Sections may be filled with foundation and put into frames at one operation by my method. The difference in the two methods is that, with my method, four sections are filled with one continuous sheet of foundation at a single operation after they are half way in the frames, and with the usual methods the sections are treated one at a time, and the operation repeated if bottom starters are used. It is easy to see which is the most expeditious method. Again, while sections with swinging sheets of foundation must be handled with care, and kept right side up, frames filled with foundation will by my method stand any amount of rough handling, and may be piled up like cord-wood.

Mr. Atwater calls for proof that my method is the most rapid. I am no longer young, and my joints are somewhat stiffened by rheumatism; but I can fill sections by my method at the rate of 500 per hour, and I can't do more than half that many by any other method that I know of.

The fact that the split-section method is much more rapid than either the hot-plate or melted-wax plan is a very small item when compared with the quality of the work as shown by the finished product, which results in a higher per cent of strictly fancy sections; and it is the fancy article that brings the highest price.

The manner of putting in foundation has much to do with the perfect filling of sections, and perfect filling makes a difference of one to two cents per pound in the selling price.

Unless the foundation fills the section perfectly, there will be pop-holes in the corners, and these greatly detract from the appearance of the finished product, and it is the appearance that makes quick sales.

I can agree with all that Mr. Atwater and Dr. Miller say regarding sections filled with foundation, and fastened on all sides with melted wax. I do not consider such a method as practical, for reasons already given by these gentlemen, and which I have proven to my entire satisfaction.

These objections do not apply to the split section, in which the foundation, though held in position in the center of the section, whether the hive is level or not, is not really fastened to the wood at all until the bees fasten it, which is after the stretch has been taken out of it.

Thus the stretch is not confined to any one section, but is equalized between the four sections, which eliminates the sagging and warping nuisance which is so vividly illustrated in Fig. 2, p. 152. It is true that sections split on three sides were patented in England, likewise sections split on one side and also the whole length; but so far as I can learn I am the first to use the continuous sheet in sections split on three sides.*

Regarding the line of wax that shows on the sides and top of split sections, I am not a prophet, and can't say what may happen in the future; but I am not going to lie awake nights for fear people will think my honey is not the genuine article, especially since I have sold tons of fancy honey in split sections, and the only complaint has been that there was not enough to supply the increased demand.

In figuring the relative cost of putting founda-

* Referring to this, if Mr. Hand will refer to Samuel Simmins' "Modern Bee-farm," edition for 1893, page 91, and later editions, he will find that the author used long sheets of foundation without cutting, which he put in three of these split sections at one operation, the same as Mr. Hand. The only difference was that Mr. S. used three sections while Mr. H. used four. This is the language that Mr. Simmins used in the above reference: "My three-side cut sections can also be used, . . . . the sheet of foundation being placed across the three sections without cutting."—Ed.]

tion in sections by the different methods under discussion, H. H. Root, page 18, Jan. 1, seems to lose sight of the fact that the accurate cutting of the foundation required to make a perfect fit, which is so essential when using the full-sheet and hot-wax plan, will cost about the same as the splitting of the sections, and I can save half the cost of putting it into the sections by reducing the time fully that much.

Regarding the appearance of the split section, it is true that the edge of the foundation shows on three sides. However, that can not well be considered as an objection, since the line is perfectly straight and true, and the section, being protected by the wide frame, is perfectly white and unsoiled; and the thin stripe around the section only adds to the appearance by breaking up the monotony of a plain surface, and gives the section a finished appearance.

The ordinary section of honey produced in a T super or section-holder, with the top soiled and discolored by propolis, actually looks cheap beside the split section with its solid block of honey without any pop-holes.

The real value of the split section, and its superiority over every other method, can be determined only by a comparison of the finished product, which results in a higher percentage of perfectly filled sections than any other method. And even if it cost twice as much to fill sections with foundation by this method, the difference in the selling price of the honey would make it up many times over.

Birmingham, Ohio.

[Some of our subscribers have had a chance to test the propositions advanced in this discussion during the past season, and we should be pleased to hear from all such. Let us have the facts.—Ed.]

## CARBON BISULPHIDE FOR FUMIGATING.

### How to Apply; Is it Safe to Use Cyanide of Potassium?

BY J. L. BYER.

Prof. Surface's article, page 571, May 1, regarding the eradication of the bee-moth by means of cyanide of potassium was read with considerable interest. While every statement made by him is true, yet I can not refrain from entering a protest against the use of such a deadly drug when we have something else just as efficacious, and practically free from any danger attendant on its use.

In common with Prof. Surface, the writer has no use for sulphur for fumigating combs, as the fumes of that article always (even when the slightest quantity is inhaled) cause me to be very sick—nausea and violent headaches being the main symptoms. The "just as good" I have in mind is, of course, the comparatively well-known drug, carbon bisulphide. The only danger accompanying the use of this article in fumigating any thing is the certainty of an explosion, if the room where the gas is circulating is entered by any one bearing a light or fire in any form. Of course, this is a circumstance easily guarded against, as combs are pretty sure to be treated in the honey-house or other out-building. Certainly no one would think of using the cyanide treatment too near the living-rooms.

Like the cyanide of potassium, the fumes of the evaporating carbon bisulphide will kill the bee-moth (or any other insect) in all stages, whether as egg, larva, pupa, or winged moth; and, in direct contrast with the cyanide of potassium, the carbon-bisulphide treatment is so simple and so free from danger that the veriest novice can use it as effectually as a veteran. All that is necessary is to have a close room (or, better, a close box), size dependent on the number of combs to be treated. While it is not absolutely necessary that the receptacles be air-tight, yet the nearer that condition the less of the drug required.

On *top* of the combs (the fumes are heavier than air; hence go downward) pour a few ounces of the drug in an open dish, and the job is done. At two of my yards the fall flow is so light that we often remove supers at the close of the clover-flow, and allow what little honey that comes in afterward to go into the large brood-nests. These super combs, as well as any empty brood-combs that are on hand, are packed close together in large boxes holding over 300 frames of Quinby dimensions in each box. These boxes are made of matched lumber with close-fitting top of the same material. When the box is full of combs a common saucer is placed on top of the combs at each end of the box, the two saucers filled with the carbon bisulphide, box closed, and the combs are good for all time so far as moths are concerned.

In the summer of 1906 one of these large boxes was filled with over 300 combs in August at the Cashel apiary. At the time we had no carbon bisulphide on hand; and when we made our next visit to the yard we found that the small grubs were already quite numerous; and wherever the combs touched together the fine webs were much in evidence.

As explained before, two saucers of the carbon bisulphide were put on top of the combs, and the box closed. Two weeks afterward the box was looked into, and every moth larva was as black as a coal, and the combs were never looked at again till the following June, when not a particle of damage was found, barring the little injury that had been done previous to the carbon-bisulphide treatment.

I have had no experience with fumigating comb honey, and hence I could not say whether the gas would discolor the cappings or not; however, from absence of any after-effects on combs I am inclined to think that no damage would be done.

#### THE COST OF THE BISULPHIDE.

Just a word as to the cost of the carbon bisulphide. There is no question but that the cost of *production* of this drug is very low; but for the first few years of our experience our local druggist taxed us five cents per ounce. A friend knowing something of the drug trade "made me wise," and since then the same druggist now charges me 25 cents a *pound*.

At my three yards I usually use about one pound, so you see the cost is not worth mentioning.

I might yet say that, if no box is handy, small quantities of comb can be made *temporarily* free from the moth if the combs are in fairly well-

made supers piled one on top of the other. On top of the upper super place some carbon bisulphide, and then cover quite closely.

With all due respect for Prof. Surface, we would repeat that, in our judgment, the use of such a deadly thing as hydrocyanic-acid gas should not be recommended when we have a substitute just as good, and practically free from any danger attendant on its use.

Mount Joy, Ontario, Can.

## HIVE-CLOTHS.

### A Practical Plan for Those Who Wish to Use Cloths Under the Hive-covers.

BY WM. MUTH-RASMUSSEN.

Occasionally I see in my bee-papers some allusion to this subject, and, according to the old adage, "Many men of many minds," some bee-keepers must have cloths under the hive-covers, while others would not use them at any price. The Dadants have used home-made mats; A. I. Root at one time recommended enameled cloth, and other materials have been tried; but the material which is probably most commonly in use, and most easily obtainable, is burlap or gunny-sacking. When I lived in Southern California, some 30 years ago, it used to be a common saying that gunny sacks and baling-rope were legal tender among the bee-men. The baling-rope was used around hives when moving them, and for tying branches of sycamore-trees on a permanent framework to shade the hives during the summer.

Being one of those who must have a cloth under the hive-cover, I was naturally always on the lookout for the best material for this purpose; but for many years I found nothing better than gunny sacking. This, however, was very unsatisfactory, as the bees would gnaw holes in it, and the cloths had to be discarded and replaced by new ones every few years. Finally I read in the printed report of the National Bee-keepers' Convention, held in Los Angeles in 1903, that Mr. J. F. McIntyre used painted hive-cloths. It was not long before I started a correspondence with him, and, through his kindness in furnishing me with the desired information, as well as by my own practical experience with them, I am now enabled to give complete directions for making such cloths, which, I feel sure, will prove a boon to all who use cloths under the hive-covers.

#### MATERIAL.

I find that white duck is the best for the cloth; 8-oz. duck may do. As I could not get this here, I used a heavier quality. Mr. McIntyre prefers 6-oz. drill as being a little smoother. I tried sheeting, but found this too limber, and too easily pulled out of shape. I procured the duck, twice as wide as required, for my cloths, and then split the whole bolt lengthwise in the middle into two equal strips.

#### SOAKING.

One of these strips was then placed in an empty washtub by laying the cloth down zigzag fashion, so that it could be gradually drawn out without disturbing the underlying folds. After weighting the cloth down with stones, the tub was filled with water and left thus over night. As the cloth will absorb a great deal of water it will not suffice merely to cover it, as then the top folds might be found high and dry the next morning. There should be plenty of water and to spare. The object of soaking the duck is to keep the oil out of the cloth, as the oil, according to Mr. McIntyre, will rot cotton fiber. The soaking will shrink the cloth, particularly in the direction of the warp, so that, in buying material for a given number of hive-cloths, one has to make allowance for the shrinkage. I found that the 11-oz. duck, which I used, shrunk half an inch to the foot lengthwise.

#### PAINTING.

The next morning the paint is prepared by mixing yellow ocher with boiled linseed oil in the proportion of equal parts by weight. After splitting the bolt, each strip of the cloth was about 20 inches wide, and it required 4 oz. of ocher and the same of oil to give each yard in length two coats. The paint should be stirred frequently while being applied, otherwise much of the ocher will settle to the bottom.

A low table is now arranged close to and with one end toward the tub by tacking a couple of foot-wide boards side by side on two trestles or saw-horses. These boards may be of any convenient length, say 8 or 10 feet. Rough boards are better than planed ones, as the wet cloth does not adhere so tenaciously to a rough surface.

When every thing is in readiness, the stones are taken out of the tub and the water poured off. If this is not done, pools of water will collect on the surface of the cloth and interfere with the painting. The cloth is now drawn out on the table until it reaches the further end, and the whole strip, as far as it covers the table, is given a coat of paint, leaving, however, about 2 inches of the end of the cloth unpainted, so that one can take hold of this to pull the cloth by without getting the fingers into the paint every time. The paint should be put on middling thick with a good wide brush, care being taken that no spot is left unpainted, as the bees will bite holes in the cloth if they can get to the fiber. When one table-length is painted, the cloth is pulled out on the grass or on smooth clean ground, and another table-length gone over in the same way, and so on until the whole strip of cloth has received a coat of paint. If the cloth adheres too much to the table while pulling it, slip a round stick, as a curtain-roller, between the cloth and the table, moving the stick toward the tub and leaving it on that end of the table, when the cloth will move along with the stick rolling under it without any difficulty. The painting should be done on a warm, bright, and calm day, so that the paint may dry quickly and the cloth not be flapped round by the wind. As the corners of the cloth have a tendency to curl up while drying, I put a stone on each corner. In two days, according to the weather, the paint will be dry, and a second coat is given—this time, however, without wetting the cloth. When dry again, the cloth may be drawn up on the table or laid on a smooth floor, and cross-cut into pieces of the right size for hive-cloths. If these are not put to immediate use they may be piled up and covered with a hive-cover with a weight on top. This will keep them flat and in good shape until wanted.

USE.

The cloth should be put on the hive with the painted side down. When it is removed during manipulation of the frames, do not lay the painted side on the ground, as it may be more or less gummy with bee-glue, and pick up sand and trash. If the sun is likely to shine on the cloth, while off the hive, the better way is to fold it with the painted side in. The painted surface gets very hot when the sun is shining on it. If the painted surface becomes too much covered with bee-glue or burr-combs it can be scraped off, while quite warm, after exposing it to the hot rays of the sun.

COST.

I figured that the material (cloth and paint) cost me about 10 cts. for each hive-cloth. In this out-of-the-way place every thing (except honey) is expensive. In more favored localities they would probably cost less. I used to pay 5 cents apiece for second-hand gunny-sacks; and as each sack would make only two hive-cloths, with some waste, the old cloths cost me 2½ cents each; but, as stated above, they had to be replaced every year or two. The painted cloths appear to be good for many years to come, and will, therefore, be cheaper in the end.

They are quite flexible, and do not crack; yet they are stiff enough to remain flat and smooth when peeled off from the hive. They are air-tight and water-proof, so that, even if the cover should happen to leak, the water will not soak through the cloth. I have now used 250 or more of these hive-cloths for three years, and I have yet to find the first hole made in any of them by the bees. I did, however, find one case where a colony had died out; and, as it was not discovered for some time, the moth-worms took possession and made several small holes in the cloth, biting through from the painted side.

In conclusion let me say that I am very much pleased with the change from the old to the new style of hive-cloths, and I owe Mr. McIntyre a debt of gratitude for putting me on the right track in this regard. I hope that others may try it and be likewise benefited.

Independence, Cal.

## ALSIKE CLOVER.

### Profitable for the Farmer and for the Bee-keeper.

BY ADAM LEISTER.

[The writer of the following article, Mr. Adam Leister, is one of our neighbor farmer bee-keepers who makes a success both with his farm and his bees. In talking with him the other day as to why so many farmers were putting in alsike in place of the ordinary red clover he made some statements which he kindly consented to put in the form of an article. As he is posted as to all of the latest developments of both branches of his business, and a close observer as well, his article should merit a careful reading, especially by the farmer class of our readers.—ED.]

For several years the high price of the common or red clover, together with the uncertainty of a catch, has set farmers to thinking about some substitute. Alsike clover, with its pink-and-white blossoms, is covering vast fields to-day that would otherwise be barren. I have read much about "clover-sick soil," and I have sown red clover for 35 years, and have closely observed the time for sowing, with all conditions bearing on this part of the program. At times my sense of reasoning utterly came to a standstill as to *why* the catch is not better.

The observing eye has noticed the spontaneous growth of alsike along roadsides and wet places where red clover is apt to winter-kill. The meager catches of the red clover, with its high price of late years, have unconsciously driven the farmer to the sowing of alsike clover.

As a milk-producer I consider alsike fully equal to red clover. Sheep thrive on it, and eat it with the greatest of relish. The bees have filled their hives this season much earlier than usual, for they have worked on the alsike, which is much earlier, more vigorous, and larger, than the white clover, and produced a very desirable grade of honey. Alsike clover certainly ought to receive one page in the seed catalogs. When mixed with red clover it makes a perfect stand. It is highly profitable for pasture, as it makes excellent hay for all kinds of stock; and last, but not least, it has a value for honey that is surpassed by no other clover. We welcome its presence, and look upon it as the most profitable crop that the farmer can grow when its honey value is considered.

Medina, O., July 6.

## CURING CLOVER AND ALFALFA.

*Wallaces' Farmer* makes a good distinction when it says that the moisture in the stalk can not be easily taken out if the leaves are turned to a crisp, as they will be if the hay is dried in the hot sun.

We must learn more about this business of properly curing clover and alfalfa. First, that we may put it in the mow in the highest nutritive state. That is very important; for if we are wise we shall want our cows to derive the largest benefit they can from the hay.

Second, we must guard against the ever imminent danger of spontaneous combustion or spoiling from over-heating in the mow. To put clover or alfalfa in the mow so if will be safe, and come out in fine color and highest nutritive value, ought to be the purpose of every good farmer. Too many men are simply anxious to rush the stuff in without regard to these other more important matters. We have never yet found a way of curing clover or alfalfa that will encompass these ends except by curing it in the cock and under hay-caps.

Now, if the clover or alfalfa is put into the cock as soon as it is fairly wilted, the moisture of the stalk is evaporated through the leaves, the natural way, and all the juices and flavors are retained and moisture dried by the fermentive heat rather than the burning rays of the sun. In this way the hay is cured rather than dried, and the nutritive value is best preserved. Not only this, but the leaves themselves, the most valuable part of the hay, are preserved. Cure clover and alfalfa in the cock with the addition of the hay-cap, and if cut at the right time the process is complete.—*Hoard's Dairyman.*

## DR. C. C. MILLER.

### "The Smile that Won't Come Off."

BY E. R. ROOT.

Most of the time I write under the editorial *we*, for, although nearly all the matter signed "Ed." is by me, I often reflect the opinions of my associates on the staff; but in this case I prefer to adopt the first personal pronoun, for I do not know how I could speak of a very good friend and valued correspondent disguised under the editorial cloak.

I am very glad to introduce Dr. C. C. Miller just as he looks at bee conventions, for most of the time he has a half-smile on his face, for that seems to betoken the geniality that runs all through the man.

Some years ago—yes, nearly twenty—I said to Dr. Miller, "You have a peculiar talent for making bright comments in convention, throwing in a few sentences and then sitting down. These comments always enliven the proceedings. Now, can you not edit a department for GLEANINGS made up of short items of running comment, something after the style of your convention work?"

Turning to me he said, his wonted smile vanishing for the moment into a serious expression, "Ernest, I doubt my ability to carry out your ideas, but I have confidence in your opinion. I will try it. If you do not like the stuff, throw it into the waste basket."

There, now you have the origin of Stray Straws. We had a department running, as we do now, called "Heads of Grain," and I suggested "Kernels of Wheat" as an appropriate heading; but Dr. Miller very modestly preferred Stray Straws, as he was not sure that he would be able to glean very much *wheat*. As to the general character of the Straws, and whether they are worth binding along with the other gleanings from many fields, I don't need to say. Our readers have long since settled that by the eager way they grab at the Straw-stack in Marengo.

Dr. C. C. Miller is probably one of the best-known apicultural writers in the world. He reads both the American and European exchanges, and his articles and comments on both sides of the Atlantic have brought him into prominence throughout all beedom.

His writings are further enhanced by a ripe experience of many years, for he is now in his 78th year, having been for forty years a bee-keeper, and a good one, especially in the production of comb honey; and, if I mistake not, his crops are sold before they are off the hive. This speaks volumes, not only for his method of management but for his careful honest grading, which is all done by the members of his family. The buyers know in advance just exactly what Dr. Miller's honey is going to be, and they are usually willing to pay above the market because they know beyond any question that there will be no after-quibble over the grading, quantity, or quality. There is no reason why many others can not sell their crop in the same way.

You may wonder why I have felt inclined to put in a picture of our correspondent at this particular time. Well, I have had intimations that our good doctor was not going to be able to keep up the fast pace which he has maintained all his life; and the thought came to me that possibly we might, not very many years hence, miss some of those writings which are so generally labeled with smiles.

Too often we pay tribute after our friends are gone, and just as often regret that we did not bestow some mead of praise while they were with us, especially if they are of the kind that can't be spoiled. For that reason I felt inclined to present the "smiling picture" which his family and all of us know is so natural—not because we *see* a smile, but because we know there is something *within* that makes a "smile that won't come off." What a happy world this would be if we all had that smile!

Dr. C. C. Miller has long since ceased to think of the dollars. All he seems to care for is enough to provide for himself and family. For many years his sole thought has seemed to be, "How can I help to make the world happier and better?" He is an active worker in the church and Sunday-school; but of late he has been admonished by his physician to let some of those outside things go. He is beginning to husband his energies; but, as any one can see who follows his writings, he makes a constant effort to bring the name of his Master before the world.

When I sat down to write this sketch I did not have in mind the writing of a biography or an obituary. I intended to dictate only a brief note expressing what I believe to be the real sentiment of our readers, if I may judge of what I see in the writings of our correspondents.

We sincerely hope that the doctor will have strength enough to attend the National convention at Detroit, for I doubt not there are many who would like to see a real "smile that won't come off," and many others who would like to get hold of his hand and shake it, and tell the owner of it how much they love him.

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## BOTTOM STARTERS.

### Do Bees Build on Them First?

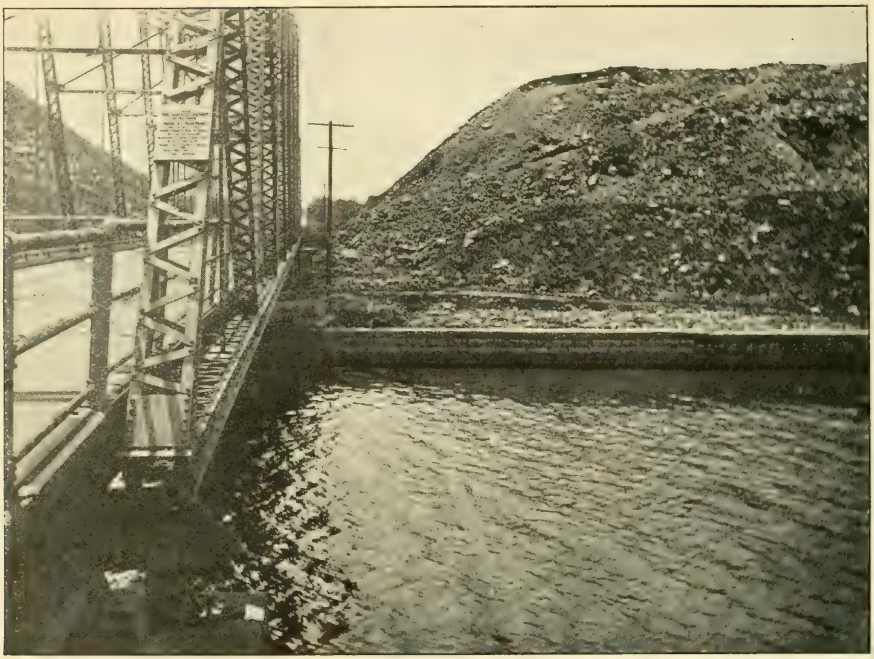
BY R. L. HALE.

You wonder, Mr. Editor, whether it is not unusual for bees to build on the bottom starter first, when such is used, page 643, May 15. Last season we used on half of our colonies a ⅞-inch bottom starter, and over half of them were built at the bottom first, some not at the top at all. Of course, we had no honey-flow. But I find it the case always in the fall at the close of the honey-flow.

In the repeated discussion as to whether or not it pays to use a bottom starter, I will give the plan which I have used with half of my bees for four years, and altogether this season. I use a three-inch starter at the top. At the bottom I take a top starter and fasten it with a hot plate, and then hold it firmly in place and cut it off with the wax-plate, thus leaving a starter of about ⅛ inch. I never have a crooked section from the fault of the starter.

Laplata, New Mexico, May 24.

DR. C. C. MILLER.



THE CHICAGO DRAINAGE CANAL, SHOWING THE BRIDGE AT ROMEO, ILLINOIS, AND THE BANKS, ON WHICH SWEET CLOVER IS MAKING GREAT HEADWAY.

## SWEET CLOVER.

### How this Honey-producing Plant Grows on the Banks of the Chicago Drainage Canal.

BY J. L. GRAFF.

Sweet clover, of the white variety, is found growing in such profusion on the towering banks of the Chicago drainage canal, between Chicago and Joliet, that apiarists are much encouraged in their attempts to produce honey in paying quantities.

Before this great sanitary canal was built, a large amount of wild clover grew in the Des Plaines Valley. It all but covered the right of way of the railroads traversing the region, and spread out to a wide expanse of prairie land. When the constructing gangs with their ponderous machinery of all kinds moved down the valley, digging out the earth and stone, and piling it mountain high on one side or the other, much of the clover growth was dug out or covered up.

Within the last few years, however, it has been noticed that the clover began appearing on the rough banks until at this time there are hundreds of acres of it. When the bloom comes, the bees get busy, and, as may be conjectured, they lay in a rich store of as fine a product as may be found in any milk-and-honey land in the world.

The accompanying pictures were made at Romeo, Illinois, and near the home of John J. Keig, a poultry-honey man. He breeds and raises Buff Plymouth Rocks, and also owns ten colonies of bees, from the work of which he recently sold 500 pounds of honey. Other property owners in the valley keep bees that find the rich bloom on the canal banks and in the adjacent territory. Quite recently the drainage board had its attention called to the increase in the clover acreage within the sanitary district, which by this time embraces 260 square miles of territory, and no one at this time is able to say that the great corporation may not turn to producing honey within a bailiwick in which by this time it has expended $53,000,000.

Ravenswood, Ill.

## THE TROUBLES OF AN AMATEUR BEE-KEEPER.

### Moving Day.

BY F. DUNDAS TODD.

A Danzenbaker hive requires little preparation for moving, as all the frames are firmly held in position. In the day time I fastened all the bottom-boards and supers to the hives with staples, then I nailed on top of each super three pieces of wood, straight on the one side but curved on the other. They were roughly shaped with a hatchet out of inch boards two inches wide. Over these I placed mosquito-wire netting, the pieces being large enough to overlap by a couple of inches all round. The margins were bent on the sides of the hives, and held in place by strips of quarter-inch wood fastened with finishing nails. The purpose of this covering was to give the bees

plenty of clustering room and especially plenty of ventilation. The cover was placed over all; and, being well above the edges of the hive, tended to cool off the bees during the night, which I felt would be a good thing, as the bees would probably be less inclined to hang out as they had been doing.

Bee-day in my yard was generally Sunday, and it was no unusual thing for two dozen of my neighbors and their children to be grouped round the hives watching with keen interest the various manipulations. The farewell scene, however, occurred on a Saturday forenoon, and so my gallery was limited to a circle of ladies; but they were treated to an unrehearsed performance that was more than funny. My boy, as usual, occupied the role of general assistant, and in such hot weather his raiment was as scanty as the laws of Illinois allowed. Notwithstanding frequent past experiences he always forgot to tie the bottom of his trousers; and since he wore no underwear, any stray bee that wandered above the region of his shoes had a splendid opportunity for quick business. Again and again I would admonish him, reiteratiug the rule about bees always crawling upward.

On this occasion we were very busy, and I was astounded to see him limp gingerly to the back porch, where he dropped on to the top step, leaned his back against the wall, and stuck his feet over the top railing. The position looked both uncomfortable and peculiar, so all the grown folks gathered round him to learn the cause of his trouble. We found him carefully holding up the slack of his trousers just above the knee, and after repeated questioning he sadly informed us that at least three bees were roaming at large in the domain of his nether garments; that he was afraid they would sting, and he wished they would, just to get the anxiety off his mind. But why this attitude? Bees crawled up, surely we knew that; and since they had ventured as far in one direction as he wanted, he was reversing himself so that they could start the return journey; but if his feelings were any indication they were now pursuing a downward career, that was the same as upward to him. I proposed to kill each one with a swift slap above the cloth; but, no! he was sure the dying wretches would sting, and it was his leg, not mine. The good matrons gave their best advice, but this was no ordinary infantile ailment, so we awaited developments and all joined in a hearty chorus as three separate and well-defined exclamations passed his lips, each indicating a lessening of his anticipatory pains, but decided augmentation of his physical sufferings. In due course he fastened all slack material round his ankles, and returned to his labors. But even now you can not convince him that bees *always* crawl upward.

My son and I were up at four next morning. We found hundreds of bees hanging outside; but the smoker drove many in. In front of each entrance we fastened wire netting with strips of wood. We figured we could do all that was to be done at this stage in about 15 minutes; but one thing after another lengthened out the time to over an hour and a half. The wagon was pulled close to the hives; but as many bees were flying I told the driver to take his horse about a block away. Once loaded, my boy and I pulled the wagon about fifty feet at a time and proceeded to kill as many of the flying bees as we could, as we feared an attack on the horse might precipitate a runaway.

Just before starting I sprinkled all the hives

HIGH BANK OF THE CHICAGO DRAINAGE CANAL, SHOWING VEGETATION, MUCH OF WHICH IS WHITE SWEET CLOVER.

SHEPARD'S APIARY OF HOME-MADE HIVES.

with water from a watering-pan so they should not want for water; and, besides, it would tend to keep them cool. Of course, they were now clustered under the netting, and reminded me greatly of a big-sized box of black currants.

The day proved to be a very hot one; but I shaded the bees as much as possible and sprinkled them with water every half-hour or so. The trip of eleven miles took nearly four hours. The driver was a colored boy, evidently very fond of a horse, and on my hinting we might go a little faster he confided that the steed was "powerful slow," but if we gave it time it would surely get there. For about an hour before we arrived, we were threatened with a terrific thunderstorm, and I felt very anxious, as we were far from shelter most of the time. However, the storm circled round us and happily kept off until about an hour after we had placed the hives in their new location.

It took but a little while to place the stands, unload the hives, remove the netting, and make every thing shipshape. To make the bees take full notice, smoke was freely used, and boards placed in front of the entrances.

Next afternoon the purchaser called me up on the telephone to tell me the best hive had swarmed, and wondering "what in thunder" he should do about it. This was a proposition he had not bargained for. I told him what to do, and I heard no more about these hives until months afterward.

All bee-keepers know that 1907 was a poor season generally; yet these hives gave my successor, after July 17, 210 sections of honey, and in addition four swarms. The news came to me from my friendly rival in a free confession that again I had bested him, he having secured 127 sections as against my total of 222 with 45 pounds of chunk honey extra.

Again the student with the Danzenbaker had whipped the practical man with the Dovetailed hive. Query: Wherein lay the secret of success?

And so, you will think, here ended all my troubles with bees. As a matter of fact, I had for the moment lost my pleasure, but I carried westward to the Pacific coast one incessant thought —why did these three hives develop so unevenly in the spring, and so unexpectedly? No, I had a fine lot of bees, both at the beginning of winter and the end, with an extra large quantity of stores. "With millions in the house," why did it not easily outstrip the other two? No. 2 was the weaker of last year's new hives, but laid in plenty of sugar stores, though not nearly as much as did No. 1. No. 3 was in fine shape so far as bees were concerned, but did not take down any thing like a sufficient quantity of sugar and water food. I was not surprised that it lagged in the breeding-up race in the spring; but the other two got on my mind, and so day and night I cogitated over the facts from as many angles as I could, but always without a satisfactory answer. Mr. Alexander, in one of his luminous articles in Gleanings, brought relief to my tormented mind. Hive No. 1 was honey-bound—that is, it was so "chuck full" of stores that the queen could not find enough empty cells in which to lay eggs. The remedy, had I known it, was to use the extractor. Benton, in his book, recom-

mends the same procedure; but though I had read his advice many times last season, I never suspected the principle was applicable to my own case. The best way to open one's eyes is from the rear; then we can see with the mind as well as the brain.

Hive No. 2 had sufficient stores and plenty of cell room for the queen, and therefore came along at a gallop. It exemplified the beauties of the happy medium, the too often unattainable balance of conflicting conditions. No. 3 was strong in bees but weak in stores, so "played safely."

I am free to admit that possibly—nay, probably—my solution is all wrong; but at any rate I have a working theory to guide me in spring manipulation—something I never had before, and I have always found a wrong theory more useful than no theory at all. With a theory one is always watching facts closely to see how they square with it; without a theory, one pays little heed, and soon forgets. So, thank goodness, I am in possession of a theory, but I am perfectly willing to discard it for one that looks better. Anyhow, this spring I will note carefully the ratio between the honey supply on hand and the cells available for egg-laying by the queen, so that I may learn what constitutes the ideal balance, for such must exist. I will take care that my bees have "millions of honey," but not necessarily "all in the house." A reserve store in the barn may probably be better.

Medford, Oregon.

## THE BRITT APIARY, JACKSONVILLE, OREGON.

BY F. DUNDAS TODD.

In the early fifties, when Southern Oregon was attaining notice as a mining camp, there settled in its most important town at that date, a young Swiss photographer by the name of Britt. He attained both fame and financial success in his calling, dying only a couple of years ago. But he is better remembered as the maker of the Britt place which is one of the show places in this part of the State.

True to his blood he chose a barren knoll for his home, and then proceeded by the liberal use of natural taste, brains, and water to convert it into a wonderful garden in which not one square foot of ground is unproductive. Forty years ago he added bees, and until the day of his death he was never without a fair-sized apiary. It is now managed by his son, who has about 40 hives of hybrids, about the only kind possible in this part of the world at this time where there are many keepers of bees but no bee-keepers.

Medford, Oregon.

## HOME-MADE HIVES AND COVERS.

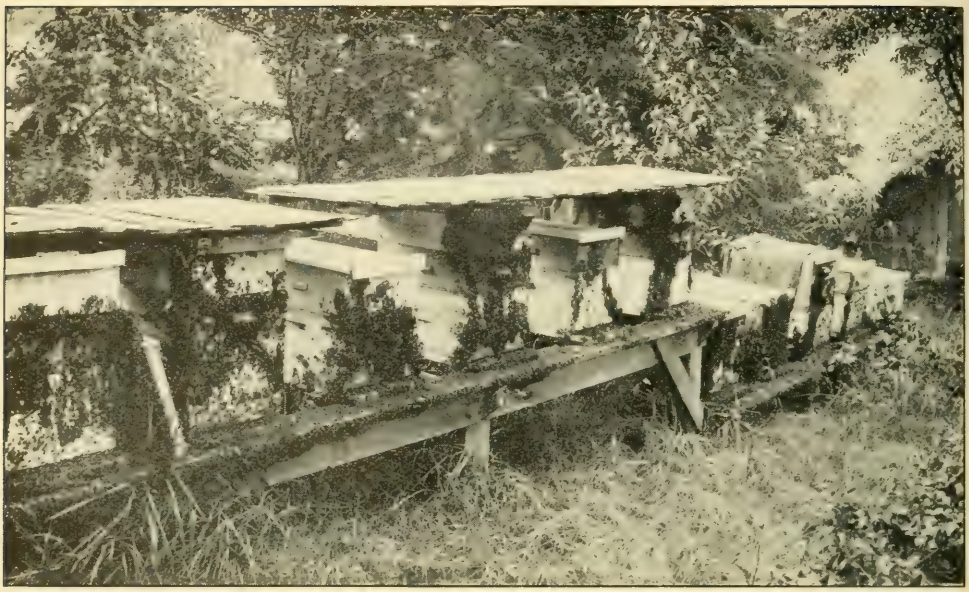
### Big Honey Yield from Alsike Clover.

BY A. D. SHEPARD.

The hives shown in the engraving are home-made with the exception of the inside furnishings, which came from the factory. The most of the extracting-supers are also the "saw-and-hammer" brand, but they are not satisfactory, for they do not hold their shape. They get out of square, and warp away from the end pieces, making openings that invite robbers My preference for home-made hives is to halve the ends and sides, and nail each way, which makes a strong corner.

The covers are patterned after the regular metal covers, except that, instead of simply three strips across the top, this rim is covered with wood, and on top of this is the metal cover. The heat of the sun does not strike through this as it does through the galvanized iron alone.

THE BRITT APIARY, JACKSONVILLE, OREGON, THE OLDEST IN SOUTHERN OREGON.



A HOT DAY IN JULY.

A super-cover is used with this metal cover. I nail strips ⅞ × ½ inch on one side of this super-cover, forming a tray in which I place several pieces of felt paper (such as is used under carpets), and tack one piece on the under side, as I use cloths or quilts over the frames. This cover makes a good heat-retainer, and helps to ward off the direct rays of the sun.

My home yard of 75 colonies springed badly in 1907. Several died, and I doubled up, somewhat after Mr. Alexander's plan, so that I had 35 colonies for the harvest. I took 3000 lbs. from them. A nice piece of alsike helped "a heap," giving me a crop of 5000 lbs.

I did all the work alone, except the help of a man six days during extracting.

River Falls, Wisconsin.

## BEES CLUSTERING OUT ON THE FRONTS OF THE HIVES.

### Work Suspended Because of a Crowded Condition

BY E. BRITT.

On a hot day in July, 1906, when the thermometer reached the exceptional point of 104° in the shade, my bees were clustering on the fronts of the hives as shown in the engraving. I thought the heat alone was the cause; but upon investigation I found that the supers were crammed full of honey, and in two instances the bees were building comb on the outside. I keep from 30 to 50 stands, and it has never been necessary to feed or to provide any protection during winter. I have never had a failure of a honey crop. The hives are placed above the ground to keep the toads from meddling.

Jacksonville, Oregon.

[You do not say whether these bees swarmed under the conditions shown and described. If they did not, their non-swarming tendencies ought to be encouraged. No wonder they clustered; and when they were compelled to build combs on the outside for want of room the wonder is they didn't swarm too. Perhaps they did.—ED.]

## THIRTY YEARS OF EXTRACTED-HONEY PRODUCTION.

BY GEO. W. MORRIS.

My apiary is run almost exclusively for extracted honey. In 1906 I took 4800 lbs.; in 1907, 7500 lbs. I realized $1100 for the two crops, besides using about 1000 lbs. at home in the two years. Since I embarked in the bee business, thirty years ago, there have been at least ten years when I got no surplus honey, and even had to feed in some years. I am trying the divisible-brood-chamber hive this season. I believe in large hives, young and prolific queens, good management, and eternal vigilance in order to succeed.

I have had to do about all the work in the apiary myself, as my only son is afraid of bees, although he makes a good hand at the extractor. He can uncap and extract as fast as I can bring in and return combs to the hives. The most we ever took in one day was 600 lbs.

The cart shown in the engraving in front of the building is used to haul the honey to the extracting-room, and it is a very handy vehicle to have about the yard.

Cornishville, Ky.

[A good hand-cart in a bee-yard where the ground is reasonably level is a great labor-saver. If the ground is uneven, a wheelbarrow is better. —ED.]

## THE PROPER CARE OF EXTRACTING-COMBS.

### Does it Pay to Give the Bees Wet Combs? Feeding Colonies for Winter; Thick Sugar Syrup Recommended.

BY E. D. TOWNSEND.

I formerly practiced spacing our combs after the last extracting, and criss-crossing them out of doors for the bees to clean up, as this was the way some advised. In some cases a part of the combs would not be cleaned by the bees as usual. When these were given to the bees to be filled the next season, we never could see any difference in the quality of the honey, whether the combs were cleaned or not. Some of the honey left in the combs candies, while the rest apparently disappears; at any rate, none shows up in the honey at extracting time. I take the precaution to give combs, from which dark honey had been extracted, to the bees, before the season opens, as I have explained heretofore. I used to think I was doing the bees a favor by giving them these wet combs to clean outdoors; but now I'm very sure it is an actual damage to them rather than a help; for with their mad scramble for the honey, they use up valuable vitality, and this, too, at a vital time late in the season, when all their strength is needed to carry them through the winter. Then I would rather have the honey left in the combs than have that dirty purging smeared over the stories and frames. The bees are so eager for the honey that they overload, thus causing them to purge before taking wing.

Upper stories set back on the hives are cleaned all right; but the honey is stored right back in the same combs, so this method is a failure.

Toward the end of summer, or in this location early in September, bees begin to curtail brood-rearing. When this is going on, and as the brood-nest begins to grow smaller and smaller each day, instinct teaches the bees that a period of rest is in store for them. At this time they manage the interior of their hive as if they had full knowledge of the rigorous winter that is in store for them, for, as the brood hatches out for the last time in the fall, they busy themselves carrying honey from the outside combs and filling in those cells made vacant by the hatching of the bees. This carrying-in process of honey from the outside combs is continued until there is as much as ten pounds of honey placed in these empty cells in the middle of the brood-nest. If the honey in these outside combs is of good quality, all is well; but if it is of an inferior quality, and the colony does not winter perfectly, there is likely to be trouble.

Knowing of these conditions, and of the instinct of the bees, we take advantage of this period to feed all colonies that are short of honey for winter stores. If the honey in these outside combs is of an inferior quality we have fine results by feeding every colony ten pounds of sugar syrup. After the last extracting, the yard is gone over and the colonies "hefted" to see if they have stores enough to last them until the main honey-flow of the next June. Any colonies falling short of 25 lbs. are marked "short," and the amount of stores necessary to bring the weight up to 30 lbs. is marked on the hives. In estimating the amount of stores needed, but few colonies are looked into—just enough colonies are looked into to get the run of how they are as to amount of stores. Colonies with very old combs are much heavier than new swarms; and taking this into consideration it does not take long to get on to the knack of estimating very correctly, since all the new colonies are marked.

Knowing the amount of stores needed, it is best to buy 15 to 20 per cent less of granulated cane sugar than the amount that is to be fed. The

APIARY OF GEO. W. MORRIS, IN CORNISHVILLE, KY.

thicker we can make the syrup, and get the bees to take it, the less sugar it will take to make up the shortage. While bees will take a sugar syrup thicker than three parts of sugar to two of water, we have had rather better results with this portion of each. This makes a syrup that weighs in the neighborhood of 11 lbs. to the gallon; and as good honey weighs 12 lbs. to the gallon, there is but one pound of moisture to the gallon for the bees to evaporate. Of course, there are other losses, so if the colony needs 20 lbs. of stores, more than they already have (10 lbs.), they should be fed 25 lbs. of the syrup. This would put it in good shape, and it would not need looking after again, in regard to stores, until the white-honey flow the next June.

In making syrup of granulated sugar we use a boiler large enough to cover the whole top of the stove. This is made of galvanized iron, and is what we use to melt four 60-lb. cans of honey at a time. A wash-boiler might do, but would not be so fast. We weigh in the water; then, as the water comes to a boil, add the sugar, keeping the contents of the boiler well stirred, after the sugar is added, to prevent it from burning to the bottom. As soon as all the sugar is melted we empty it into a tank with a gate at the bottom, which is elevated, in order to run the syrup from the tank, to a 60-lb. honey-can on the scales. We set the scales to weigh 55 lbs. net to the can. This will fill the can about the same as 60 lbs. of honey.

The syrup is drawn to the out-yards in these 60-lb. cans, and is not weighed again. We feed in Miller feeders that hold 20 lbs. Four or five tin pails are provided to use in feeding. We weigh 10 and 15 lbs. of the syrup in these, and mark the levels on the sides of the pail. The combination of these two weights will make any weight we need, and it is much more convenient than weighing the second time, besides being accurate enough for the purpose. As we do not feed a colony less than 10 lbs., the hives are marked 10 lbs., 15 lbs., 20 lbs., 25 lbs., and 35 lbs. short, the latter weight showing that the colony has nothing but empty combs. The colonies marked to be fed from 10 to 20 lbs. are fed all their allowance at once. The few that are marked to be fed 25 to 35 lbs. are given their additional 5 to 15 lbs. as soon as their feeder will hold it. To expedite matters, the colonies that have to be fed most are fed first; so if any have to wait, it will be those that do not need so much, and may be fed when the first-mentioned colonies are getting their second feed.

We buy and keep, for the purpose, shallow supers with strips of tin nailed on the lower inside ends for the feeders to rest on. When not in use they pile up to good advantage, and, with a hive-cover on top, are kept away from the dust and flies.

Remus, Michigan.

[We wish to place strong emphasis on the statement of Mr. Townsend, to feed the syrup *thick*, and, we may add, give it all at once, or at most in two feeds. If possible, give it all in one feed, sufficient to meet the needs of the colony until the following summer. We fed last year, in small dribs, syrup half and half; but we found at two of our yards that the colonies that were strong in summer dwindled very rapidly in the fall. The effect of slow stimulative feeding was to use up the vitality of the bees just at a time when we should have had a large force. In former years we fed *thick* syrup without any reduction in the strength of the bees.

Recent discussion in these columns has practically shown the advantage of thick syrup for winter feed, and in one large feed. For this purpose, feeders capable of holding as much as 25 lbs. are desirable. As to the feeder, any standard construction will answer very well. Even a large tin pan with wet cheese-cloth placed on top will give excellent results.—Ed.]

## COMB HONEY SOLD BY THE SECTION INSTEAD OF BY WEIGHT.

BY A. F. BONNEY.

I recently wrote the following letter to the Board of Food and Drug Inspection of the Department of Agriculture: "Inasmuch as liquor-dealers are still allowed to sell 'short' quarts, simply being required to put up a notice that 'All bottled goods are sold by the *bottle*, not by *measure*,' would the enclosed label conform to the law?"

ABSOLUTELY

PURE HONEY

Gathered by Stored by Ripened by

THE BEES

and conforms to all requirements of the Pure-food Law.

This package is sold as a *Section*, not as a pound.

Net weight ____ ounces.

A. F. BONNEY,
BUCK GROVE, IOWA.

I based my question on the fact that bee-keepers have used practically the same size of section ever since the section was invented. I also asked particularly how we were to tell that *comb* honey meets the requirements of the law, as to moisture and sugar, when it is sealed, inasmuch as one might test 50 per cent of the stock on hand and find it all right when the rest would run over or fall short. To this I received no reply, but the following letter shows the opinion of the Board in regard to the label.

Buck Grove, Iowa, May 1, 1908.

*Dr. A. F. Bonney:*—Replying to your letter of the 20th instant, I regret to advise you that I am not authorized to approve or criticise labels submitted in connection with the enforcement of the Food and Drugs Act of June 30, 1906, as you will note by reading F. I. D. 41, enclosed. As a personal opinion, however, I would say that the use of the expression, "This package is sold as a *section*, not as a pound," in connection with your honey, would not be in violation of the act. Your attention is drawn to regulation 29 (Circular 21) in which you will note that a statement of the weight of a food product is not required to be given on the package. I have examined the label which you set forth in your letter; and if the honey on which this is to be used fulfills the requirements of the standard for honey promulgated by the Secretary of Agriculture, and which is found on page 11 of Circular 19, enclosed, there would be no objection to its use, with the exception that you would be going too far to designate the article as *absolutely* pure.

F. L. Dunlap,
Acting Chairman.

Washington, D. C., April 24.

## COMB HONEY PRODUCED WITHOUT SEPARATORS.

### How to Make the Bees Occupy the Whole of the Super at Once; Keeping the Brood-nest Free from Surplus Honey; Preventing Swarming.

BY ROLAND SHERBURNE.

The reading of Mr. Hand's article in Dec. 1st issue, page 1503, on the size and shape of sections, prompts me to give something of my experience. I have raised tons of comb honey without separators—in fact, I have never used them. It is to be hoped that some one will find a better plan than any we now have; but if I had to use separators to produce good comb honey I would give it up and run for extracted entirely.

Now, Mr. Editor, I want to protest most emphatically against extracted-honey producers telling us how to produce comb honey. The latter is a science in itself, and has little in common with the former. No man is in position to give advice on this subject unless he has made a success of raising comb honey himself, or at least has been intimately connected with it. Again, in extra good seasons we may get inflated ideas that will require the next two or three years to get rid of. My experience has led me to advise large hives and plenty of room when running for extracted honey, and a small brood-chamber as a working basis when running for comb honey.

I want to say a word in favor of the much used and much abused 4¼×4¼ 7-to-the-foot section. One trouble with section-supers and brood-chambers is, there are too many misfits. Some put a T super or a super without separators over a ten-frame Langstroth body, and expect fine section honey. The result is nearly always a failure. Such large hives should always have a section super with separators, so if the bees have a mind to commence somewhere in it during a good honey-flow they *must* build straight combs. He does not blame the large brood-chamber—oh, no! He condemns the super. A year or two ago some one wrote that the T super was the poorest of all he had tried. I think he told the truth; yet I would like to add that I presume his super and brood-chamber were a miserable misfit. If a man wears a pair of boots that are too large or too small he will surely blame the boots for hurting—not himself for wearing them. My experience has been that an eight or ten frame full-depth Langstroth brood-chamber is too large as a working basis for any comb-honey super holding 28 sections without separators, to give best results.

I use a modified T super with $\frac{3}{16}$ stationary cleats on the sides for bee space outside the sections, and bodies with closed-end frames that meet the requirements in our locality as nearly as I can make them. In fact, I am working along different lines at the same time. I handle hive-bodies and half-bodies as horizontal divisible brood-chambers. I never handle frames in the brood-nest.

Thirteen years ago I commenced using T supers without separators, separated with wood-zinc queen-excluding boards from hives with eight frames six inches deep. If two swarms went together, so much the better. The results were great; nearly all the honey was stored in the sections, which were often filled first. However, there was not enough honey left in the brood-chamber. The hive was too weak in bees and honey at the end of the early flow to recuperate for the fall flow if we had one. These six-inch bodies were to be used double as a brood-chamber the next spring and summer; but two of them proved too large, as a rule, for best results.

I next tried eight frames, 7 in. deep, inside measure, thus adding the capacity of one L. frame. Such a body is large enough for an ordinary queen to keep filled with brood without adding an extra seven-inch body.

Here in Iowa I always prepare for two honey-flows whether they materialize or not—the white clover and fall flow. In the spring I double up all weak colonies until all are reasonably strong and I get them ready for the white clover. My aim is to start the bees to work in the sections without their getting the swarming fever. In this I am fairly successful, though not wholly, of course. I find that, if I can get the bees hard at work in the sections at first, then giving the right kind of room at the right time, I never have more than 25 up to 40 per cent of the colonies run for comb honey that swarm in the worst of seasons.

I am much taken with Mr. Hand's system, and shall try to work it in as fast as practical the coming year by combining his and mine. I hope to reduce swarming to a minimum.

I also have 100 or more half-bodies with extracting-frames 4¼ inches deep, inside measure. I intend to fill as many more as I can of these next season, and I shall use all of them in connection with the seven-inch frame. These shallow extracting-supers with 4¼-inch-deep frame I consider very necessary in a yard run for comb honey, for they can be used in many ways above the brood-nest with a queen-excluder between to give more room and to hold odds and ends of honey before the main flow begins or they may be used, when necessary, to enlarge the brood-nest and give the queen more room, but especially to keep honey out of the brood nest. The old way of adding more full-depth combs does not take or keep honey out; it only gives more room for plugging. The uses to which these shallow half-bodies for extracting can be put have often been told in GLEANINGS, so I will not speak further in regard to them.

A queen that will not keep eight seven-inch frames reasonably full of brood in season is not worth keeping; but some need more room, and they must have it as soon as needed. I make it a rule not to put on a super of sections until the colony is strong enough to fill all or the greater part of it with bees at once. They will soon be working in all the sections, and these will grow naturally and evenly. This is the secret of success in using sections without separators. We are told to put on sections when the bees commence to whiten the combs; but unless the colony is strong the brood-nest will be plugged with honey, and we know what that means. I prefer putting a half-body over a queen-excluder to hold the honey, and waiting a few days. When ready I place the super of sections under the half-body and over the queen-excluder, and then there will

be no trouble about the bees entering the sections. In a short time I take off the half-body. When possible, by interchanging the sectional brood-chambers, I place the super of sections over the center of the brood-nest. In any event I want no honey between the brood and the top-bars next to the sections unless it be in the outside frames.

I find that seven to the foot is the limit in width for sections to use without separators, and am quite sure a narrower one would be better. I do not think this section should be used with separators, for it would be too light in weight for the trade. I like it because it comes so near averaging 1 lb., because I think I can secure more honey and with less work by this system in my locality; but I am ready at any time to change when I think it will pay.

I am glad to know we have such an able exponent of up-to-date bee-keeping as Mr. J. E. Hand. With his method of handling hives he is bound to make a success of these trial sections. Let us have all the results we can of his valuable experiments.

Lone Tree, Iowa, Dec. 12.

# Heads of Grain

## From Different Fields

### WHY WAS THE QUEEN NOT KILLED?

I have only one colony. About April 1 I found this to be queenless—hopelessly so, but with plenty of bees and stores. As to requeening I was advised to give a frame or two of brood and to introduce a queen later on, for to give a queen to a hopelessly queenless colony at this season was considered an uncertain procedure. This seemed like good advice, so I procured from a near-by friend two frames of brood with a quantity of bees on each frame, also the queen with them, intending to hold her caged and introduce later. In placing these two frames in my hive they were examined *very* closely; but I failed to find the queen, and concluded she was left, with many bees, in the box in which I brought them. Such was not the case, and the matter remained unsolved, on the supposition she had taken wing in the transfer. When I closed up my hive there commenced a battle royal in which I judge every strange bee was killed. This was April 17. On April 23 I examined my hive and found brood hatching out, but no queen-cells—plenty of eggs, the queen I had brought, and all going well. A full week's work had been put in. To make the story short, is it not likely that the turmoil caused by the battle had diverted the bees from the tendency to kill that queen until she had acquired the hive odor sufficiently to make her acceptable to them? This is the only construction I put upon it. A witness of this operation said at the time, "A hundred to one the queen is not in that hive; or if she is, she is killed."

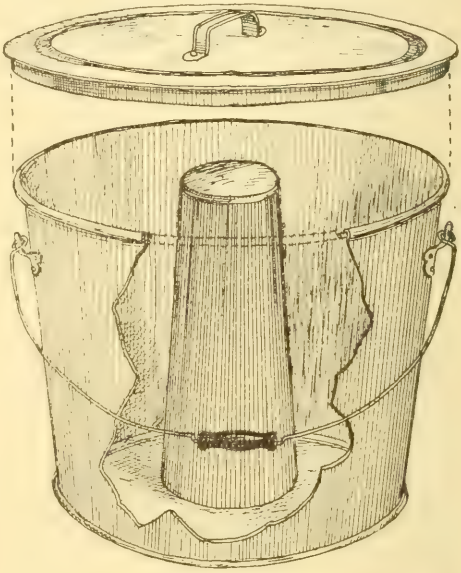
Pottstown, Pa., May 22. Edward Lester.

[A very good way, and one of the best, to introduce a queen is to give her with a couple of frames of brood and bees to the queenless colony. Such colony, if it is hopelessly queenless, and the queen is placed between the given frames, will usually accept if it be a gentle strain of bees. If it be a cross one, it is a doubtful method.

In the case above recited we should judge the bees were hybrid, black, or a cross strain. It is then necessary to use smoke in uniting a strange lot of bees with them. In this case it might or might not have prejudiced the safety of the queen. It is a wonder, in the general free-for-all fight, that the queen was not killed. The bees were so intent on killing each other that they possibly did not notice her until she had acquired the same colony odor or the odor of the surviving belligerents. There are queer things that happen in bee culture, and this seems to be one of them.—Ed.]

### LIQUEFYING HONEY ON A SMALL SCALE WITHOUT DANGER OF OVERHEATING.

On page 145, Feb. 1, occurs the sentence: "With ordinary methods there is danger of scorching the honey on the outside of the mass while the center is still granulated." I have a plan which I thought of before reading the article and sentence quoted, and which is expressed in words found in the second paragraph, viz.: "There is a method that almost any one can fol-



A HONEY-LIQUEFIER; A HOUSEHOLD UTENSIL THAT CAN BE BOUGHT AT ANY LARGE HARDWARE STORE.

low, whereby a great difference between the temperature of the center of the granulated blocks and that on the outside can be avoided." Perhaps you have seen the tins (a tube running up the middle) used in making "angel cake." Well, we have a taller tin here in Boston, used for making brown bread, plum puddings, etc., with a cover on it that can be fastened. The tube is closed at the top (probably to keep water from running over into the interior and contents of the tin. We have just tried the thing, and succeed-

ed in liquefying honey, which was very thickly candied, in a very few minutes, using only moderate heat. In fact, as Mrs. Levens says, "It worked finely." There is a tight-fitting cover to the can.

The same principle could be made use of in constructing a can on a larger scale.

Malden, Mass. JOS. B. LEVENS.

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LACK OF ENERGY DUE TO TOO MUCH HONEY IN THE HIVE.

*Mr. Editor:*—Noticing your editorial on page 742, on "diagnosing colonies by the bee-flight at the entrance," I am constrained to make a suggestion. In making a comparison of two colonies, you speak of one with a moderate amount of brood and a large amount of honey; but the bees, though a good force, are not flying much—but *why*, you do not know. Please allow me to ask why they should fly in the case you mention. There is no place to put stores if they brought them. Now, you just enlarge the brood-chamber by putting in empty comb; or put a surplus body on top, and scratch a few of the combs that have hard cappings that have gone over the winter, then notice the difference in the conduct of those bees. It is not the fault of the bees, but of the manipulation of the hive in the case mentioned. WM. M. WHITNEY.

Evanston, Ill.

[In the case under consideration, of the colony with a large amount of stores and little activity at the entrance, we see, on looking up the reference, that we gave a wrong impression. The colonies in question had plenty of storage room; but relatively they had much more than those that were busily at work. The lack of energy, while it might have been due in part to the cause you ascribe, was more due to the queens. There were only three in all, and they did not do any thing all the season, and we have since requeened them.—ED.]

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MORE EXPERIENCE WITH BEE PARALYSIS.

On page 1568, Dec. 15, 1907, you asked to hear from other subscribers about the trouble mentioned by Mr. Youngman. Ten years or so ago I noticed a few shiny bees in one of my hives, which the other bees seemed to be worrying. Afterward this hive cast a big swarm, and the trouble seemed to vanish. Next season, in the early part, this swarm developed just about as Mr. Youngman says his did. There were plenty of shiny trembly bees as well as those not shiny, but which were greatly swollen on the inside and outside, and out on the rock in front. The colony was depopulated so fast that the bees were unable to store honey except for themselves. I examined their brood, and it appeared to be perfectly healthy. The other bees nosed around the affected bees, and it spread to other hives, though not to any great extent, so far as I could see, only a few bees among other hives being shiny. I sulphured this badly affected hive and burned the frames, brood, and honey. I was afterward told the trouble was paralysis. I have not had any as badly affected since, though there is more or less of it among my bees, and it does not seem to prevent them from building up strong for honey or to swarm, as they may be inclined.

In a few other colonies I have noticed some of the bees were swollen, and in one of these I found the queen outside, apparently paralyzed. I warmed her up, and she seemed to be about right. I then put her back, but afterward found her outside dead, if I remember right. Afterward I put the frames and bees into a super over another hive without any harm to the other bees so far as I could see. The stronger a hive gets, the less noticeable the paralysis becomes.

Alpine, Cal. C. E. FOSS.

[It is generally believed that bee paralysis is a constitutional disease—that is, that it comes from the queen. Certain it is, in many cases at least, the removal of the queen effects a cure, but not always. In advanced stages the disease may be transmitted through the bees after the queen has been taken away. The brood or the comb does not, apparently, carry bee paralysis, providing all the bees are shaken or brushed off. All such combs can be given to healthy colonies.

Mr. O. O. Poppleton, of Florida, who has had a very large experience, advises, after the brood has been given to other bees, to brimstone the affected colony, as he thinks it a waste of time to try to cure the sick bees.—ED.]

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DENTS IN THE THORAX OF THE QUEEN NOT DETRIMENTAL.

Referring to the May 15th issue, page 621, I would say that we have had a few queens with dents on top of the thorax, and have not noticed any incapacity in laying. By chance the queen that we chose to breed from has been marked with a large dent since the spring of 1907. If you think such a mark a defect, or a detriment in the effect on the daughters, then we would not breed from her. We selected her because her color is an attractive dark leather (not yellow); the workers are three-banded, and the most gentle we have in our apiary. They also build comb with white cappings.

Hemlock, O., May 20. P. BIESEMAN.

[If the dent in the thorax of the queen does not interfere with her egg-laying she would, of course, be all right for any purpose.

According to our experience, the leather-colored strains are much superior to the bright, yellow stock. Nearly always more gentle, they are hardy, and good workers; but, unfortunately, the trade seems to prefer the extra-yellow stock. We are discovering that many are going back to the darker yellow. It is the original type of Italian before it had been tampered with by man.—ED.]

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HOW TO ADD EMPTY SUPERS ON A COLONY STORING HONEY.

Do you leave the supers on after the cells are capped? I put one on this spring; and when it was about half full I put one under it and then the third, but they seemed to be very long about capping it, so I took the two top supers off and took what was well capped, and the others I put into one super and set it back. Was that right?

Mineral Ridge, Ohio. JNO. WAGGONER.

[Comb-honey supers should be taken off as soon as filled. Your plan of handling supers as outlined in your letter was nearly correct. Dur-

ing the fore part or the middle of the honey-flow the empty super should be placed *under* the one partly filled. As the season begins to wane, the empty one should be placed on top, for it is far better to get one super completed and well capped over than to have two partly filled, neither of them having any capped combs. In the case cited you should not have given the third super as soon as you did. The first super should be well capped over before giving a third.

As the season closes, or comes to a close, one can, where there are only a few colonies or a few supers to handle, take out the filled sections, placing all the unfilled ones in one super to be placed back on the hive; but in large apiaries this is impracticable, for the honey can then be handled only by full supers.—Ed.]

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HOW TO TELL WHEN A COLONY HAS SWARMED.

I have a colony of bees that, so far as could be seen, had no queen, though it has been making much honey. It has been lying out on the alighting-board several days. I have looked several times for a queen, but could find none. The colony had considerable capped brood, but no unsealed. On 27 I found three queen-cells, and saved one and destroyed all others. This morning the colony swarmed and went away. On examining the hive I found what I thought—the queen hatched from the recent cell.

I have two other colonies in the same condition—not so much capped brood as the other, but no signs of brood in the larval state. Had the first a queen? Have these other two a queen? If so, why don't they lay, showing signs of their presence? M. F. Saule.

Crestline, O., July 2.

[It is our opinion that the queen of the first colony died just before the bees were ready to swarm. If the bees had not been hanging out, and were reduced in numbers, we should say that a swarm had issued from the hive. At all events, as soon as the first virgin hatched she led out a swarm.

In the case of the other hives mentioned, we should say that swarms had issued, leaving capped brood and queen-cells.

If one does not keep a close watch on his colonies he will be liable to let swarms get away, with the result that he will have weak colonies left, a lot of queen-cells, and more or less after-swarming.

We may usually set it down as a rule that, where a colony is reduced in strength, has capped brood, no eggs nor queen-cells in the height of or following a honey-flow, a swarm has issued. If we find the same condition, either before or after the honey-flow, it can be explained on the ground of supersedure.—Ed.]

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WHY SHADE FOR BEES IN SOME PARTS OF CALIFORNIA IS DETRIMENTAL WHEN GIVEN ALL THE TIME.

It was a surprise to note Mr. Leslie Burr's comment upon the average "Californian's horror of natural shade," in the Sept. 1st issue of Gleanings for last year, p. 1152. I say surprising, because Mr. Burr has spent a season in California, actively engaged in apiary work, and must have noted the sharp contrast in temperatures between night and day. Here is the point: The nights are cool, and the hives do not become sufficiently warm for bees to do their best work until too late in the morning. Especially is this true when comb honey is the desired object.

The wax-workers can handle their material only when the temperature is sufficiently high to render the wax pliable. It is a case of no comb built, no honey stored, with bees in shade, and a cool spring season combined. The last season emphasized this very strongly. For the benefit of young apiarists who may possibly establish apiaries in a locality where the nights are cool, I would say, *place your hives in the sun*, in double rows, back to back, as suggested by Mr. Burr. But he must be able to control the shade to fit the conditions. Give it, if needed, and it will be needed if a Langstroth frame is used, or if the combs are new and tender.

The above is in explanation, rather than in criticism, of Mr. Burr's article, which is full of helpful suggestions. F. E. Bagnell.

Simi, Cal.

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DEAD OR FOUL BROOD IN THE HEIGHT OF A HONEY-FLOW.

I have run up against a trouble which may be serious. I am keeping only a few stands of bees. Yesterday, while looking over my bees, I found one colony which had three cells of foul brood, and I think the colony will swarm in about a week; then I am going to give them your starvation cure.

What is your experience in confining bees three or four days on a set of frames filled with full sheets of foundation? Will it leave the foundation in good condition to make comb?

Wellsboro, Ind. W. H. Sanders.

[It is our opinion that what you report is nothing worse than dead brood. During very hot weather, especially if the bees have been sent by express or freight, some of the brood dies because it is overheated or improperly nourished. It turns brown, and in some cases assumes a slightly ropy character. This would rather indicate foul brood, except that we find this condition in the height of the honey-flow when the weather is hot, whereas real foul brood generally disappears when honey is coming in freely. In your case, at least, we should say there was no disease of any sort, but would advise you to keep a close watch to see if it becomes any worse. If you look through the hive you will find in the course of a week that this dead brood will all disappear.

If you confine bees in hot weather for three or four days on foundation the probabilities are that the foundation will stretch and may melt down altogether, making a bad mess in the hive. The bees should not be confined in the hive unless they are kept in a cool place, say down cellar.—Ed.]

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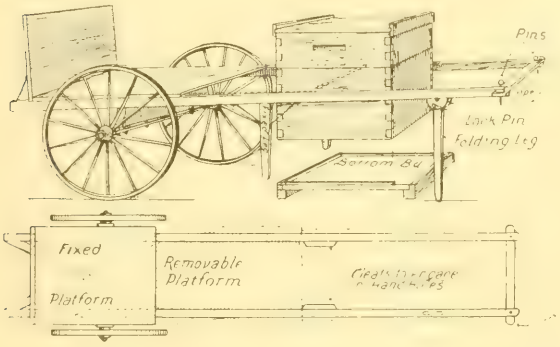
PROPOLIS FROM SWEET-GUM TREES.

I have noticed several theories as to where bees procure propolis. In this locality it is gathered almost exclusively from sweet-gum trees. I have 75 colonies, and care for many others, and have never discovered at any time any other substance than pure gum wax. W. C. Dailey.

Crothersville, Ind.

A HIVE-LIFTING WHEEL-CART.

Honey production having grown from retail to wholesale, hives, of necessity, need handling more rapidly and easily. As shown by your journal, honey-producers are trying to evolve a portable crane. Now, why multiply tools when they are already too numerous? The above suggested the idea given herewith. Every professional apiarist surely must always need a hand-cart of some sort. Then why not try to make it do more than one thing? By the plan shown in the illustration I think any one can modify the details to suit his needs; as, owing to hives being so various in many ways, one particular pattern would suit only one man. In a truck made as suggested, I would have the floor-boards of the truck nearest the front free—just to rest on the handles—and kept in place by cleats on the under side, either to come inside or outside of handles, so that when the truck is wanted to lift hives off the bottom-boards or to carry to another stand they can be removed; and by opening the front pull-bar the handles may be sprung open sufficiently to go easily each side of the hive; and when the pull-bar is put back in place and the pin put in, the hive can not slip or shift. The drop-leg shown will hold the hive up and leave both hands free, and two ends and sides clear to work at. As regards the drop-leg, make the joint so that the leg will be free to work only one way—back and forth; otherwise the weight of the hive will swing the truck round and let the hive down. I suggest a joint something like the hinge of a rule; and below the pin the leg swings by, have a hole right through the joint and leg to put a pin through; then the truck can not possibly move. Now, when you lift a hive by the truck you can, if you wish, move it sidewise, or back or forth, as needed; and in putting it back you can guide it home to $\frac{1}{16}$ inch. When the drop leg is lifted for ordinary work about the yard I would have short fixed legs to come, say, just back of where the back of the hive comes for lifting; and when the drop-leg is hooked up to the side-rails it is out of the road. With the loose floor-boards in place,



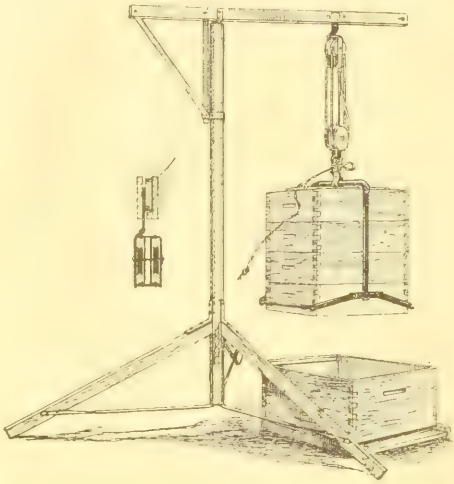

you have a handy cart for carrying supers and the many other things needed in a yard worked for bread and butter. With a pair of wheels and an axle a handy man would make it in a day, and have a tool that would make many a hard task pleasant and easy. JOHN BELL.

Greenhithe, Auckland, N. Z.

[The arrangement shown is very good, providing the ground is not uneven, and hives so placed that one can get around with the outfit. We are working on a modification, the lift being in front of a pair of wheels rather than in the rear. All these devices seem like a lot of machinery, and it is a question how far they can be used to advantage. We shall have more to say on this question at a later time.—ED.]

A NEW HIVE-LIFTER.

I would not bother with a hive-lifter for one super or for two or three eight-frame comb-honey supers; but when I have a good crop I have two, three, four, and sometimes five ten-frame supers on at once, and then is the time I expect a lifting-device to be of use.



The standard or upright part of my lifter is a 2½-inch boiler-tube 5 ft. 9 in. long. There are three oak legs, ⅝×3, by 4 ft. 6 in. One end each of these three strips is fastened to the upright pipe 18 inches from the lower end. The other end is connected to the lower end of the pipe by a light iron brace, making a triangle of each leg. The angle is such that the lower end of the upright is three or four inches above the ground. Three light iron braces about ten inches from the center connect the legs and hold them the right distance apart. The upper part of the lifter is a piece of barn-door track 3 ft. 9 in. long. It extends out 2 ft. 4 in. from the center, and is free to make a complete circle.

The tackle-block may move in toward the center or out to the end of the track; a bolt through the end of the track prevents it from running off. The end of the track has supported the weight of a 210-pound man.

This first machine weighs about 40 lbs. It is heavier than necessary. The proportions and details could be much improved, making a lighter machine; but just as it is, it is very easy to handle, as one can take a good hold with scarcely any stooping. It would be easier to pick up the

hive-lifter than to lift one ten-frame shallow extracting-super. My hives are in pairs. I can, therefore, handle two colonies with one move of the machine. With two or three supers on, it is hard work lifting to put on another or to get at the brood-nest. With the lifter I expect to lift as many as four at once, swing them to one side, manipulate the colony, and put on a fifth super if necessary. In taking off honey with escapes, I think it can be put right on to the wheelbarrow.

H. E. Greenwood.

Oshkosh, Wis., March 23.

[This lifter embodies some good principles. It represents a good deal of machinery, and probably could not be used to advantage except where there were more than two supers. We have been making some preliminary tests with devices of this sort, and find that the time taken to place them and get the standard vertical is considerable if the ground is uneven or the hives are arranged in groups. Still we are of the opinion that in the case of the "sky-scrapers" a device of this kind can be used to very good advantage, thus saving considerable strain on the back, and at the same time enable one to put an empty under the partly filled supers without doing any direct lifting himself.

It is our opinion that the three legs on the machine should not be attached to the upright standard rigidly. They should be more in the nature of a tripod with legs having a certain degree of adjustment, thus allowing one to make up for the uneven ground; for it is very important that the standard or upright be vertical, otherwise it will topple over when the load is put on the projecting arm.—Ed.]

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HOW TO DISINFECT HONEY FROM A COLONY AFFECTED WITH FOUL BROOD.

I have a number of colonies, I don't know how many, affected with foul brood; and if I shake them I shall have to wait till fall, and feed them on the fall flow. Would it be safe to shake them now and feed back the honey taken from them after heating or boiling it? Would it be safe to use partly drawn and filled section-supers from over-diseased colonies? J. G. Crisler.

Walton, Ky.

[You can feed back the honey, taking it from the hive that has had the disease, providing it has been boiled for 20 minutes, allowed to stand for two or three days, and boiled again for the same length of time. In the interval the germs undergo a state so that the second boiling takes effect and destroys any germ life that may exist. We would not advise you to put supers that have been taken off from diseased colonies on to healthy ones; but the honey from the diseased ones would be perfectly safe to use for the table or to sell; but be careful to place it where the bees will not get at it and so spread the disease by robbing.

When honey is coming in freely, don't shake the combs, as it will be spilled over the ground, on the hive, on tools, on clothing, and everywhere, At such times, brush with grass or weeds and then burn whatever you use as a brush. No honey should be spilled or daubed on tools from a foul-broody colony, as you might thereby spread the disease to other colonies.—Ed.]

DOES IT PAY TO KEEP OVER A QUEEN THAT IS POOR HER FIRST SEASON?

I notice some writers say that, if a queen fails to lay enough eggs in a poor season to keep up her colony, the next year (if a heavy flow comes on) she may turn out to be as prolific as any queen in the yard. I do not agree with this; for I have invariably found that, if a queen was no good in her first season as an egg-layer, she was of no account the next season; therefore, if I find that a young queen is practically worthless the first season it is her last one, for more bad honey failures come from no-account bees, caused by no-account queens, than all other sources of failure combined. Early in the spring one can estimate the good qualities of any queen, almost, by the hustle displayed. J. A. Bearden.

Harms, Tenn., June 1.

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HANDLING QUEENS WITH CLEAN FINGERS.

Doesn't it look reasonable and very important to have perfectly clean hands, so as to be free from any odors, etc.? Then rub the fingers and thumb over wax or comb before picking up and caging a queen and her attendant bees. Sense of smell is very keen with bees.

Hallowell, Me. E. P. Churchill.

[We doubt the advisability of smearing the hands with beeswax or combs, as that might introduce the odor of another hive. Better put nothing on them, and, when washing, avoid scented soaps.—Ed.]

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DOES SAGE YIELD HONEY IN IDAHO AND UTAH?

Does sage yield honey in Idaho and Utah? I saw miles of it there, but could not learn that bees get any honey from it. Fr. Holmes.

Hillman, Mich., May 14.

[Possibly some of our readers can reply to this question.—Ed.]

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Is it safe to introduce a queen in a hive where it has been queenless for some time?

Martinsburg, W. V. C. H. Mason.

[It is a little risky to introduce a queen, especially a valuable one, in a hive that has been queenless for some time. The colony may have laying workers or a virgin. In either case it would be practically impossible to introduce a fertile queen. Before attempting to introduce we would advise giving a frame of *unsealed young brood*; and if the bees build cells therefrom it would be safe to introduce, as the presence of the cells would indicate that the bees were without a queen.—Ed.]

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Is there honey in the second-crop clover?

Willink, N. Y. A. G. Sterling.

[Some honey is secured from a second crop of clover. It depends upon the season and somewhat upon the bees.—Ed.]

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## Convention Notices.

The Central Tennessee Bee-keepers' Association will meet at he rooms of the Nashville Board of Trade on Saturday, Aug. 8.

J. M. Buchanan, Sec'y.

# OUR HOMES

By A. I. Root

Therefore shall ye lay up these words in your heart and in your soul, and bind them for a sign upon your hand, that they may be as frontlets between your eyes. And ye shall teach them your children, speaking of them when thou sittest in thy house, and when thou walkest by the way, when thou liest down, and when thou risest up.—DEUT. 11:18, 19.

I hardly need remind you, friends, of the great work that the juvenile court is doing in this land of ours. Instead of punishing boys for their crimes and misdemeanors, this juvenile court is looking after the parents and others, to see how far the blame rests on some grown-up person instead of on the boys. I have told you something about Judge Lindsey, and how he has been punishing the saloon-keepers and others, and in various ways making bad boys good ones without shutting them up in prison and fining them; and I think we can all say, "May the Lord be praised for the better methods that are being instituted, not only in our great cities, but in the country also, for a way of leading boys out of iniquity and into righteousness by gentler means than the strong arm of the law."

Not ten minutes ago I was told that one of the boys in our employ had been helping himself to some Yellow Transparent apples that are just beginning to ripen close by our home. Now, this would ordinarily be considered a small matter; but just now apples of every sort are very scarce and expensive. We have only this one tree, and I have been watching it carefully in order to get the first ripe apples. You may remember that apples are my medicine. This boy's business is in the lumber-yard; but when he goes after the horse he uses, he goes pretty near the apple-tree. If there were only one boy it would be a small matter; but if all the hands in the lumber-yards scattered over our grounds should help themselves to our early apples there would not be enough to go around, let alone having enough for our own use. I met the boy soon afterward, and started to explain to him why we could not well spare those early apples; but as there were others standing around I hesitated. A boy's feelings are easily hurt, as I can well remember, even if I am almost seventy years old. I did not say any thing to him about it at all just then; but instead of that I hung up a board on the tree, in plain sight, saying, "Hands off."

With this preface I wish to tell you that I have just returned from a trip to our "cabin in the woods" in Northern Michigan. When I got ready to go up there just after the 4th of July, three boys in our neighborhood petitioned to go along and camp out in said cabin. I consented under certain conditions. Their mothers were to instruct them in the art of cooking so they could keep house and board themselves; and each one was to take along a few needed utensils.

We reached Traverse City in good health and spirits on the 7th of July. I had planned taking the boys up to the cabin on a gasoline-launch; but there had been a storm, and the waves were already throwing up white caps. A fishing-boat, however, had just brought in five tons of fish, and the managers of it said *they* would take us if we could wait until they unloaded—that is, if we would not get seasick from the rolling and tumbling. These boys, fourteen, fifteen, and sixteen years old respectively, clamored for the trip on the fishing-boat. They were sure *they* would not get seasick. Well, when we reached the dock, eight miles away, the boys declared it was the most delightful boat-ride they had ever had in their lives. Of course, they could not stand up without holding on to something; but they got up near the pilot, and he explained to them how he met each great wave, and told them stories of fishing adventures on the beautiful waters of Grand Traverse Bay. Sometimes the boat would actually jump from the top of one large wave to the next, and then it would come down and strike the water with a crash that seemed as if it would smash the boat in pieces; but it was built for just such business.

We started up the hill toward the cabin, with our valises and other luggage. About as soon as we struck solid land, however, I looked over the wire fence and saw great luscious strawberries in such abundance that I was sure the proprietor had some to spare. As they belonged to Mrs. Heimfurth, my nearest neighbor, I took the liberty of inviting the boys to refresh themselves, and we ate to our hearts' content. When I got to the house I took out some money to pay for our treat; but my good neighbor absolutely refused to take a copper. She said they were short of pickers, and they really had more berries than they could take care of.

In a little while we were up to the cabin—see picture on page 658, June 15th, 1905. It was the first time I had paid the dear old place a visit this year, and I eagerly scanned the premises to see how my stuff had prospered since the fall before. The first thing that caught my gaze was my eight different varieties of currants. The fruit was dead ripe, and some of the great clusters were up higher than my head; and, by the way, it seems to me I never saw currants anywhere so delicious as those in that fruit region of Northern Michigan; and the glittering red of the ripe fruit that had not been molested by birds or any sort of currant-worm, it seemed to me, was more enticing than any thing else one can well imagine. Then I glanced beyond the currant-bushes to the mulberries. Let me explain a little.

Some six or seven years ago, when ordering some peach-trees and other stuff I told the nurseryman to put in two of his very best improved mulberry-trees, but I said nothing about the price. When I found he had sent two trees at $1.50 each, I protested, and he finally cut the price down to a dollar. One of the trees almost died, and I was tempted to dig it up and throw it away, but I finally concluded to give it one more chance. For two years it put out only a very feeble growth; but now, however, it is a great tree with branches higher than my head. The other one made a prodigious growth, with branches which went away up in the air, and then down to the grass. One of my neighbors said it was what is called the "weeping" mulberry, and that it was worth nothing for fruit but only for ornament. Until this year it had been only a great mass of long trailing limbs, and I had decided that my dollar mulberry-trees were just a big swindle; but, lo and behold! on that July morning both trees were bending under their

loads of luscious fruit. And that was not all. The berries had been dead ripe, evidently, for some little time, and the fruit had dropped on the ground and almost covered it. One of the trees bore berries of a jet-black color, not as large as the ones we have in Florida, by considerable, but I do not know but they were just as delicious. The other tree, the weeping mulberry, was a surprise. The fruit was of three different colors—black, pink, and white; and the berries of all these colors seemed equally ripe and delicious. Why, I would not take ten dollars apiece for those two mulberry-trees, and yet I had been cherishing unkind thoughts all these years toward the man who sold them to me.

Of course, the boys made haste to appropriate their share of the fruit, even if they had just had a treat on strawberries. I think, while I am about it, I will finish up what I have to say about the fruit of that region right here.

The next day we walked over through the woods to a neighbor's house, that of Mr. Werner, a good farmer. He always has good crops of every thing, no matter what the weather is. On the side-hill close to his house were some of the finest-looking cherry-trees I ever saw in my life; and when we passed there the trees were literally black and red and yellow with their loads of the choicest and most luscious cherries I ever saw. The foliage on the trees was of a bright rich green that indicated perfect health. I went up to the house and asked permission for myself and boys to sample the cherries — offering, of course, to pay for them. The good lady said we were quite welcome to all we wished to eat.

I wish to stop right here to say that Mr. A. L. Hatch, away up in the northern part of Wisconsin, told me three years ago something about growing fruit. He said that wherever one can get plenty of healthy foliage he will get nice fruit sooner or later.

As I began to wonder at the great luxuriance of those cherries I looked at the ground beneath. It was a rich sandy loam. It probably had been improved by turning under clover or stable manure, or perhaps both. The boys all agreed with me that they had never tasted any cherries equal to those. As the trees were small, corn was planted between the trees, but not very close to the trees; and that corn, even away up there in the north, was about equal to any we have in Ohio at the same time. Of course, every thing is much earlier here in Ohio than there.

Perhaps I should explain that this visit was made just after we had eaten so many mulberries and strawberries. Later on we visited Mr. James Hilbert's cherry-orchard, containing over 400 trees. Before we got in sight we heard the laughter and voices of the pickers, for most of them were girls and women. About thirty were at work. While the cherry-trees did not all show the careful and thrifty appearance of those of Mr. Werner, the crops were literally wonderful. Owing to the recent heavy rains the fruit on some of the trees had become overripe; and Mrs. Hilbert pointed out a tree of Black Tartarians that she said they would not pick because a large part of the fruit was too ripe to bear shipping. She told the boys and myself that we were welcome to all we cared to eat or carry away from that tree. Well, now, I specially enjoy fruit that most people consider too ripe. It agrees with my digestion better. As we were two and a half miles from home (through the woods and over the hills) I told the boys I thought they could eat just as many of those fully ripe cherries as they chose, without endangering their health. I know I ate a tremendous lot of them, but not one of us four experienced any bad effect from them whatever. I was anxious to see if those young growing boys could bear a great quantity of ripe fruit just as I do when tramping through the woods over hills.

After we had satisfied ourselves with Black Tartarian cherries Mrs. Hilbert told us we must be sure to look through another cherry-orchard over the hill. Oh dear me! I do wish the readers of Gleanings could get a glimpse of that cherry-orchard. My good friend Hilbert had ordered all sorts of cherries in order to test them in his locality, and so there were black and white, yellow and red cherries, big cherries, mottled cherries, and cherries of every description; and as we went from one tree to another and tested one and then another, we were tempted to say every time that the last was the best. If you like a cherry that is rather tart, I would recommend the one they call the Dyehouse, especially as it is found in the Grand Traverse region. I bought six Dyehouse cherry-trees some years ago and planted them here in Medina; but we decided *here* they were rather inferior; and this emphasizes the importance of growing any kind of fruit in a locality where it thrives the best. The Grand Traverse region of Northern Michigan is emphatically *the* place for strawberries, currants, cherries, peaches, and (I think we can add) apples. Last year they had an enormous crop, but there was almost none throughout the rest of the United States, and they are expecting to have another pretty fair crop this year. Everybody grows strawberries in that region, especially of late; and carloads and carloads of strawberries, cherries, and other fruit are constantly being rushed to Chicago and other great cities.

Just now they are also having a wonderful crop of huckleberries. These latter grow wild, without any care or attention whatever; and the yield is so great that wagonloads of people come from miles around and camp out to gather huckleberries. Some of our neighbors near the cabin drove fifteen or twenty miles and brought home loads of berries. Carload after carload of *huckleberries* are now being shipped from various parts of Northern Michigan to the great cities; yet, so far as I can learn, no attempt whatever has been made to cultivate this luscious fruit. Indeed, I believe the greater part of it grows on land that is considered of no value otherwise, or at least is uncared for by anybody.

Now that we have finished the fruit I wish to say something about the "crop of *boys*" growing up in our country. The two younger boys of our crowd had never before been away from home. I do not know that they had ever been away from their parents over night. About the second day while we were busy at dinner (I think I shall have to digress enough to say that we had black bass for dinner, besides all the fruit I have mentioned) one of the boys stopped eating suddenly. I began to fear he was sick, and was going to

look for some extract of Jamaica ginger. He admitted he was sick, but could not explain just *where* the pain was located. Pretty soon the tears were running down his cheeks, and he finally reluctantly confessed that he was *homesick*. A little later another one was homesick. Then I talked and reasoned with them. I told them about how I had been homesick, and how I got over it. When my arguments seemed unavailing, I told them I could get them all back home to their parents in less than twenty-four hours, if they insisted on it. "But," said I, "boys, I can tell you from my own experience that, if I get you back home now, when you come to think it over you will be more homesick to get back to the cabin in the woods than you are now to get back to see your fathers and mothers."

When prayer-meeting night came at that little church over the hills, that I have often told you about, I persuaded them all to go with me a mile up and down hill through the woods to that pretty little meeting-house. Of course, I had to talk to the people, as I always do when I get around in that neighborhood. In my talk I spoke about the homesick boys. I said it rejoiced my heart to see boys who love father and mother so much that they really consider home the dearest spot on earth. Then I told them about Mrs. Root being sick down in Florida; and I asked the friends to shake hands with the boys and give them to understand that there were good kind lovable people away up in Northern Michigan as well as down in Ohio. After prayer-meeting one of the boys said, "Why, grandpa, I believe that was about the best prayer-meeting I ever attended in my life," and I guess the others thought so too, for there was no more homesickness after that. Now, friends, I am giving you a good rational remedy for homesickness if you ever happen to experience it. Go to prayer-meeting. There is something especially inspiring about that little church, the Sunday-school, its Endeavor society, prayer-meeting, and its preaching services. Ever since the revival I told you about up there, there has been almost constantly something going on to improve it. It has been neatly papered recently, and carpeted. A very nice furnace warms it up in winter, and on this last 4th of July several of the boys and men got together and made a cement platform in front of the door. The planks had been getting old and rotten. I told them in my talk that such work was laying up treasures in heaven, where moth and rust do not corrupt, and where thieves do not break through and steal; and among all the good investments God has permitted me to make, dear friends, I do not know of any other one that gives me more pleasure when I come to think of it than what I have invested in the Bingham church away off there among the hills.

When I first went into that community, about eight years ago, the church and Sunday-school were pretty badly run down; but the saloons at Bingham were doing a big business. Saloons and Sunday-schools can not both well prosper in the same neighborhood. Since the revival I have told you about in the little church over among the hills, the saloon business has gradually gone down; and on this visit I was rejoiced to hear that the saloon had finally given up business entirely. It died a natural death for want of patronage. And this reminds me that I told the superintendent of the Anti-saloon League for the State of Michigan, something like a year ago, that I would give $25.00 to help inaugurate some temperance work in the neighborhood of our Sunday-school. Now, I do not know how much that did with closing up that saloon; but my impression is that God in his gracious goodness took the matter in hand before the League got around to it, and through the influence of that little church and Sunday-school the business that has wrecked so many homes in years past died out of itself without the aid of the League. Of course, I paid them the $25.00 all the same. May God be praised for *such* victories over intemperance.

The plan was that, after I left the cabin and went back home, the boys should stay and camp out a week or two as they chose. As other boys may be interested in a like camping-out at some of the North Michigan health resorts I think some of you may care especially in regard to the expense of such a trip. The round trip from Toledo to Traverse City was $7.50. I told the boys that 25 cents a day each for provisions ought to cover the cost. Butter, milk, and eggs are cheaper there than here in Ohio, and one can get them at almost any farmhouse. The neighbors will usually furnish bread also at a reasonable price. Well, at the time we figured up as I came away, the whole expense was only *21 cents a day each*; and we indulged in some luxuries also that might easily have been cut out. At first we commenced by cooking elaborate meals—ham and eggs, potatoes, postum cereal, etc.; but after many of their tramps through the woods or down to the bay they came back too tired to do any cooking; and so they adopted a *menu* consisting of cereals or shredded biscuit, and milk, and in a little time all three of the boys declared they felt better, and their strength held out better, with just these wheat preparations and milk than with a cooked meal.

Now, this testimony was worth lots to me because it verified T. B. Terry's teachings concerning uncooked food. These boys discovered, too, that it was ever so much less labor to do up the dishes when each one had only a bowl of milk with cereals to go with it. I preferred the Pettijohn rolled wheat uncooked, but the boys seemed to prefer shredded wheat biscuit, toasted cornflakes, or something of that sort. Many of the staple grains with milk, and occasionally an egg apiece, will surely keep the average person in better health than what is usually termed a "good square meal." We did not go to the trouble of putting fruits on the table, because they were so abundant taken right off from the trees or bushes, and in the latter way we avoided the great quantity of cane sugar that is generally served with fruits on the table.

I am getting several letters daily in regard to this matter of diet and health. Now, just try it, friends, and see if you do not feel better and happier, besides saving a great lot of useless work in getting up these expensive articles of diet. Most of you can live without any meat if you choose by using milk and eggs as I have indicated. Do not forget plenty of good ripe fruit. If you say you can not afford to go into the markets and buy it, then get a little piece of land and *grow* it yourself. If will cost you less than

to buy medicines at the drugstore as you have been doing; and I am sure it will be more pleasing in the sight of God.

After I came away and left those boys alone I was almost homesick for their companionship once more. Their daily talks and discussions had endeared them to me in a way that I shall never forget, I am sure. Of course, we read the Bible every day and had talks in regard to the Sunday-school lesson and kindred topics; and when I took my leave and reminded them that as they were, at least some if not all, members of the Endeavor society, they should remember that iron-clad pledge, to read at least some part of the Bible every day, and they promised me that they would do so. If they do this, and even if there are no fathers or mothers around, or old people to look after them, I feel that the great Father above will keep an eye on them; and I am sure it is a great thing for boys in their teens, especially if they have been brought up carefully in their homes, to try camping out in the woods, doing their own cooking, keeping an account of their finances, and planning on a small scale to be men, and take their places soon as men in this world of ours.

In a recent issue of the *Sunday School Times* we are told of a German father who set his son up in business when the boy was quite young. The son made a failure, but the father did not seem to be much troubled about it. He said he wanted to see how the boy would manage *after* the father was dead and gone. Therefore he decided to let the boy make a test of it before that sad event came to pass. The next time the boy went into business he made a success of it and became a good business man. His early failure taught him some lessons he could not have learned otherwise. It is also an excellent thing to let every boy have a little practical experience in the way of cooking his own meals, keeping house, and learn the consequences of letting every thing drop where he used it last. May God in his great mercy not only be with those three boys away off there in the woods, but with *all* the boys and girls growing up in this land of ours.

# POULTRY DEPARTMENT

### KEEPING HENS WITHOUT MALES—SOMETHING FURTHER IN REGARD TO THE MATTER.

*Mr. Root:*—I can not refrain from taking you to task for your remarks on page 837 relative to hens without males. I am surprised to think that a person of your intelligence should think for one moment that hens under such conditions could be happy. "Male and female created he them;" and had you observed them closely under such conditions I think you would agree with me that it is the next thing to, if not quite, cruelty. I shouldn't even think you would need to observe them to know that it would be so. "Doth not reason itself teach you" that animated creation can not be happy long at a time unless both sexes are present? Try it yourself.

Of course, I think folks many times keep too many males; but, "for the sake of humanity, if for no other reason," don't encourage such nonsense if not cruelty.

I enjoy nearly all of your writings, as those of no other man, and hope you may live 50 years yet to give us the benefit of your words; but I think you wrote that without consulting Mrs. R.

Cincinnatus, N. Y., July 14. EMMET B. KIBBE.

My good friend, I own up that I took very much the view you did in regard to the matter, and I have always maintained that the happy hen is the one that lays the egg; and therefore I was greatly surprised to see the statement from the Geneva station, that hens without males will lay more eggs. Your *theory* is all very good; but if we get more eggs by keeping pullets by themselves, I think we shall have to sacrifice sentiment to plain facts. I *did* consult with Mrs. Root, but her remarks were mostly concerning the surplus of males that are so often allowed in flocks of chickens on the farm and perhaps in country villages. Where a lot of males, especially a lot of young cockerels, are allowed to annoy the hens, the "cruelty" comes on the other side of your argument. I have been carefully scanning the poultry-journals to see what their experienced men have to say in regard to the matter, and I am surprised to find so little touching on a matter of such exceeding importance, not only to poultry-keepers but to consumers of eggs. But I have been rejoiced to find the following in the *Rural New-Yorker* for July 4—from one of the very best authorities. See what they say about it:

### MAPES, THE HEN-MAN, AGAIN; "GERMLESS EGGS."

I see on page 470 in "Brevities," that Mr. Mapes is selling guaranteed "germless eggs." As I am in the poultry-business I should like Mr. Mapes to tell us in full how it is done.

Connecticut. D. W. M.

It is a wonder to me that the trade has not sought for "germless eggs," backed by the guarantee of a responsible party, long before this. Most people in this part of the world want animal food in some form as part of their bill of fare, rather than an exclusively vegetable diet. Of all the forms of animal matter used as human food, an egg is best calculated for transportation to distant markets, and can be successfully kept in good condition easier than flesh, fish, or milk. Nature has provided in an egg all the elements of matter needed to grow and sustain the life of a chick for three weeks or more, thus making a complete food of it. The only other example of a complete food which we find in nature is milk. While milk is easily susceptible to all sorts of bacteria and other forms of decay as soon as drawn, an egg is done up in a neat package inclosed in a case that is almost impervious to air and water, and then surrounded by a protecting calcarious shell or case. In the case of a germless egg, this package of animal food will keep in good condition for eating for weeks and months in ordinary surroundings, either summer or winter. If, however, at a certain period in the formation of the egg it is fertilized, we have an entirely different proposition so far as preserving it in good condition for eating is concerned. It now only awaits the application of a certain amount of heat for this germ of life to begin to develop into the chick for which nature has provided this package of food. The necessary heat may come from the bodies of broody hens sitting on the nest, from an incubator, from the sun, or even from fermenting manure or other substances. It takes but a short exposure to the necessary heat for development sufficient to be discerned with the naked eyes, even without breaking the shell. Remove the source of heat after development has once begun, and death results within the shell; and instead of an appetizing package of food we have what might properly be called a coffin.

In view of these facts, is it any wonder that a germless egg is more to be desired than a fertile egg when looking for table supplies?

A hen will lay the same number of eggs, regardless of whether there are males in the flock or not. Just at what period in the development of the egg the germ of life is enclosed, is not so well known; but for all practical purposes we may conclude that two weeks after the males are removed from the flock the eggs laid will be germless. Ten days after I removed the rooster from my "hen-barn" I placed four eggs in an incubator, and one of the four proved to be fertile. About 95 per cent had previously been fertile. At present there is no known way of determining whether or not an egg is fertile, short of applying sufficient heat to start the germ into life, hence the consumer who buys germless eggs must depend largely upon the honesty of the seller. This seems to present great possibilities for building up a reputation, and placing a little bit of "character" into the eggs as well as the barrels of apples we place upon the market. The most approved style of package at present seems to be small boxes or "cartons" holding one dozen each. These are sealed, and the guarantee printed on the box or seal. In view of the chances which the ordinary grocer's egg runs, either from being left in the nest several days under a broody hen, or sitting about a hot grocery, or in the freight car moving slowly to market, or standing upon some siding switch, to say nothing about the subsequent

months in cold storage, it is a wonder that so many eggs reach consumers' tables in edible condition.

It seems that there are three if not more very important considerations in this matter. First, we get more eggs. Second, according to Mapes we get *better* eggs, or eggs that will keep fresh and in good order ever so much longer. Third (and this last argument I do not see mentioned at all), if you have some high-priced stock, and have a surplus of eggs, you do not want other folks following you to the grocery and buying eggs to set under a hen. To avoid all of this, have your choice stock in pens. We are told on pretty good authority that we get more eggs in confinement in a yard than where the fowls have unlimited range. These eggs from your choice stock you sell to neighbors or anybody else at a proper price. The eggs from the rest of your flock that you sell in the market for food are sold at a slight advance because they are fresh and "germless," and the label on each box warns the public that they are *better* for table use, but entirely *unfit* to set, because they would not hatch any way. Then when somebody comes to you, and wants eggs, you ask him whether he wants table eggs at 30 or 35 cents a dozen or eggs for hatching at, say, $1.00 a setting.

Just one more point: As a proof that eggs will keep a long while in fair condition when germless, even during hot weather, I may mention that I have boiled eggs for chickens, taken right from the incubator, and they looked so good and wholesome that I tasted the yolk several times, and could see nothing wrong about it. In the hot climate of Arizona, where they have a temperature of over 100 degrees for days at a time, eggs have actually hatched out in the stores where they were offered for sale. Other eggs that were germless, kept in the same temperature, were fit for cooking even after they had been kept three or four weeks. Does not this seem to indicate that eggs that can not be used in a short time after they are laid *should be* germless so far as we are able to manage it?

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GROWING PARTRIDGES INSTEAD OF CHICKENS, ETC.

After I left the boys, as I have mentioned in another column, I started with my valise over the hills through the woods to the station. I had enjoyed myself so much during the previous week that I was wondering if I could not invent some excuse for staying up in that locality a considerable part of each summer. Let me digress a little.

Just as soon as I got back to the old cabin I put the hammock into that little clump of maple-trees on the hill that overlooks the bay; and just before dinner (the boys cooked the dinner themselves, and it was a nice one too) I lay down in the hammock, as I have mentioned several times before, for a refreshing nap. Oh how I *did* enjoy it! It was a hot July day; but the breeze from the bay rustled the leaves over my head and gave a delicious coolness to my brow as I lapsed into unconsciousness. When I awoke, twenty or thirty minutes later, there was all through my being a sense of cleanness and purity that I have never found in any other locality. Whenever I sleep in a close room my mouth tastes bad when I awake; but up there in that pure air every thing seems to be pure and sweet and wholesome, and it produces an exhilaration that I never get anywhere else. Perhaps I am exaggerating the advantages of that climate. To tell the truth, I have not *tried* a hammock in the open air, either in Ohio or down in Florida—that is, to any great extent. Well, now, let us get back to that trip through the woods over to the station.

I was considering what I could do up in those wild woods to keep busy and pay expenses during the summer time. As I rushed along I almost ran over a partridge. I have told you before that they are all through my woods up there; and as nobody is allowed to shoot them at this season of the year they get to be quite tame. It seems as if my foot almost struck that mother partridge, for such she was. She went rolling and tumbling out of the way, making a plaintive noise as if she were hurt. I caught on at once; and by searching around in the grass where she first started I found a whole brood of little partridges, just feathered out enough to be handsome. The minute I saw them and took a look at the plump handsome mother, still tumbling around as if she were hurt so she could hardly move, I said to myself—no, I guess I said it out loud, for I was off alone in the woods — "Dear me! why can't I come up here and raise partridges with my Cyphers' incubator just as easily as I raise Leghorn chickens down in Florida?"

As I hurried over to the train I began figuring what nice plump young partridges would bring in the market compared with Leghorn chickens. Perhaps they would not stand confinement; but then Bro. McClave, of New London, O., raises wild *ducks* right along, and lets them fly wherever they wish to go. They always come home at night to roost and for their feed.

When I got over to Manistee I told my brother-in-law, Mr. C. D. Gardner, about my project; but he at once "poured cold water" by the pailful on my speculation. Said he:

"Why, Mr. Root, you can very likely grow your partridges all right, and with comparatively no trouble; but the minute you undertake to sell a partridge in the market you will be arrested, fined, and perhaps imprisoned. A man right here in Manistee, raising brook trout on his own farm, with water from his own spring, was making money hand over fist; but the game laws interfered. It is against the law here to sell trout or black bass. He took the matter into the courts, and fought them until it cost pretty nearly every dollar he was worth. But he had to give it up."

Now, will somebody who is posted on this matter tell me if this can be true? Is it possible that there are laws which forbid the farmer from growing trout or partridges on his own premises and selling them for what they are worth in the market? Of course, I understand the importance of preventing sportsmen from depopulating our woods and inland lakes of fowl and fish; but he who grows thousands of partridges and fish where none grew before, or at least in limited numbers, is, it seems to me, like the man who makes two blades of grass grow where only one grew before. A plump partridge, as everybody knows, is about the finest table delicacy the world affords; and, if I remember correctly, my father and mother,

when they were early settlers, used partridge eggs in place of hens' eggs when they found a big nestful in the woods. Can any of the friends furnish me any literature in regard to the domestication of our American partridges?

Now, for fear you will say this article doesn't belong in the poultry department I wish to quote a little more from that sharp keen business man, Mr. Gardner. I was recommending to his wife (my sister) that she get some chickens so as to keep her outdoors. By the way, she has so far recovered from her malady that she walks all over town at a brisk walk, and stays out of doors a great part of every day. Well, her good husband said something like this:

"The chicken business does not pay. Sooner or later they eat their heads off. I have seen it tried over and over again all my life. Even the men who raise fancy poultry and get big prices do not make it pay in the long run."

When both my sister and I entered a protest he added:

"Oh, yes! there is a man over south a couple of miles who raises eggs for market. He has some little boxes that will hold just a dozen, and every box has a rubber stamp on it telling the day the eggs were laid. He gets an extra price for his fresh eggs, and somebody said he was doing pretty well at it, but I do not know how long he will keep it up."

I know there is a lot of truth in what Mr. G. said. It is so around Medina, and it is so almost everywhere; but let me give you a plan by which you can *prove* that poultry will pay. Get half a dozen fowls to start with, and then grow chickens. Down in Florida, or even here in the North in the summer time, you do not need to invest any thing more except for feed. See what you can do by way of increase in just three or four months. In Florida, with a little incubator I increased from five to nearly a hundred in one winter. Here in Medina, during the past three months, with the aid of sitting hens (no incubator) I have hatched nearly one hundred chickens from the eggs laid by three choice pullets. The expense of feeding, especially where the fowls have a large range, is but a very small item compared with the value of the stock. When it comes cold weather, so that something must be invested in the way of winter protection, instead of undertaking to winter them suppose you just sell out for what they will bring during October and November. Very likely you will not make very great wages; but if you are obliged to be outdoors on account of health, as I am, I think you will find it quite a profitable investment all around. It is an easy matter to keep an account of what your stock costs, and the feed during the summer; and the fun of seeing the chickens hatch out is worth to *me* a "whole lot."

---

### THE DECLINE OF BUCKWHEAT.

Probably few bee-keepers are aware that there has been a serious decline in the production of buckwheat as a farm crop in America. In 1866, which is the furthest back we can go for an authentic record, the area of land devoted to buckwheat was 1,045,000 acres, and the yield was 22,791,000 bushels. The value of the crop for that year was $15,413,000. At present the area in buckwheat is about 750,000 acres, with a yield of 14,500,000 bushels, valued at $8,000,000. In former times Pennsylvania led the way in buckwheat production; but now she holds a secondary position to New York, which at present holds the banner.

Possibly adulteration had considerable to do with the fall of buckwheat in popular esteem; for until the passage of the national pure-food law it was generally mixed with any kind of dark flour which happened to be cheaper. Some people refused to buy the mixed goods; and if others did purchase the stuff, what they got was only half buckwheat at the most.

The demand for buckwheat flour is better than it used to be, and there is a big field for the grain in connection with poultry. For the latter it is an ideal feed, and has the merit of being easily grown. The probabilities are that buckwheat will rise to its former position. Bee-keepers could do much to help it to attain a higher position among the crops. There is plenty of suitable land for buckwheat in New England, New York, and Pennsylvania, and it is a pity that more of it is not grown. W. K. M.

---

# TEMPERANCE

### A MINISTER WHO IS NOT AFRAID OF BECOMING UNPOPULAR BY SPEAKING THE TRUTH.

The following, by the Rev. U. S. Tabor, we clip from the *Manatee River Journal*, Florida, for May 22. Perhaps I should explain that the temperance people of Manatee Co. have lately organized what they call The Patriotic League, and this clipping is in regard to it:

> You can generally count that the sheriff who goes around with the smell of liquor on his breath will not disturb the peace of anybody but a kinky-headed negro who is selling it. If he goes to search a drugstore he will wire the boys, "Look out! I'm coming! Get all the booze hid out."
>
> This is a local-option county. More than once it has shown that a majority of her people did not want intoxicating liquors sold within her borders. Now, why have we had 29 persons with license to sell liquors in the county? Because the laws have not been enforced. And why have the laws not been enforced? Because the people of the county have not demanded their enforcement. And why have the temperance people not demanded their enforcement? Because there was no one to speak except private individuals, and they felt that their speaking would not produce results.
>
> But suppose that all the people in this county were organized; and suppose that the president of that organization, representing hundreds of voters, the best men in the county, and hundreds of women—the good and true in all our churches and out of our churches—should demand of the officers of this county (in the name of the organization) that the laws be rigidly enforced, and assure that officer that these hundreds of the best people were back of him, what would be the result?
>
> There would not be a blind tiger left to tell the tale; the whisky crowd would quit poking fun at us and saying, "Prohibition doesn't prohibit." If it does not, it is your fault and mine. Are you willing to act the part of a man, a patriot, and, as far as your powers go, with love to all and malice to none, stand as a soldier by the side of your neighbor for the enforcement of law? If so, join The Patriotic League of Manatee County.

My good friend, have *you* such a minister in your locality to stand up bravely for godliness and righteousness? Perhaps you have if some good man like yourself would show him this article and tell him you are ready to stand by him and back him up in the glorious work of putting down sin and Satan and holding up Christ Jesus.

WHEN IN DETROIT
STOP AT
HOTEL TULLER
New and Absolutely Fireproof
Corner Adams Ave. and Park St.

In Center of the Theater, Shopping, and Business District
A LA CARTE CAFE
Newest and Finest Grill Room in the City
Club breakfast,40c up. Lunch,50c. Table de hote dinners,75c
Music from 6 P. M. to 12 P. M.
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Grow Mushrooms
For Big and Quick Profits
Or For Your Own Use.
Ten years' experience enables me to give practical instructions worth many dollars to you without interfering with regular occupation, no matter where located. Send for Free Book and particulars how to start, etc.
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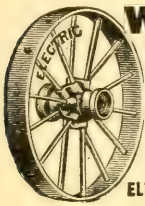


WAGON SENSE
Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an
Electric Handy Wagon.
It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.
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DON'T WORRY OVER MONEY MATTERS but send for sample copy of Inland Poultry Journal and let us tell you how to make money out of poultry. Two full pages in colors, reproductions from oil paintings that cost us $1000.00. They are FREE.
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THE "BEST" LIGHT
A portable, pure white, steady, safe light. Brighter than electricity or acetylene. 100 candle power. No grease, dirt nor odor. Lighted instantly. Costs 2 cts. per week. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog. Do not delay.
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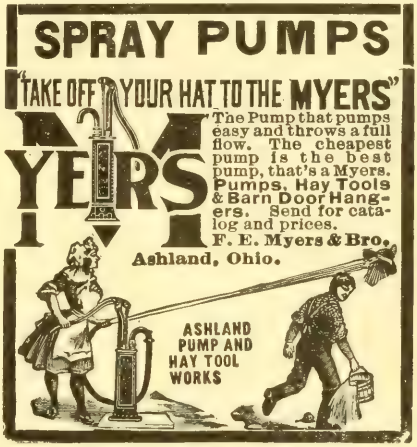
MAKES AND BURNS ITS OWN GAS

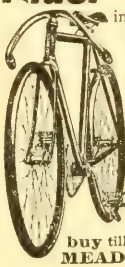
Metal Hame Fastener
Does away with straps. Every farmer and teamster delighted. Outwear harness. Fasten instantly with gloves on. AGENTS 200% profit. Indispensible when once used. FERRY'S HANDY HAME FASTENERS bonanza for agents. Many sell dozen an hour. Sample 25c, doz. $1.10. Circular and wholesale price free.
COONER & FORTUNE CO. Dept. 18 INDIANAPOLIS, IND

SPRAY PUMPS
"TAKE OFF YOUR HAT TO THE MYERS"




"The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.
F. E. Myers & Bro.
Ashland, Ohio.

Rider Agents Wanted



in each town to ride and exhibit sample 1909 model. *Write for Special Offer.* Finest Guaranteed 1909 MODELS $10 to $27
Coaster-brakes and Puncture-proof tires.
1906 & 1907 Models all of best makes $7 to $12
500 Second-Hand Wheels *All makes and models, good as new* $3 to $8
Great Factory Clearing Sale.
We Ship On Approval *without a cent deposit, pay the freight* and allow TEN DAYS' FREE TRIAL.
Tires, coaster-brakes, parts, repairs and sundries, half usual prices. Do not buy till you get our catalogs and offer. *Write now.*
MEAD CYCLE CO., Dept. S113, Chicago

Bee-keepers' Supplies Sold
At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. W. D. SOPER, Jackson, Mich.

CUTS USED IN THIS MAGAZINE ARE FROM
THE MUGLER ENGRAVING CO.
MUGLER BLD'G. CLEVELAND, OHIO.

## "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

*Cash or goods for wax at all times.*

**George E. Hilton**
**Fremont, . . Michigan**

# HONEY-JARS
from
## New York City

We consider the No. 25 jar with solid metal cap and waxed liner the best jar made for honey.

Gross crates . . . . $5.00; 5 gross, $4.75 per gross.
12-oz. screw-cap jar . . 4.50; 2 gross, 8.25 per gross.
1-lb. sq. jar with cork . 5.00;
Italian queen . . . . 1.00. Catalog free.

Apiaries, Glen Cove, L. I.
**I. J. STRINGHAM 105 Park Place, New York**

**There's NO RED TAPE**
**when You Buy from PEIRCE**

Your order receives *personal* and *immediate* attention, and shipment from a city with *unsurpassed shipping facilities. Several carloads of Root's Goods* handled this season. Catalog free.

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## ROOT'S BEE-SUPPLIES
**AT SPRINGFIELD, MASS.**

New Goods. Free Catalog. 'Phone.
**F. R. DANIELS, 117 FLORENCE ST.**

FOR SALE.—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**
## ROOT'S GOODS

NO CHARGE FOR DRAYAGE.

**John N. Prothero**
**Dubois, .. Pennsylvania**

**1884 1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . . Root's Goods in Stock.

**J. M. Jenkins**
**Wetumpka, : : Alabama**

# Dittmer's
## COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

**Dittmer's Process is Dittmer's**

It has built its reputation and established its merits on its own foundation and its own name.

**We make a specialty of working wax into foundation for cash.**

Write for free catalog, and prices on full line of supplies.

**GUS. DITTMER CO., Augusta, Wis.**

# THE BEE-KEEPERS'

# Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND
**AN IMMENSE STOCK OF HONEY-CANS**
(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

| | |
|---|---|
| 12-in. 4-row shipping-cases with 3-in. glass | $17.00 per 100 |
| 9¼-in. 4-row shipping-cases with 3-in. glass | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass | 9.35 per 100 |
| 6¼-in. 3-row shipping-cases with 3-in. glass | 9.80 per 100 |
| 7⅛-in. 3 row shipping-cases with 3-in. glass | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 27 cts. cash; in trade, 30 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**UDO & MAX TOEPPERWEIN**
1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

# HIGHLAND FARM QUEENS

are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey, Highland Farm queens will produce them. We are now sending queens of this celebrated strain by return mail at the following prices:

| | 1 | 6 | 12 |
|---|---|---|---|
| Select untested queens . . . | $ .75 | $4.00 | $ 7.50 |
| Tested queens . . . . . | 1.25 | 6.00 | 10.00 |
| Select tested queens . . . . | 1.50 | 8.00 | 15.00 |

Safe delivery and satisfaction guaranteed. Send for queen circular—it tells why Highland Farm queens are superior to others.
Address all orders to

**J. E. HAND, BIRMINGHAM, ERIE COUNTY, OHIO.**

GRAY **CAUCASIAN** QUEENS.

*1905-1906 Queen-breeder in Apiary of Dept. of Agriculture, Washington, D. C.*

During that time Caucasians were being distributed by the department so that I handled many of the imported queens and bred much of the stock which other breeders are using, and am in a position to furnish the best of Caucasian queens. They are hardy and prolific, but not great swarmers; are builders of white combs, great honey-gatherers, and their extreme gentleness has won for them the name "STINGLESS." Queens are reared from imported mother of gray type. Have three-band or leather-colored Italians also. They are hustlers.

PRICE LIST AFTER JULY 1.

GRAY CAUCASIANS.
Untested queens.....1, $ .75; 6, $4.25; 12, $ 8.00.
Select untested queens... 1.00 5.50 10.00.

THREE-BAND ITALIANS.
Untested queens.....1, $ .60; 6, $3.35; 12, $6.50.
Select untested queens... .75 4.00 7.50.

SAFE ARRIVAL AND ENTIRE SATISFACTION GUARANTEED.

*No bee disease* ever in this section. Descriptive circular and testimonials free.

**LESLIE MARTIN, :: Birdcroft Apiaries, :: LEBANON, TENNESSEE.**

# ITALIAN QUEENS

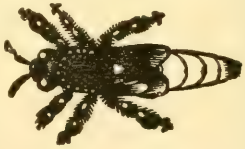
And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens . . . . . | $ 75 | $4 00 | $ 7 00 |
| Tested queens . . . . . | 1 00 | 5 00 | 9 00 |
| Select tested queens . . . . . | 1 50 | 8 00 | 15 00 |
| Breeders . . . . . | 3 00 | 15 00 | |
| Straight five-band breeders . . . | 5 00 | | |
| Two-comb nuclei, no queen . . . | 2 25 | 12 00 | 22 00 |
| Three-comb nuclei, no queen . . | 3 25 | 18 00 | 32 00 |
| Full colonies on eight frames . . | 5 00 | 25 00 | |

**All queens now go by return mail.** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

**QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.**

# ITALIAN QUEENS



Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J. L. FAJEN, . ALMA, MO.**

## NOT CHEAP QUEENS, BUT QUEENS CHEAP

**500 Best Strain Italian Queens Ready to Mail March 1st.**
Untested queens in lots as follows: 1, 75 cts.; 6, $4.20; 12, $ 7.80.
Tested queens in lots as follows: 1, $1.00; 6, $5.70; 12, $10.80.
Breeders' queens in lots as follows: 1, $5.00; 3, $12.00.
Nuclei with unt'd queen: 1-fr., $1.75; 2-fr., $2.25; full colonies, $4.75.
Nuclei with tested queen: 1-fr., $2; 2-fr, $2.50; full colonies, $5.
Also dealer in bee-keepers' supplies. Root's goods. Ask for cat'g.

**W. J. LITTLEFIELD, LITTLE ROCK ARK.**

## PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable; guarantee safe delivery and fair treatment. Untested, 75 cts.; tested, $1.00.

**New Century Queen-rearing Co., Bercair, Tex. John W. Pharr, Prop.**

## Golden Italian Queens, 75c

**Six for $4 00.**

Mailed promptly. Safe arrival and satisfaction guaranteed. Circular.

**J. B. CASE, . . . . Port Orange, Fla.**

## Westwood Red-clover Queens

Are the bees that got the honey in 1907.
Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

## QUEENS of MOORE'S STRAIN OF ITALIANS

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

PRICES: Untested queens, $1.00 each; six, $5.00; doz., $9.00. Select untested, $1.25 each; six, $6.00; doz., $11. Select tested, $2.00. Extra select tested, $3.00. Breeders, $5.00 to $10.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

**J. P. Moore, queen-breeder, Rt. 1, Morgan, Ky.**

## ITALIAN QUEENS

Bred from best stock to be had in the country, and by best methods, insuring beautiful, vigorous, long-lived queens. Prices for 1908:

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $ 5.00 | $ 9.00 |
| Tested | 1.50 | 8.00 | 15.00 |
| Select tested | 2.00 | 10.00 | 14.00 |
| Breeder | 5.00 | | |
| Two-frame nucleus | 2.25 | 12.00 | 22.00 |
| Three-frame nucleus | 2.75 | 15.00 | 28.00 |
| Full colony on eight frames | 5.00 | 25.00 | |

Add queen wanted to above.

I shall offer no Caucasians for sale this season.

**E. M. GRAVES, Ioamosa, San Bernardino Co., Cal.**

**W. H. Laws** says that, while his trade is very satisfactory, and about as large as he can handle, yet he does not want you who are new to him to forget that the very best of honey gatherers and a square deal is what you will always get when you buy Laws queens.

You should try his strain of Red-clover Long-tongue Italians, one firm alone having bought over 3000 of the Laws queens in the past six years; and more than half the queens sold this season are sent to customers who have bought in former years. A long string of testimonials testify to their merits, and you will make no mistake in buying Laws queens.

Single queens, $1.00; 6 for $5.00. Some very fine breeding queens on hand. Safe delivery and satisfaction guaranteed at $5.00 each. Address

**W. H. LAWS, Beeville, Bee Co., Texas.**

## ITALIAN QUEENS BY RETURN MAIL OR MONEY REFUNDED

Warranted, 75 cents each, six for $4.00; tested, $1.50 each. Circular free.

**D. J. BLOCHER PEARL CITY, ILLINOIS**

## GOLDENS, 10c.

Send 10 cts. (silver) for cage of living bees, **HARDY GOLDENS,** and examine before ordering, if you care to see the most beautiful race on earth. **C Oscar Fluharty, Sandusky, W.Va.**

**GOLDEN-ALL-OVER and RED-CLOVER**

## ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $5.00 | $9 00 |
| Select untested | 1 25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.

Positively all orders filled in rotation.

**Wm. A. Shuff, 4426 Osage Ave., Philadelphia, Pa**

**Long-tongued**

## Red-clover Queens

**Bred by their Originator**

Do you want to get some specimen queens of the world-famous red-clover stock of Italian bees? Then buy from me, because I am the originator, and surely ought to know how to breed them in their purity. When you get them from me you know you have the real strain. For years I have devoted time and skill to this stock, trying to reach perfection. I can submit many splendid testimonials in favor of this stock to show my work has not been in vain. Try them, and YOU will be pleased also. I endeavor to please the practical man looking for definite results in dollars and cents. Many years' experience as head apiarist of The A. I. Root Co. enables me to fill the most exacting order with complete satisfaction to the purchaser Let me show you how well I can please you.

**Prices**

| | | |
|---|---|---|
| Untested queen | June to October, | $1 00 |
| Select untested queen | " | 1 25 |
| Tested queen | " | 2 00 |
| Select tested queen | " | 3 00 |
| Breeding queen | " | 5 00 |
| Select breeding queens | " | 7 50 |
| Extra select " 1 yr. old | " | 10 00 |

**F. J. Wardell**

**Uhrichsville, Ohio, U. S. A.**

## 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

## QUEENS

of the Robey strain of three-banded Italians during the season of 1908. Warranted queens, 75 cts. each; $4.25 per six; $8.00 per doz. Tested queens, $1.00 each. Satisfaction or money refunded.

**L. H. ROBEY, Worthington, W. Va.**

**MILLER'S SUPERIOR ITALIAN QUEENS**

By RETURN MAIL; bred from best Red-clover working strains in United States. No better hustlers; gentle, and winter excellent. Untested, from my SUPERIOR breeder: one, 75c; six, $4.00; twelve, $7.50. Special prices on lots of 50 or more. Satisfaction and safe arrival guaranteed. Circular free.

**ISAAC F. MILLER, :: Reynoldsville, Pa.**

# HARDY GOLDENS!

Yes, I have them, and they *are* hardy—winter well, very gentle, and extra good hustlers. I know many goldens are the reverse of all this. I also know why, so do the breeders who sell them. My prices are high; but, every thing considered, they are cheap (see June 15th issue). I sell 20 goldens to one of any other race. Untested queen, $1.00; select tested, *guaranteed*, $2; tested, 3-band, $1. **C. Oscar Fluharty, Sandusky, W Va**

## CARNIOLAN, BANAT, AND CAUCASIAN QUEENS

Home-bred, $1.00 each; five at 80c each; Imported, $4.00 each.

**FRANK BENTON. - Box 17. - WASHINGTON, D C.**

## RED-CLOVER QUEENS

200 lbs. honey from my breeding colony. Mostly red-clover honey. Untested queen, 65 cts.; tested, $1.00; doz., $7.00. Four-frame nuclei and fine tested queen, $4. **G Routzahn, Biglerville Pa.**

TRY SOME OF MY

## RED-CLOVER AND GOLDEN QUEENS

Italian strain, untested, 50c each. Mailed promptly; safe arrival and satisfaction guaranteed. Send for prices of breeders and tested queens. **M. BATES, Greenville, Ala., R 4, box 29.**

# TO LAND SELLERS

There is a continual demand for farms or ranches suitable for bee-keeping. If you have the right kind of place, and can satisfy us on that point, we are certain you can dispose of it to one of the 35,000 readers of GLEANINGS IN BEE CULTURE, by inserting a small advertisement in its pages.

There is no other medium by which you may reach the great constituency of bee-keepers. The cost of such an advertisement is small when compared with the results.

WRITE TO

THE ADVERTISING MGR. OF GLEANINGS IN BEE CULTURE

MEDINA, . OHIO


## Convention Notices.

There will be a semi-annual session of the Nebraska State Bee-keepers' Association held in Lincoln during the State Fair. The meeting will be held on Wednesday evening, Sept. 2, at 7 o'clock, at the bee and honey house on the State Fairgrounds.

All bee-keepers in attendance at the fair should be present. There will be interesting discussions, exchange of practical experiences, and renewal of acquaintance. Come to the fair and see one of the best honey exhibits displayed in any of the central States, and enjoy a meeting of one of the growing State bee associations. LILLIAN E. TRESTER, Sec.

Lincoln, Neb.

# SPECIAL NOTICES

### By Our Business Manager

JAPANESE BUCKWHEAT.

We can supply seed in two-bushel lots and upward at $1.50 per bushel, no charge for bags, although at this price we have very little margin. One bushel, $1.75; half-bushel, $1.00; peck, 60 cents, bag included in each case.

ONE-FRAME OBSERVATION HIVES AT A DISCOUNT.

We have a few one-frame observation hives, slightly shop-worn, which we offer at reduced price to close out before taking inventory. They are almost equal to fresh new goods. There are seven with supers, which we will sell at $2.25 each, and two without supers, at $1.90 each.

OUR ST. PAUL BRANCH.

Mrs. H. G. Acklin, manager of our St. Paul branch, is expecting to take an extended vacation, and has secured the co-operation of Messrs. Palmer & Pilcher, who will be permanently identified with this branch in the future. On my recent visit to St. Paul, adjusting the loss by fire, I met both gentlemen and can heartily commend them to our patrons of that office. While the care of bees was new to them, they were apt and capable, and were fast mastering the mass of details connected with the handling of supplies as well as the bees.

A HONEY-PUMP.

Some months ago there was described in these columns an outfit for bottling honey; and one of the items described was a small rotary pump that would raise honey from the receptacle where it leaves the extractor up into an elevated tank so that it would flow by gravity through the filling-pipe to the glass bottles and jars. We have been investigating pumps for handling liquid honey, and are prepared to offer the No. 1 Blackmer pump to run with a belt at $25.00. This can be belted up to the same engine that runs the honey-extractor by putting a four-inch pulley on the opposite side of the engine from that which drives the extractor. For those who do not have an engine to drive it we can supply the Little Giant pump, with handle to work by hand, for $20.00.

REVISED PRICES OF HONEY-EXTRACTORS WITH BALL-BEARINGS AND SLIP GEAR.

The addition of the letter "B" to old numbers indicates ball-bearings.

THE NOVICE EXTRACTOR.

*In ordering odd-sized extractors, give outside dimensions of frames and length of top-bar.*

No. 4B.—For all frames 13 inches or less in depth and 13¾ inches or less in width (wt. 50 lbs.) . . . . . $10 0

No. 5B.—For L. or Simp. frames standing on end, or any other frame not over 9½ in. deep or 18¾ long, top-bar 20 in. (wt. 45 lbs.) . . . . . 9.50

No. 7B.—For frames deeper than the L., but not over 11¾ in. (wt. 60 lbs.) . . . . . 10.50

No. 10B.—For deeper frames not over 13¾ in. deep, or 18½ wide (wt. 60 lbs.) . . . . . 10.50

THE COWAN RAPID REVERSIBLE EXTRACTOR.

No. 15B.—2-frame Cowan for L. frames; comb-pockets, 9⅝ in.; diam. of can, 20 in. (wt. 80 lbs.) . . . . . 12.50

No. 15BR.—2-frame Root Automatic reversing, with brake, size as above . . . . . 14.00

No. 17B.—2-frame Cowan, for frames not over 11⅝ in. deep, 23 in. in diameter (wt. 100 lbs.) . . . . . 13.50

No. 17BR.—2-frame Root automatic reversing, with brake, size as above . . . . . 15.00

No. 18B.—2-frame Cowan for frames not over 12 in. deep, 24 in. in diameter (wt. 120 lbs.) . . . . . 14.50

No. 18BR.—2-frame Root Automatic reversing, with brake, size as above . . . . . 16.00

No. 20B.—2-frame Cowan, for frames requiring larger than 24-in. can . . . . . 16.50

No. 20BR.—2-frame Root Automatic reversing, with brake, size as above . . . . . 18.00

The Root Automatic reversing device with brake is applied to 2-frame extractors, as in table above. This device can not be added to a Cowan, but the extractor must be made for it.

THE ROOT AUTOMATIC REVERSIBLE EXTRACTOR.

No. 25B.—4-frame Root Automatic for L. frames, 28 in. in diameter (wt. 180 lbs.) . . . . . 25.00

No. 25BP.—Same as above with power gear . . . . . 30.00

No. 27B.—4-frame Root Automatic for frames not over 11⅝ in. deep, 34 in. in diameter (wt. 210 lbs.) . . . . . 28.00

No. 27BP.—Same as above with power gear . . . . . 33.00

No. 30B.—6-frame Root Automatic for L. frames, 32 in. in diameter (wt. 210 lbs.) . . . . . 32.00

No. 30BP.—Same as above with power gear . . . . . 37.00

No. 37B.—6-frame Root Automatic for frames not over 11⅝ in. deep . . . . . 37.00
No. 37BP.—Same as above with power gear . . . . . 42.00
No. 40B.—8-frame Root Automatic for L. frames, 36 in. in diameter (wt. 210 lbs.) . . . . . 40.00
No. 40BP.—Same as above with power gear . . . . . 45.00
No. 47B.—8-frame Root Automatic for frames not over 11⅝ in. deep . . . . . 46.00
No. 47BP.—Same as above with power gear . . . . . 51.00

Other sizes built to order. Prices on application. Give outside dimensions of frame and length of top-bar, and number of frames you want to extract at one time.

In the foregoing list, B, of course, indicates that the extractor is fitted with ball-bearings. R indicates that the Root automatic is meant, and P indicates that the machine is fitted for power, and requires the use of an engine.

BALL-BEARING EXTRACTORS.

For some time we have been on the lookout for a good ball-bearing at a price low enough to enable us to use it in our honey-extractors without greatly increasing the price. We have now found what we have been looking for, and propose from this time forward to equip all our extractors with ball-bearings. This we can not do at the regular price; but the machines will be so much improved in durability and easy-running quality that you will be well repaid for the slight additional price. In addition to the ball-bearings we are arranging a slip-gear device on al most all hand-power machines, to enable one to throw the gears out of mesh and stop the crank from revolving the moment you stop applying power, and allow the reel to spin on its ball-bearings, throwing out the honey while you uncap the next lot of frames ready to put into the extractor. None of these improved machines are in the hands of our dealers, as we did not get them perfected in time for this season's trade. You must not expect the new features on any extractors you may order this season unless you especially request it or mention it in your order.

# Special Notices by A. I. Root

UP-TO-DATE POULTRY-BOOKS, ETC.

Besides the poultry-book that we give away to everybody who sends $1.00 (as mentioned in GLEANINGS for May 15), providing he sends 6 cts. for postage, we have the following up-to-date valuable books which we offer at half price to any one who sends $1.00 for GLEANINGS and asks for no other premium, or any one whose subscription is paid up for one year or more. First we have two books, the regular price of which is $1.00 each; to the subscribers of GLEANINGS, as mentioned above, 50 cents each, postpaid. The first of these books is:

Poultry-plant Construction, most profusely illustrated with plans for houses, diagrams, bills for material, and descriptions of the largest and most successful poultry-plants now running, including houses for ducks as well as chickens.

The second dollar book is entitled Successful Poultry-keeping. This is a book of 176 pages, 9x12, brimful of illustrations. It comprises the whole business in every department, from setting hens to caponizing.

Then we have the following books at 50 cents each:

Artificial Incubating and Brooding.
Poultry-houses and Fixtures, with a special department in regard to fresh-air or curtain-front poultry-houses.
The Chick Book; all about raising chickens; profitable broiler-raising, etc.
The Plymouth Rocks.
The Bantam Fowl.
The Leghorns.
The Asiatics.
Ducks and Geese.
Eggs and Egg-farms.

Besides the above 50-cent books we have also 6 more 50-cent books entitled Cyphers' Series, as follows:

1. Profitable Poultry-keeping in all its Branches.
2. Profitable Care and Management of Poultry.
3. Profitable Poultry-houses and Appliances.
4. Profitable Egg-farming.
5. Profitable Market Poultry.
6. Capons for Profit, by T. Greiner.

The above 15 books are 50 cents each, but only 25 cents to those who send $1.00 for GLEANINGS, or to any one whose subscription is paid up for one year or more; and if you find when you get any one of them that you do not care for the book at 25 cents, send it back and we will return the money. As we have only a limited stock of these books perhaps you had better order soon, and mention some other one in case the one particularly wished has been sold out. We have still a good stock of the book entitled Profits in Poultry, for which you may send 6 cents to pay for postage as described in GLEANINGS. This is a good-sized book that we give away, but it is not up to date like the others.

Well, something has lately come up about capons that may make this latter book especially valuable. The writer, in one of the recent poultry-journals, says capons can be easily taught to take care of chickens just as well as the mother hen; and you can give them chicks from the incubator or take them away from the hens when hatched, and he will be just as good a mother as the mother-hen, and he will grow and get fat at the same time. The writer says he has repeatedly given a good-sized capon 30 or 40 chicks, and he says the capon would scratch and "cluck" for them and brood them as well as the mother. Greiner's book does not tell us any thing about this. Perhaps he did not know it. If his eye should alight on this will he please let us know? and if any of the rest of you have had experience in giving chicks to a capon as I have described I wish they would write me briefly in regard to it. If a capon can be made to receive and brood chicks it looks to me as if he would be ahead of a "fireless" brooder or any other kind. I am inclined to think there may be at least some truth in this, for I have seen a half-grown chicken adopt other small chickens, and care for them almost like their own mother.

Finally, we have quite a number of copies of a book called Reliable Poultry Remedies; or, the Causes, Symptoms, and Treatment of Poultry Diseases. Now, while I have very little faith in doctoring either chickens or human beings with drugs or medicines of any kind, I find this book exceedingly valuable in its hints about the *prevention* of diseases among poultry. A great many times, and I do not know but I might almost say the greater part of the time, when your fowls are ailing it is because of some carelessness or neglect on your part. This book will enable you to see almost at once where the trouble is.

The *regular* price of the book is 25 cents, or *13 cents* only to the readers of GLEANINGS.

THE WRIGHT BROTHERS FLYING MACHINE, AND OTHERS, UP TO DATE.

We learn by the papers that, some little time ago, Wilbur Wright, the elder of the brothers, while making some experiments in flying, was pretty severely burned by the escaping steam of the cooling-coils of his engine. He said, however, he was not hurt, and to prove it he walked half a mile or more to his stopping-place; but as we go to press we learn by the *Woman's Daily* that the hurt was more severe after all, and will probably interfere with some of their plans for flights over in Europe. It is just like my good friend Wilbur to say he was not hurt, even when suffering severely, and we hope and pray that he may soon be fully recovered.

From the magazine called *Aeronautics* we learn that De la Grange, on the 30th of May, made ten circles with his aeroplane, staying up in the air 15 minutes and 26 seconds. The distance covered was from 14 to 15 kilometers. As a kilometer is equal to about $\frac{3}{5}$ of a mile, the speed made was about 40 miles an hour. Farnam has also made a successful flight, carrying a passenger, and afterward won the $2000 prize by making a 20-minute flight of 11 miles.

The "June Bug," as it is called, has also made some very successful flights here in America, in one of them winning the *Scientific American* trophy. This flight was made July 4, and the machine made something over a mile, at the rate of about 40 miles an hour. We are further told that De la Grange has planned to arrive with his machine in the city of New York about the 20th of August, that Farnam is probably here by this time, and the prospect is that "something will be doing" now right speedily. In fact, it may be that something has *already* been done while I dictate these words.


## CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Help Wanted

WANTED.—Man and wife for farm in Dutchess Co., N. Y. Man to have knowledge of bees. Address
B, Room 409, Evening Post Bldg., New York City.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa

## For Sale

For Sale.—Collie puppy, female, nearly all pure white. Eligible. H. E. Gray, Fort Edward, N. Y.

For Sale.—Tasmanian necklace shells, any quantity. Sample sent. G. H. Smith, Ramsgate, Tasmania.

For Sale.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. W. P. Smith, Penn, Miss.

For Sale.—1908 home-grown recleaned scarlet-clover seed, now ready; $3.50 per bushel, sacks free. A No. 1 stock. G. L. Ellis, Millsboro, Del.

For Sale.—One, two, or three well-equipped apiaries near Bakersfield, Kern Co., California. Interested parties please address H. W. Jackson, R. D. 3, Bakersfield, Cal.

For Sale.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply. Kensington Cattery, Marion, Ohio.

For Sale.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to Frank S. Stephens, (Root's Goods.) Paden City, W. Va.

For Sale.—200 cases of 5-gallon cans. All are free from rust inside, and the majority have been used but once. Two cans in a case; 10 cases or more, 25 cts. per case. J. E. Crane & Son, Middlebury, Vermont.

For Sale.—Alexander wire bee-veils, no pins or sewing required; made from the very best wire cloth at 60 cents each, postpaid. Frank Alexander, Delanson, N. Y.

For Sale.—Best Wisconsin sections, 1000, $4.00; 2000, $7.75; 3000, $11.00; 5000, $17.50; No. 2, 50 cts. less; plain, 25 cts. less, 24-lb. 2-in. glass shipping-case, 14 cts. Catalog free. H. S. Duby, St. Anne, Ill.

For Sale.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer. Cleveland Health Food Co., Cleveland, O.

Don't bother with cans. Kegs are cheaper and easier to fill and handle. 160-lb. pine kegs, with 2-in. hole and plug, 50 cts. each, f. o. b. factory. Orders given prompt attention. Send list of supplies needed. I can save you money. N. L. Stevens, Moravia, N. Y.

For Sale.—Moving-picture show with newspaper, magazine, and phonograph business combined; doing good business; no opposition in town of 3000. Will sell separately; good reasons for selling. Don't write unless you have the cash and mean business. W. A. Nichols, Medina, Ohio.

For Sale.—About 100 bee-hives. They are mostly 8, 9, and 10 frame hives, taking L. frames. Some of them are new, and all are in good condition. They have metal rabbets, Van Dusen clamps, and a large number have Hoffman frames. I have also a few Dadant hives that are new, and some 9-frame hives that take frames of standard length, and have bodies 12 inches deep. Further particulars, matters of correspondence. Somebody can get a bargain in these hives, as, owing to failing eyesight, I shall soon have to quit the business of bee-keeping. Edwin Bevins, Leon, Iowa.

## Real Estate for Bee-keepers

For Sale.—160 acres, 60 in crop; fine park-like bee-farm; spring water, wood, house, stables. Price $2500. Rev. Gus. Kunke, Ponoka, Alberta, Canada.

For Sale.—A good paying bee business in Minnesota; with or without real estate; 400 colonies Italian bees, with all necessary up-to-date appliances. A B C, care A. I. Root Co., Medina, Ohio.

For Sale.—A fine ranch in Idaho, fruit of all kinds, clear spring water, 160 acres good land, 12 stands of bees, ideal bee location; good market; best climate; $25.00 an acre; cheap. No boy correspondence wanted. F. F. George, Fraser, Idaho.

For Sale or Rent.—Bee-hive factory; waterpower, 85-horse capacity; trackage, yardage, 93,000 feet floor-space. Native basswood for sections can be bought for $3.00 to $5.00 per cord. Thick soft white pine for hives available at less than Eastern price. If interested, come. W. H. Putnam, River Falls, Wis.

For Sale.—Two good homes in village of Elsie; one house, 7 rooms, one-half acre, bee-house and supplies. The other, 9 rooms, three-fourths acre; well, cistern, fruit, large horse-barn; two poultry-houses. Every thing goes with the place except library, bedding, dishes, and tools. Dr. N. L. Higbie, Elsie, Clinton Co., Mich.

Pecos Valley of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted to accompany parties. Write to-day to R. M. Love, General Agent, Artesia, N. M.

## Bees and Queens

Golden Italian queens by return mail, 50c. J. F. Michael, Winchester, Ind.

For Sale.—800 colonies of bees; for particulars, address Dr. Geo. D. Mitchell & Co., Ogden, Utah.

For Sale.—Northern-bred red-clover queens. Untested, 75 cts.; tested, $1.00. E. S. Watson, R. F. D. No. 2. Madison, Maine.

For Sale.—Improved Italian and Golden Mortgage-lifter queens. Tested and untested, $1.00 to $3.00. Best the Bee-man, Slatington, Pa.

For Sale.—Extra fine untested red-clover Italian queens by return mail, 60 cts. Mismated, 35 cts.; 3 for $1.00. F. M. Mayberry, Lederach, Pa.

For Sale.—Italian, Carniolan, and Caucasian queens. Untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Stamps not accepted. Edward Reddout, Baldwinsville, N. Y.

For Sale.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry. N. V. Long, Biscoe, N. C.

Standard bred red-clover Italian queens, Bred for gentleness and their superior working qualities. Virgins, 45 cts.; untested, laying, 85 cts.; select untested, $1.00; tested, $1.50. J. R. McCorkle, Wingate, Ind. Rt. 5.

For Sale.—Queens of my famous red-clover stock; untested, 50 cts.; select untested, 75 cts.; tested, $1.00; nuclei, $1.00 per frame. Golden queens at same price. H. A. Ross, 1709 Upper Second St., Evansville, Ind.

For Sale.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. Rails, Orange, Cal.

## Honey and Wax for Sale

For Sale.—Choice extracted clover honey for table use, in new square cans. C. F. Luft, Ada, Ohio.

For Sale.—New crop fancy white-clover and amber comb honey. W. J. Harbough, Kernstown, Va.

For Sale.—New No. 1 white clover comb honey at $3.50 per case of 24 sections; less than six cases, 25 cts. per case extra. Quirin-the-queen-breeder, Bellevue, O.

For Sale.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. Baldridge, Homestead Farm, Kendaia, N. Y.

For Sale.—Palmetto honey, perfectly cured, and almost as white as white clover. Ten gallons, in a two-can case, $8.50. E. B. Rood, Bradentown, Fla.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan Ky.

FOR SALE.—Choice white extracted honey, mostly clover and raspberry mixed, in new 60-lb. cans. Price on application. Sample, 10 cts. JAMES MCNEILL, Hudson, N. Y.

FOR SALE.—2000 lbs. white-clover honey, mostly comb, heavy, well ripened. What am I offered?
J. M. MOORE, Holden, Mo.

FOR SALE.—About 7000 lbs. of fine extracted white and alsike clover honey, in 5-gal. square tin cans, 2 to box, at 8 cts. per lb., f. o. b. C. M. BUTT, JR., Viroqua, Wis.

FOR SALE.—1908 crop of Northern Michigan red-rasbberry and clover honey; heavy body, light color, fine flavor. Price $10.50 per case of 120 lbs. (two cans). Cash with order.
IRA D. BARTLETT, East Jordan, Mich. Box 156.

FOR SALE.—Our own production of comb honey, 4 x 5 plain sections, No. 1 quality, at 16 cts. per section. Our comb honey won every important premium in the State last year. If you have a place for some "gilt-edge" comb, write.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—Clover and raspberry honey; also basswood honey; well ripened, rich body and delicious flavor; extracted from capped combs. Two 60-lb. cans (120 lbs. net), $10.75. Ask for sample if a choice article will please.
F. B. CAVANAGH, Boscobel, Wis.

FOR SALE.—150 cases of No. 1 comb honey, 15 sections in 3-inch glass, no-drip cases, 6 cases in a crate, very fine, at $2.40 per case, f. o. b. cars here. Also 8000 lbs. clover and basswood extracted, in new 60-lb. cans, 2 in case, very heavy body and fine flavor, at 9c, f. o. b. cars here. Sample free.
W. H. TOWNSEND, Hubbardston, Mich.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 9½ c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

It is just as I expected! The bees are now, this 21st day of July, gathering basswood honey, and piling it on top of the raspberry. It will be raspberry and basswood honey mixed this year. Then about the time this August 1st GLEANINGS reaches you we will be extracting. Rich, ripe, and ropy will be the kind of honey I will have for sale this year. Some of it has been on the hive 60 days. Doesn't it make your mouth water to think of it? It will be put into bright new shiny 60-lb. cans that you can see your face in. I am asking 10 cts. a pound for this delicious honey—just a little more than it takes to buy the ordinary kind. Ask for a sample, and be convinced.
E. D. TOWNSEND, Remus, Mich.

## Honey and Wax Wanted

WANTED.—White ripe extracted honey; will pay cash.
GEORGE RAUCH,
No. 5343 Hudson Boulevard, North Bergen, N. J.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—We are in the market for No. 1 white extracted honey in any quantity. Correspondence solicited. State kind, quantity, and price asked. We also have for sale 60-lb. honey-cans, 2 cans in case. Both cans and cases in A1 condition, at 30 cts. per case. MICHIGAN WHITE CLOVER HONEY CO.,
31-33 Griswold St., Detroit, Mich.

## Wants and Exchanges

WANTED.—Refuse from wax-extractors and old combf or cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Eastman Panoram kodak, No. 4. Will trade a 6½x8½ View outfit, or sell outfit and buy kodak.
F. C. WOOD, Dola, O.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

Golden Italian queens, 75 cts. each. Satisfaction guaranteed.
WALTER S. HOSS, 1127 Blaine Ave., Indianapolis, Ind.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

I club a high-grade Italian queen with GLEANINGS, new o renewal. W. T. CRAWFORD, Hineston, La.

Order your bee-supplies from Superior Honey Co., Ogden, Utah, at Root's catalog prices. You save time and money. Largest dealers in the West.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND,
Birmingham, Erie Co., Ohio.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

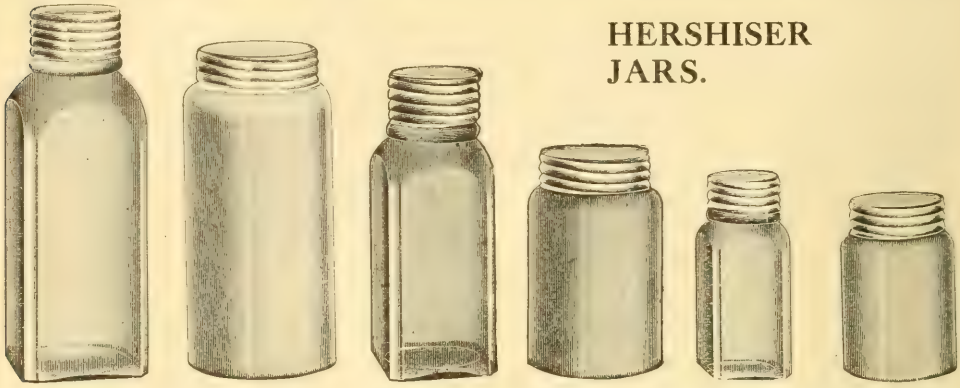
ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for cir cular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# GLASS HONEY-PACKAGES

## HERSHISER JARS.



There is nothing handsomer made for exhibiting honey or for bottling for a fancy trade. We have recently put a large stock, not only here at Medina, but in Chicago, New York, and Philadelphia, from any of which points the jars are supplied at the following prices:

PRICE LIST OF HERSHISER JARS.

| | | | | |
|---|---|---|---|---|
| ¼-lb. square Hershiser jars with aluminum cap, | $ .95 | per case of 2 doz., | weight | 10 lbs. |
| ½ " " " " " " " | 1.10 | " " " " " | " | 15 " |
| 1 " " " " " " " | 1.50 | " " " " " | " | 24 " |
| 2 " " " " " " " | 1.00 | " " " 1 " | " | 20 " |
| ½ " round " " " " " | 1.15 | " " " 2 " | " | 14 " |
| 1 " " " " " " " | 1.50 | " " " " " | " | 24 " |
| 2 " " " " " " " | 1.05 | " " " 1 " | " | 18 " |

We can also supply the square jars with cork stoppers, either in partitioned cases or in crates, including the corks, from any of the four points named, as follows:

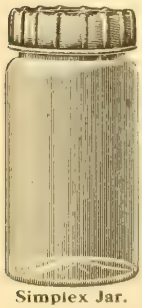
| | | | |
|---|---|---|---|
| 5-oz. square jars in reshipping-cases, | $ .80 | per case of 2 doz.; | $3.25 per crate of 1 gross. |
| ½-lb. " " " " " | 1.00 | " " " " " | 4.25 " " " " " |
| 1 " " " " " " | 1.20 | " " " " " | 5.75 " " " " " |
| 2 " " " " " " | 1.60 | " " " " " | 7.50 " " " " " |

## TAPER-PANEL JARS—1-2 and 1 lb, capacity.

This is a new jar which we are introducing this year, and we believe it is a winner. It has been made especially for us. The cap is a very neat and simple one, securely closing the jar honey-tight. At the low price for which we offer it, this jar should have a large sale. We have them packed only in reshipping-cases of two dozen each, ready to ship when refilled with honey, without additional packing.

| | | | | |
|---|---|---|---|---|
| ½-lb. Taper-panel jars in cases, | $ .80 case; | 6 cases, | $4 50. | Wt. 18 lbs. |
| 1-lb. " " " " " | 1.00 " | 6 " | 5.70. | " 25 " |

## NO. 25 JAR. SIMPLEX JAR.



Simplex Jar.

These are two popular jars of 1-lb. capacity, of which we have sold large quantities. For a year we were unable to get any more Simplex; but they are being made again; and while they are costing us more than they did, they are such a handsome jar that we have secured a further supply. The No. 25 jar we can furnish either with the porcelain top with lacquered band and rubber ring, or with lacquered tin cap lined with thick wax-paper wad. This latter style costs less than the

other, and will not be subject to so much breakage in shipping. These are all packed in reshipping cases of two dozen each at the following prices:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Simplex jar, in reshipping-cases, | $1.10 | case; | 6 cases, | $6.30. | Weight | 24 lbs. | per case. |
| No. 25 " porcelain top, " | 1.10 | " | " " | 6.30. | " | 25 " | per case. |
| No. 25 " tin top, " | .90 | " | " " | 5.10. | " | 22 " | per case. |

## TIP-TOP JARS.

This is a reliable jar with glass top, rubber ring, and spring-top fastener. We have it in two sizes, holding ½ and 1 lb., packed either in reshipping-cases or crates of one gross at the following price:

Half-pound Tip-top jars in reshipping-cases, $1.00 per case of 2 doz.; $5.00 per crate of 1 gross.

One-pound Tip-top jars in reshipping-cases, $1.10 per case of 2 doz.; $5.50 per crate of 1 gross.

## HALF-POUND TUMBLER, NO. 12.

For a cheap glass package for half pound of honey the tin-top tumbler is very popular. We supply with these tumblers, besides the tin top, a wax-paper disk for sealing it tight when filled with honey. These are packed four dozen to case, or 32 dozen to barrel, at the following prices:

No. 12 half-pound tumblers, $1.00 per case of 4 doz.; $6.40 per barrel of 32 doz.

## MASON FRUIT-JARS.

These are very largely used for canning fruit, and are often used for honey as well. As we buy them by the carload, we can make the following prices at Medina, all put up complete with porcelain-lined caps and rubbers, in cases of 1 doz.

| | | | | | | |
|---|---|---|---|---|---|---|
| Pint size . . | dozen, | 62c; | 6 dozen, | $3.50; | 12 dozen, | $6.75. |
| Quart size . | " | 65c; | 6 " | 3.60; | 12 " | 7.00. |
| Half-gallon size, | " | 85c; | 6 " | 4.85; | 12 " | 9.50. |

Triumph wrenches for Mason jars, 15c each; by mail, 20c.

All glassware shipped in original packages is furnished as put up at the factory by experienced packers and should reach destination in fair condition. We decline to be responsible for breakage. Should there be an excessive amount of breakage, report the case, giving particulars, and we will present the matter for adjustment to the factory.

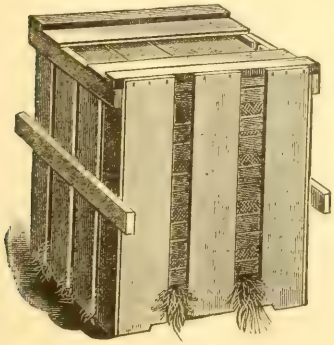
## STURWOLD'S SHOW-CASE.

This case is 28 inches high and 20 inches square, outside measure, top and bottom. The glass of which it is made is 16x24. The case is to be set up in any grocery, drugstore, or any other place of business where you want your honey exhibited or sold. The frame is of chestnut, filled and varnished, and finished in natural grain. Price, plain, $5.00; with name and address, $5.50. As the glass is very apt to be broken in transit, we will ship them, if you prefer, with glass boxed separately, at the same price. In flat, no glass or finish, $2.50; glass included, $4.00.

## SAMPLE MAILING-BLOCKS.

Price 6 cts. each; by mail, 8 cts.

These conform to the postal regulations for mailing liquids. A small wide-mouthed bottle with cork is enclosed in a screw-top case. Requires three cents postage when mailed filled with honey. Used for submitting samples of extracted honey.



## SHIPPING-CASES.

In packing your comb honey for market do not injure your chances of selling at top prices by using poorly-made shipping-cases. Separate your honey into grades. The best will bring enough higher price to pay you well for your time in sorting, and you will be building a reputation for reliability and square dealing which will greatly assist you in making future sales. Having graded the honey carefully use neat, bright, well-made cases to pack it in. For list of our cases see our general catalog. For one cent a case extra we furnish cases with sliding cover and corrugated paper sheet for bottom of case, which saves breakage in shipping. In shipping small lots by freight pack several cases into a carrier with hay, straw, or other spongy material underneath to take the jar when handled roughly.

**THE A. I. ROOT CO., Medina, O.**

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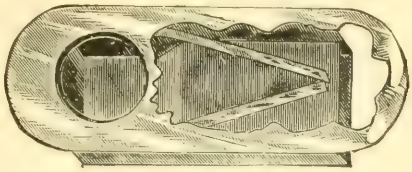


# PORTER BEE-ESCAPES

## HIVE ESCAPE

When taking off surplus this is the greatest saving device. It does away with the shaking of the heavy supers, the cruelty of excessive smoking which causes the bees to uncap their honey and start robbing. Just tip the super to the angle of 45 degrees and insert the board. In a few hours it is free of bees; then take off your super. You can as well afford to be without a smoker as without the Porter Bee-escape.

### PRICES

Each, 20 cts.; dozen, $2.25; postpaid. With board, 35 cts. each; $3.25 per 10; by express or freight.

### TESTIMONIALS

They are perfect in action.—British Bee Journal.

No bee-keeper can afford to be without them.—Prof. Cook in American Bee Journal.

Worthy of highest commendation.—Eugene Secor, judge on awards, World's Fair, Chicago.

I would not do without them even if they cost five five dollars apiece.—W. Muth-Rasmussen, Independence, Cal.

They are absolutely perfect. I can not tolerate my own make since using them.—John S. Reese, Winchester, Ky.

They are one of the best things ever brought into any apiary, and should be used in every bee-yard in the whole world.—Wm. McEvoy, Foul-brood Inspector, Ontario, Canada.

There is no robbing or fighting or disturbance in the apiary when the surplus honey is taken off with them. They are simply perfect.—W. Woodley in British Bee Journal.

## HOUSE ESCAPE

To be used over the doors and windows in the extracting-house, or any place you wish to clear of bees. The most persistent robber can not return. Some bee-keepers make a practice of taking off the filled supers and stacking seven or eight in a pile. The Porter Honey-house mounted on a board makes the best kind of escape. Don't wait till to-morrow before you get a supply. You can not afford to be without them longer.

### PRICES

Each, 25c; dozen, $2.75; postpaid.

### TESTIMONIALS

The Porter bee-escape clears the supers of bees so perfectly and quickly and easily that it makes the taking off of honey a pleasure instead of a dread as in former years.—G. M. Doolittle, Borodino, N. Y.

The removal of full honey-boxes has become an amusement since we began using the Porter bee-escape.—Ed. Bertrand, Editor Revue Internationale d'Apiculture, Nyon, Switzerland.

This number of the Review contains more unqualified praise of the Porter bee-escape than any other issue has ever contained of any other implement; but so long as it is deserved, who cares?—Bee-keepers' Review.

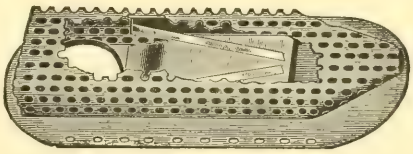
They are the greatest thing on earth for expelling bees from supers.—G. J. Flansburg, South Bethlehem, N. Y.

I would not be without them for four times what they cost.—Dr. W. A. Tufts, Musson, La.

Undoubtedly the best bee-escape is the one invented by R. & E. C. Porter.—W. S. Pouder, Indianapolis, Ind.

Bee-men are certainly behind the times if they can afford to use them and do not.—M. H. Mendleson, Ventura, Cal.

## For Sale by Dealers Everywhere!



R. & E. C. Porter, Patentees

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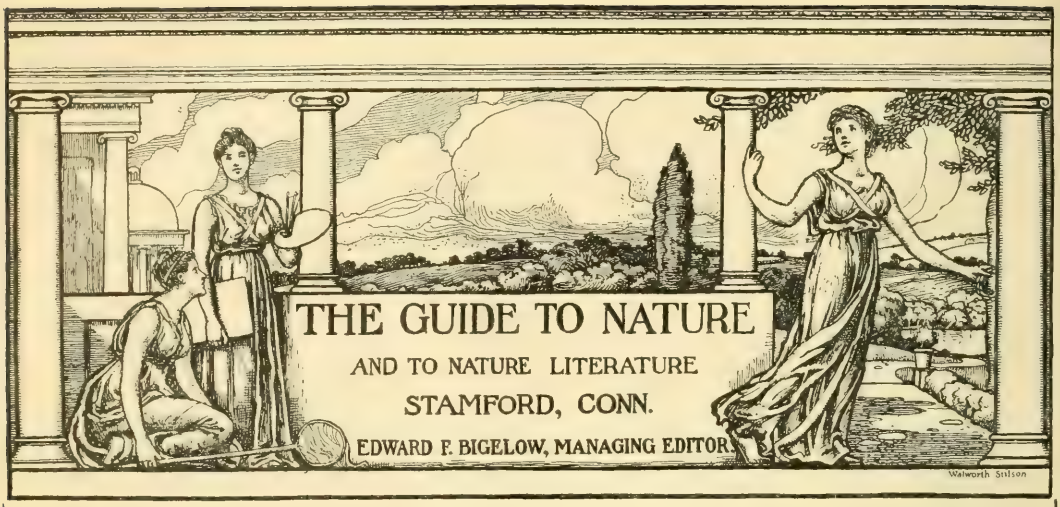


# FOUR GREAT SPECIAL NUMBERS

## SEPTEMBER, OCTOBER, NOVEMBER, and DECEMBER, 1908

**A second great enlargement and improvement.** With the June issue The Guide to Nature commenced its second era (of three months) with so many improvements as to surprise delightfully every patron. Beginning with the September number there is another decided advance, and the numbers for September, October, November, and December will eclipse all previous efforts in value and interest to readers.

There is to be a new and beautiful cover, and many other mechanical improvements. We have in hand and there are promised a large number of interesting articles and expressive photographs. Several new features which we are not yet free to announce are in preparation. The September number will surprise and delight.

It has taken a few months to "find ourselves." But we can tolerate the delay in the satisfaction that we are doing the "finding." It takes a little time to get under full headway. By the September issue we shall have had that time.

The magazine just as it is in June, July, and August is of higher grade than any other nature magazine ever published. It fits the present increasing interest. We have full confidence that those who know the magazine agree with that statement.

Neither the Prospectus nor any form of announcement can fully portray the merits of the magazine. We ask a fair trial and your hearty co-operation. Let the magazine speak for itself, and let us have the benefit of your suggestion and criticisms.

Single copy—15c. One year—$1.50. Less than one year at single-copy rates, with the exception that, to new subscribers only, is offered a four months' trial for 50c.

# Gleanings in Bee Culture

DRONE, QUEEN, AND WORKER.—SEE PAGE 1002.

*Published by The A. I. Root Company, Medina, Ohio, U. S. A.*

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI August 15, 1908 No. 16

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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z. HUTCHINSON, editor and proprietor of the *Bee-Keepers' Review*, and author of Advanced Bee Culture.

No bee-keeper's library can be at all complete without a copy of this magnificent apiarian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal.*

This work of 536 pages is, as its name implies, a complete cyclopædia of everything pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of GLEANINGS, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and out-apiaries; Dr. E F. Phillips on the eye, parthenogenesis, and scent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say any thing about a book of which already 100,000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee-keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner; and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal*. Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide" and "The Honey-bee."

# C. H. W. WEBER

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## HONEY WANTED.

Fancy white clover, EXTRACTED HONEY. State how it is put up, and price expected delivered in Cincinnati.

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Office and Salesroom, 2146-2148 Central Ave.
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**CINCINNATI, .. .. .. OHIO**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

INDIANAPOLIS.—The demand is good, but prices very irregular and unsettled. Producers are offering fancy white comb as low as 12 cts., and white-clover extracted in five-gallon cans as low as 7 cts. Amber grades are not mentioned here at present. Beeswax remains steady at 28 cts. cash and 30 in exchange for merchandise.

Indianapolis, Aug. 5. WALTER S. POUDER.

SAN FRANCISCO.—Spot prices quoted by packers on honey are unchanged. The crop is being gradually gathered, and considerable new honey has been marketed. White-sage honey is very scarce this year. Stocks are light, and there is a good demand both here and in the East. In view of the shortage, little change in prices is anticipated. Water-white comb, per lb., 16 to 17; white, 15; water-white extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¾ to 5¾; candied.

Aug. 1. *Pacific Rural Press.*

ZANESVILLE.—Some native honey is now arriving on this market; and, while the demand is by no means heavy, yet the movement is more satisfactory than would be naturally expected in view of the general business depression. For No. 1 to fancy comb the jobbing trade is offering 12 to 13 cts. on arrival. The market is still unsettled, though there is a tendency toward lower prices. So far the demand for extracted is confined almost entirely to small retail packages. Beeswax is in some demand in a retail way. For good yellow beeswax I am offering 28 cts. in cash or 30 in exchange for bee-supplies.

EDMUND W. PEIRCE,
Aug. 7. Zanesville, O.

CINCINNATI.—Quite a number of shipments of fine honey are now coming in, but prices are ruling lower than last season. In fact, we have never seen buyers so disinterested in a new crop of honey. We are offering the choicest at 14 and 15 by the single case. The demand for extracted honey is dull, which we attribute to the lack of activity in the business world; and, secondly, this is one of the dullest months in the year. We are selling amber extracted at 5½ to 6½ according to quality and quantity purchased. Fancy white extracted honey brings from 7 to 9 cts. Beeswax is somewhat easier, and we are paying 27 cts. cash and 29 in trade, delivered here. The above quotations on honey are the prices at which we sell—not what we are paying.

July 21. THE FRED W. MUTH CO., Cincinnati, O.

KANSAS CITY.—There is quite a supply of native honey coming to market, prices ranging from $3.25 for fancy white to $2.75 for amber and off grades, the demand being for only the best qualities. There is a little demand for extracted at 7½.

Aug. 3. C. C. CLEMONS & CO.

BUFFALO.—New honey is arriving now quite freely. Quality is very good. Buyers seem slow to buy. They are holding off for lower prices. In order to get it to moving, prices must go lower. No. 1 to fancy white-clover comb, 14 to 15; No. 2 ditto, 10 to 12; No. 3 ditto, 9 to 10; white-clover extracted, 7 to 8; ditto amber, 6 to 6½. No dark honey is arriving. Beeswax, 28 to 30.

Aug. 11. W. C. TOWNSEND.

CINCINNATI.—There is an abundance of comb honey arriving daily, but no demand for it. We can give no other reason than, perhaps, hard times. People do without it. There is a fair demand for extracted white clover, which is selling at 7½ to 8. Amber in barrels is selling at 5½ to 6. Beeswax, light demand, is selling at 33.

July 22. C. H. W. WEBER, Cincinnati, O.

PHILADELPHIA.—This has been unquestionably the greatest honey season we have had in the East for a quarter of a century. The first lot, of 3000 lbs., arrived in Philadelphia on the river boat yesterday, and was offered at 10½ for the amber and 12½ for white, no other sales being made. The market is not as yet established; but we are looking for low prices. Beeswax is firm at 28. WM. A. SELSER, Philadelphia, Pa.

July 24.

DENVER.—We are entirely closed out of comb honey, and ready to receive consignments of new-crop comb, the first arrivals of which should move quickly at good prices if fancy stock. Extracted honey is in fair demand. We quote white extracted, 8 to 9; light amber and strained, 6¾ to 7½. We pay 25 for clean yellow wax delivered here.

THE COLORADO HONEY-PRODUCERS' ASS'N,
Denver, June 23. F. Rauchfuss, Manager.

BOSTON.—Fancy white comb honey, 17; No. 1 white comb, 16; California white sage, extracted, 9; California light amber, 8; Southern honey in barrels, slow sale, 5 to 6.

July 1. BLAKE-LEE CO., Boston, Mass.

LIVERPOOL.—Honey is steady. Market prices are fully maintained. Chilean extracted, 4 to 6; Peruvian, 3½ to 5½; California, 7 to 9; Jamaican, 4 to 5; Haiti, 5½ to 6. Beeswax is quoted, African, 29; American, 30 to 33; West Indian, 29 to 32; Chilean, 30 to 36; Peru, 33 to 34; Jamaican, 33 to 34.

July 18. TAYLOR & CO., 7 Tithebarn St.

**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.,* **Minneapolis, Minn.**

# Our Wants are Unlimited.

Mail us a sample of your

# EXTRACTED HONEY

either amber or fancy; and name your lowest cash price per pound delivered here. We buy every time the price justifies, no matter if it is one barrel or a car load, and remit the same day shipment comes to hand.

**The Fred W. Muth Co.**
THE BUSY BEE-MEN
**51 Walnut St. Cincinnati, O.**

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

**HILDRETH & SEGELKEN,**
**265-267 Greenwich St. 82-86 Murray St**
**NEW YORK.**

Our market now ready for

# HONEY

Write us. Will sell for you at highest market price, or hold for your price and make liberal cash advance. Commission five per cent. .:. .:. .:. .:.

**H. R. WRIGHT**
**ALBANY, N. Y.**

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY
Purchasing Department,
**Washington Blvd. & Morgan St.**
**CHICAGO, ILL.**

**CHAS. ISRAEL & BROS.**
486-490 CANAL ST., NEW YORK
WHOLESALE DEALERS AND COMMISSION MERCHANTS IN
**Honey, Beeswax, Maple Sugar and Syrup, etc**
Consignments Solicited. :: Established 1875.

**What They Say:** "Your honey can't be beat."—E. D. TAYLOR, N. A., Mich. "Your honey certainly has the finest flavor of any I ever tasted."—MRS. Z. SCHAAD, N. A., Mich. "Enclosed find check for $36, paying for the last three cases of honey. I hope you won't dispose of all this honey at once, as I may want more later on. Had I known of it sooner I would not have ordered some that is now coming in, and which will deplete my bank account to pay for, as I would rather have yours."—E. W. PEIRCE, Zanesville, O.

If you want some honey that will make you smile every time you taste it—honey you will be proud to set before your friends, or honey for your fancy bottling trade, send your order to Jay North. He has the genuine article; it is put up in new 60-lb. cans at 9½ cts. per pound. Sample free.

**JAY NORTH, NORTH ADAMS, MICH.**

# DOOLITTLE & CLARK

Are sending out fine Italian queens at the following prices: Untested, $1; 3, $2.50; 12, $9.00. Tested, $2.00; 3, $5.00; 12, $18.00. Breeders, $2.50, $5.00, and $10.00. Send for circular.

**BORODINO, ONONDAGA CO., N. Y.**

# Carniolan Queens

from imported mother, mated to drones from imported mother in yard remote from other bees, $1.00 each; $9.00 per doz. Mismated queens, Carniolan and Banat, 50 cts. each; $5.00 per doz.

**E. H. HAFFORD, : Fennville, Mich.**

# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

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**New Warehouse** **Root's Goods**
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## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
241 BULL ST. SAVANNAH, GA.

# NEW ENGLAND BEE-KEEPERS

WE ARE HEADQUARTERS FOR

## Bee-supplies

If you wish to secure a good harvest of surplus honey you should have your supers on hand and ready to put on the hives when the honey-flow begins We have a complete stock of Supers, Sections, and Foundation on hand, and can supply your wants promptly. Send postal for price list of

## Bees and Queens.

**W. W. CARY & SON**
LYONSVILLE, MASS.

# Reasons for the Price
## OF MY
## Raspberry Honey.

I ask ten cents a pound for my raspberry honey. This is slightly above the market price, but there are reasons.

In the first place, very little raspberry honey is produced. It is a novelty—something out of the ordinary—like orange-blossom honey for instance.

In addition, it is of very superior quality; so much so that it was awarded the gold medal, in competition with other honeys, at the Jamestown Exposition. It has a flavor all its own—a flavor that smacks of the wild red raspberry of the woods.

Another most important reason why I should get a good price for my honey is the manner in which it is produced. It is left on the hives for weeks after it is sealed over, and thus acquires that finish, that smooth, oily richness, that thick, rich deliciousness that can be obtained in no other way.

It costs more to produce such honey, there is not so much of it, and it is worth more than the ordinary honey; just as big Northern Spy apples, streaked with crimson and filled with juicy spiciness, are worth more than ordinary fruit.

As a finishing touch the honey is put up in bright new 60-lb. tin cans, securely boxed, and the boxes bound with iron so that they will bear shipment; in fact, I will guarantee safe arrival in perfect condition.

For a single 60-lb. can the price is $6.25; for two cans in a case (120 pounds) the price is $12.00 a case, regardless of the number of cases that are taken.

If you are not acquainted with this honey, send me ten cents and I'll mail you a generous sample, and the ten cents may apply on the first order that you send.

**W. Z HUTCHINSON, Flint, Mich.**

# HONEY WANTED

**both**
**Comb and Extracted**
**of all kinds.**

No shipment too large for us. Send samples, and state best price delivered here. We remit as soon as goods are weighed in. Best of references furnished. Don't sell until you quote us price; it will be to your interest. Large stock of Root's bee goods carried constantly on hand. Greatest shipping center in the United States—both rail and boat. Try us.

**Griggs Bros. & Nichols Co.**
**523 Monroe St. .. Toledo. Ohio**

# Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin You can save freight by ordering from this branch. Complete line bee-keepers' supplies always in stock. Secure a catalog at once. BEES and QUEENS.—Your orders will be attended to.

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**1024 Mississippi St., St. Paul, Minn.**

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Makes section look more attractive, and increases selling price. Any one can apply it and get 2 to 4 cents more per pound, and it costs you only a fraction of a cent per section.

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# GLEANINGS IN BEE CULTURE

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FULTON CO. FAIR AT GLOVERSVILLE, N. Y.

Entries close August 29 at 9 P.M.

| | | |
|---|---|---|
| Best nucleus of Italian bees with queen | $2.00 | $1.00 |
| Best nucleus of Caucasian bees with queen | 2.00 | 1.00 |
| Best nucleus of Cyprian bees with queen | 2.00 | 1.00 |
| Best nucleus of Carniolan bees with queen | 2.00 | 1.00 |
| Best nucleus of black bees with queen | 2.00 | 1.00 |
| Full-sized colony of bees in glass hive, showing honey-boxes on top | 3.00 | 2.00 |
| Best display of comb foundation | 1.00 | .50 |
| SWEEPSTAKES. | | |
| Largest number of different races of bees by one exhibitor | 3.00 | 2.00 |
| Specimen of comb honey, not less than 20 lbs., quality and manner of putting up considered | 2.00 | 1.00 |
| Specimen of extracted honey, same conditions | 2 00 | 1.00 |
| Beeswax, most attractive display of not less than 10 lbs., bright yellow wax to have preference | 1.00 | .50 |

TENNESSEE STATE FAIR, NASHVILLE, SEPT. 21-26.

Superintendent, J. M. Buchanan, Franklin.

Special rules: 1. All products in this department must be pure, and free from adulteration. 2. Exhibitors at time of making entry must file a statement with the superintendent that the honey and other products they exhibit were produced in their own apiary.

| | | | |
|---|---|---|---|
| Best 10 pounds extracted honey in glass | $10.00 | $ 7.00 | $3.00 |
| Best display of extracted honey, 50 pounds or more | 20.00 | 10.00 | 5.00 |
| Best case comb honey, 12 pounds or more—quality and appearance to count | 10.00 | 7.00 | 3.00 |
| Best display comb honey, 50 pounds or more | 20.00 | 10.00 | 5.00 |
| Best 5 pounds granulated honey | 5.00 | 2.00 | 1.00 |
| Best one-half gallon honey vinegar | 5.00 | 2.00 | 1.00 |
| Best display beeswax, 25 pounds or more | 10.00 | 7.00 | 3.00 |
| Nucleus of dark Italians | 5.00 | 2.00 | 1.00 |
| Nucleus of golden Italians | 5.00 | 2.00 | 1.00 |
| Nucleus of Caucasians | 5.00 | 2.00 | 1.00 |
| Nucleus of Carniolans | 5.00 | 2.00 | 1.00 |
| Nucleus of any other race | 5.00 | 2.00 | 1.00 |
| Display of queen bees in cages | 10.00 | 7.00 | 3.00 |
| Best photograph of apiary | 2.50 | 1.00 | .50 |
| Largest and best display of bees, bee products, implements, etc.—exhibit to be made by individual bee-keeper | 25.00 | 15.00 | 10.00 |


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We will pay you 4 per cent—compounded twice a year on your savings account whether large or small—secured by assets of over 700,000. Send to-day for particulars explaining how you can open an account safely and conveniently by mail.

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THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

CHOICE

# QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3 00.
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

## Taylor's Strain of Italians

IS THE BEST.

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3.00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

**J. W. TAYLOR & SON, Beeville, Bee County, Texas.**

# BEE READY!

Do you know, Mr. Bee-man, that there will be a fall flow again this year? Remember how you got left last year by getting caught without supplies? I have Root's goods by the carload and can get them to you sooner than the "other fellow." Free catalog.

**E. W. PEIRCE, ZANESVILLE, O.**

# Italian Queens

**GOLDEN AND CLOVER STOCK.**

Choice queens, 75 cts. each; six for $4.00, or $7.50 a dozen

**GEO. W. BARNES, Box 340, Norwalk, O.**

# ITALIAN QUEENS

Large prolific queens of the Moore strain. Nice to handle, and good workers. Untested, 60c; 6 for $3.25; doz., $6.00, now going by return mail. **S. F. TREGO, Swedona, Ill.**

# HARDY GOLDENS!

Yes, I have them, and they *are* hardy—winter well, very gentle, and extra good hustlers. I know many goldens are the reverse of all this. I also know why, so do the breeders who sell them. My prices are high; but, every thing considered, they are cheap (see June 15th issue). I sell 20 goldens to one of any other race. Untested queen, $1.00; select tested, *guaranteed*, $2; tested, 3-band, $1. **C. Oscar Fluharty, Sandusky, W Va**

## CARNIOLAN, BANAT, AND CAUCASIAN QUEENS

Home-bred, $1.00 each; five at 80c each; Imported, $4.00 each.

**FRANK BENTON, - Box 17, - WASHINGTON, D. C.**

## RED-CLOVER QUEENS

200 lbs. honey from my breeding colony. Mostly red-clover honey. Untested queen, 65 cts.; tested, $1.00; doz., $7.00. Four-frame nuclei and fine tested queen, $4. **G Routzahn, Biglerville Pa.**

TRY SOME OF MY

## RED-CLOVER AND GOLDEN QUEENS

Italian strain, untested, 50c each. Mailed promptly; safe arrival and satisfaction guaranteed. Send for prices of breeders and tested queens. **M. BATES, Greenville, Ala., R 4, box 29.**

# "A cent to two cents per pound extra."

A prominent and reliable commission merchant was looking at two different lots of honey of about the same grade standing side by side, only one lot was packed in "Root Quality" cases. He remarked that he could sell the honey in the Root cases for a cent to two cents per pound EXTRA because of the attractive appearance the *case gave the honey.*

The difference in cost in packing honey in the "Root Quality" case or in the no-quality kind is from *one-eighth* to *one-twelfth* of a cent per pound. You can't *afford* to use other than the *best.* We sell "Root Quality" cases in Michigan. Order now.

**M. H. Hunt & Son,**
**Lansing, .. Mich.**

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IOWA STATE FAIR, AUGUST 20-28, AT DES MOINES.

1. Bees shall be in one-comb observatory hive with glass on both sides.

2. In awarding premiums in the different entries of honey the judge will give equal consideration to the quality of the honey and to the style of package in which it is exhibited as regards beauty and desirableness for purpose of marketing.

3. If there is only one exhibit in any specified article, and if in the opinion of the judge it is not worthy of first premium, he may award second or third, or none at all.

4. Exhibitors at the time of making entry must file a statement with the secretary that the honey and wax they exhibit were produced in their own apiaries.

5. Only one entry will be allowed any exhibitor for any one premium.

| | | | |
|---|---|---|---|
| Largest and best display of comb honey, not less than 300 pounds | $20 | $15 | $10 |
| Largest and best display of extracted honey, not less than 100 pounds | 20 | 15 | 10 |
| Case of comb honey (clover or linden), not less than 12 sections | 4 | 3 | 1 |
| Case of honey (fall flowers) | 4 | 3 | 1 |
| Extracted honey (clover or linden), 10 pounds | 4 | 3 | 1 |
| Extracted honey (fall flowers), 10 pounds | 4 | 3 | 1 |
| 3 frames comb honey for extracting | 3 | 2 | 1 |
| Display of beeswax, not less than 20 pounds | 6 | 4 | 2 |
| Display of designs in beeswax | 6 | 4 | 2 |
| Golden Italian bees, with queen | 4 | 2 | 1 |
| Dark Italian bees, with queen | 4 | 2 | 1 |
| Carniolan bees, with queen | 4 | 2 | 1 |
| German bees, with queen | 4 | 2 | 1 |

SWEEPSTAKES.

| | |
|---|---|
| Largest and most attractive display of comb and extracted honey, wax, bees, implements, etc., owned by exhibitor | 25 |

Note.—Clubbing together of exhibitors to make this display will not be permitted.

---

WISCONSIN STATE FAIR, MILWAUKEE, SEPT. 7-11.
Judge, Frank Wilcox.

Premiums open to all, but exhibit must be the product of bees of exhibitor.

| | | | | |
|---|---|---|---|---|
| Most attractive and finished display of comb honey | $12 | $10 | $7 | $2 |
| Case white comb honey, 12 to 24 pounds | 8 | 6 | 4 | 2 |
| Case amber comb honey, 12 to 24 pounds | 8 | 6 | 4 | 4 |
| Display of honey in extracting-frames | 5 | 3½ | 2½ | 1½ |
| Most attractive and finished display of extracted honey | 12 | 10 | 7 | 4 |
| Case extracted white-clover honey, 12 pounds or more, in glass, labeled | 8 | 6 | 4 | 2 |
| Case extracted basswood or linden honey, 12 pounds or more, in glass, labeled | 8 | 6 | 4 | 2 |
| Case other white extracted honey, 12 pounds or more, in glass, labeled | 8 | 6 | 4 | 2 |
| Case extracted amber honey, 12 pounds or more, in glass, labeled | 8 | 6 | 4 | 2 |
| Display extracted honey, granulated or candied | 8 | 6 | 4 | 2 |
| Beeswax, best quality, 10 pounds or more | 6 | 4 | 3 | 2 |
| Honey vinegar, not less than one gallon, in glass | 4 | 3 | 2 | 1 |
| Nucleus of golden-yellow Italian bees and queen | 8 | 6 | 4 | 2 |
| Nucleus of dark or leather-colored Italian bees and queen | 8 | 6 | 4 | 2 |
| Nucleus of Carniolan bees and queen | 8 | 6 | 4 | 2 |

GRAND SWEEPSTAKES.

| | | | | |
|---|---|---|---|---|
| Largest, best, and most attractive exhibition in this department, all things considered | 15 | 12 | 9 | 6 |

FARMERS' EXHIBIT.

Exhibitors in numbers 2 to 17 inclusive can not enter exhibits in "Farmers' Exhibit."

| | | | | |
|---|---|---|---|---|
| Case white comb honey, 12 to 24 pounds | 3 | 2½ | 2 | 1 |
| Case amber comb honey, 12 to 24 pounds | 3 | 2½ | 2 | 1 |
| Case dark comb honey, 12 to 24 pounds | 3 | 2½ | 2 | 1 |
| Case white extracted honey, 12 pounds or more, in glass | 3 | 2½ | 2 | 1 |
| Case amber extracted honey, 12 pounds or more, in glass | 3 | 2½ | 2 | 1 |
| Case dark extracted honey, 12 pounds or more, in glass | 3 | 2½ | 2 | 1 |

FARMERS' SWEEPSTAKES.

| | | | | |
|---|---|---|---|---|
| Largest, best, and most attractive exhibition in this department, all things considered | 8 | 6 | 4 | 2 |
| Most original and attractive design in comb honey | 4 | 3 | 2 | 1 |
| Most original and attractive design in beeswax | 4 | 3 | 2 | 1 |
| Candies made with honey, quantity, quality, and display considered | 5 | 3 | 2 | 1 |

DEMONSTRATION—(Open to all).

| | | | | |
|---|---|---|---|---|
| Competitive live-bee demonstration; each contestant to furnish his own demonstration cage | 20 | 15 | 10 | 5 |

# BOOKS of All Kinds on CREDIT

You can have all the books you need by our plan. Write for that beautifully illustrated and descriptive book. "A Book Store in your home." It is free. Write today. We guarantee quality and value. Our prices the lowest. Write for catalog. It is free. The largest mail order Book house in the world. 48 years in business.

Dept. GB28 THE FRANKLIN-TURNER CO., 65-71 Ivy St., Atlanta, Ga

# WHAT'S THE USE

## OF HAVING FINE HONEY IF IT IS IN POOR PACKAGES?

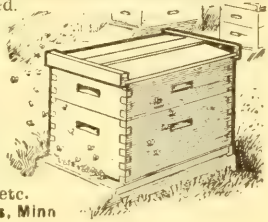
If you are among the fortunate ones who have secured a good crop of honey, surely you will not be so unbusinesslike as to sell it in second-hand or inferior cases. Your honey will sell far easier in nice new cases or tins. WE HAVE THEM.

**John Nebel & Son Supply Co., High Hill, Mont. Co., Mo.**

# BEE KEEPING will be a profitable industry this season.

Honey is high—short crop last year. The shortage of the honey crop for 1907 in the United States warrants bee-keepers to increase their colonies. About a half crop was produced, and in California, where the cheap honey comes from, only a quarter of the average crop was produced.

## Get Ready Now for More Honey



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# THE PERSONAL ELEMENT IN BUSINESS

*By the Bee Crank.*

The big corporations of the day are like monstrous machines in which men are only cogs in a wheel. When a court of justice undertakes to discipline them it finds difficulty in locating personal responsibility on any one, from president to office boy.

My bee-supply business is not run in this way. True, I do not do every thing myself. I am fortunate in having competent assistants. But I keep in touch with every transaction, and you may be sure that your order, whether large or small, receives my own personal attention.

This explains why "If goods are wanted quick, send to Pouder," you get them quick. If you have experienced the other kind of service and believe, as hundreds of my patrons do, that the personal attention of the man you deal with is worth while, send me your next order as a trial.

I have a full line of Root's standard goods in stock, ready for immediate shipment. I sell them at factory prices and give you Pouder service. Just now the demand is for shipping-cases, sections, and honey-jars, and I am prepared.

Better send for my catalog if you haven't it. If more convenient, order from Root's.

Beeswax.—I have a large demand, and can use all you have to spare at 28 cents cash or 30 cents in trade, delivered here.

Hoosier-Italian queens, reared during the warm honey season. Untested, 75 cents each; select untested, $1.00.

WALTER S. POUDER, Williamsburg, Ind.
*Dear Sir:*—I earnestly hope the foul-brood measure will become a law. It would be a great thing for Indiana, and I would feel like taking hold of the business in a much more earnest way. I have taken nearly 2000 pounds of comb honey from 18 colonies this season, and the bees are Walter S. Pouder's Hoosier-Italians. Truly yours, THOMAS A. OLER.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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VOL. XXXVI AUGUST 15, 1908 NO. 16

## STRAY STRAWS

DR. C. C. MILLER

R. F. HOLTERMANN thinks it important that no young brood be present where a queen is to be introduced, p. 932. In Germany the opposite view is held. Which is right? [Who else has any thing to offer on this question?—ED.]

WHEN BEES put burr-combs between two supers of sections they are generally of pure white wax; but sometimes I find them quite dark, when, so far as I know, the sections above and below are all right. Do the bees bring up dark wax from the old brood-combs, conclude it's too bad to darken the pretty sections, and end by dumping it between the supers?

A YIELD of 174 sections from a single colony before the close of July is something that doesn't happen every year "in this locality." This year it has happened, and the bees are still pegging away as if doing their best to kill us with work. We're still alive. [This would indicate, doctor, that you have had a good season. If one of your best colonies gives a yield of 174 sections, your average must have been high. Would you be kind enough to tell us what it was?—ED.]

DR. S. P. SCHROEDER thinks he has positive proof that the bees and not the queen do the killing of the other queen. Over a brood-chamber was an excluder, then an extracting-chamber covered with wire cloth, over which was a nucleus which reared a young queen. After the young queen had been laying a week or more the wire-cloth was replaced by an excluder. The next day he looked for her, but she lay dead on the upper excluder. Most certainly in this case the queen was killed by the bees, for the queens could not get within several inches of each other. Pretty clear proof. [The proof here is quite conclusive. We should be glad to hear from any others who have been able to make any accurate observations on the point.—ED.]

EVER NOTICE that bees are more particular about the combs they put brood in than about those they put honey in? Give a colony a comb which is so bad that it is a question whether it will be accepted at all, and the bees will first use it for honey, and afterward for brood. Does the honey help to soften the comb? Even foundation is often drawn out and used for honey before being used for brood. Colony No. 101 had distinguished itself as a honey-producer, and I wanted a freshly built comb of brood from that colony to start queen-cells from. If I gave an empty frame it would be mostly filled with drone comb. So I gave a frame filled with worker foundation. It was promptly drawn out and filled with honey, but not an egg was laid in it till 15 days after it was given. [Yes, we have noticed just what you have described.—ED.]

LATELY I've been taking a lazy way to introduce queens. Instead of putting the caged queen between the brood-combs or over the top-bars I just stick the cage in the entrance. Then after leaving her fast in the cage for three days I take out the cage and uncover the candy so the bees can let her out. That's much easier than to open the hive to get at the cage, especially if there are four to six supers on the hive. Then at any time I can easily see whether the queen is out of the cage, for it occasionally happens that a queen stays in the cage for days after the bees have eaten out the candy. Then, too, there may be some advantage in the position of the cage, for Mr. Doolittle has told us something to the effect that the bees feel the presence of a caged queen more if she is caged near the entrance. At any rate, I have tried it in at least eight cases, and it worked all right. [We believe this plan is all right, and may be safely practiced in the case of medium-priced queens.—ED.]

YEARS AGO, on hot days my bees hung out in great clusters. Just been down to the apiary, this July 30, 11:30 A.M., with the thermometer 93 in the shade, and not a single colony hanging out. Entrances are much larger now than formerly, super-room more abundant, and there is ventilation at the top of the hive back of the super. Don't know of any thing else to account for the difference.

2:40 P.M. Thermometer now 99 in the shade, but not a colony hanging out. [More and more the evidence is accumulating, to the effect that top and bottom ventilation in the height of a honey-flow as here described may be profitably used in preventing the clustering-out and keeping all the he bees at work. It used to be said that top ventilation of a super should not be tolerated for a moment; but so many of our good men have found to the contrary that we may well stop to consider whether the old dogma should not now be laid aside. In this connection, also, more and more proof is coming in that a large entrance during the height of the honey-flow is an advantage, although there are some good bee-keepers who claim that the old entrance, ⅜ inch deep, is amply large.—ED.]

IN POOR SEASONS I've often known a bait section in a super to be filled and other sections untouched. This year it happened in a flood of honey. A weak stray swarm took possession of some idle combs. I straightened it out and gave

it a super with a bait comb. It filled the bait and sealed it before touching the other sections.

Opinions differ as to whether a colony will swarm out with a virgin on her bridal trip and never return, leaving the colony queenless. This year No. 25 sent out a swarm, and I had reason to know that it had a virgin queen. I hived the swarm, gave it a frame of brood, set it on top of its old hive, and when the queen began laying I united it with the colony below, which had remained queenless. No. 97 swarmed out in the same way, and clustered on a tree. I knew it must have a virgin, but I left it to its own devices. In a quarter of an hour—may be half an hour—it returned of its own accord, although part of the cluster remained till the next day. No. 69 did about the same thing. Query. If I had not hived No. 25, would it have returned of its own accord, or would it have left for parts unknown? Please understand, in each of the three cases it was not merely a small escort accompanying the queen, but a rousing big swarm. [Your experiment seems to favor the view that a swarm will not go off, leaving nothing in the way of a queen or cell in the parent hive. Has any one else any positive evidence to offer on the subject?—Ed.]

# EDITORIAL

By E. R. Root.

### A BEE-KEEPER'S DICTIONARY.

The *American Bee-keeper* has expressed the opinion that there would be a demand for a bee-keeper's dictionary. Mr. W. K. Morrison, of this office, has carefully compiled such a volume, adding a lot of lately coined words as well as all those in current use in various parts of the country among bee-keepers. It has been off the press now for nearly a year, and is filling a long-felt want.

### A HIVE-LIFTING WHEELBARROW.

On page 997 we present drawings of a hive-lifting wheelbarrow which we believe might be made very effective, although we have never tried it. But the trouble is, that many bee-yards are located on uneven ground, where it would be impracticable to use an outfit of this kind. Some apiaries are located in back yards, where the room is very limited. In these the hives would necessarily have to be arranged so close together that it would he impossible to use a wheelbarrow of any kind.

### BE CAREFUL TO WHOM YOU SELL YOUR HONEY.

The season for marketing honey has begun. While it may seem like an unnecessary repetition, we desire again to caution you to be careful to whom you send your honey. When you sell for cash, be sure that your man is responsible. If you can not learn any thing about him, you had better sell on commission; for then he can be held liable if he takes your honey without rendering you returns. But he may make very meager returns, and delay making payment. So we advise you not to trust any one unless he has a good rating and a reputation for dealing on the square. Better take a little less price, and deal with a man of known reputation.

### EXTRA-YELLOW ITALIANS REPORTED GENERALLY CROSS.

We are getting complaints from all over the country, to the effect that extra-yellow bees are much crosser than the old-fashioned hybrids of blacks and Italians. This has been our experience year after year; but, strangely enough, we are compelled to furnish this yellow stock because the trade will have it, in spite of its bad temper and also its lack of hardiness. While there are some strains of extra-yellow blood that are gentle and hardy, they are the exception. So far as experience has shown us, there is nothing better than the old-fashioned leather-colored Italians; and we are inclined to believe that a little admixture of black blood improves them for honey.

### A VISIT FROM A RUSSIAN GOVERNMENT OFFICIAL.

We had the pleasure of a visit from Mr. Dmitry Arcibasheff, manager of the Farm Implement Bureau of Ministry of Agriculture of St. Petersburg, Russia. He was accompanied by Mrs. Arcibasheff, and the two were making a rapid tour through the United States, stopping off but a few hours at Medina.

We found Mr. and Mrs. Arcibasheff very intelligent and interesting people. They were gathering data on the subject of bee culture with a view, probably, of carrying it to Russia.

The Russian government has already taken a lively interest in the general subject of bee culture. It was only recently that it appointed Mr. Abram Titoff as apicultural expert with headquarters at Kieff.

### BOUNTIFUL RAINS AND DROUTH.

We have been having some bountiful rains in this locality. Only once had we begun to feel the pangs of drouth; but that was almost immediately followed by a long and copious rain. White and alsike clovers are still out; for every time we get a rain like those we have been having, it seems to start the blossoms out again.

A recent trip through Southern Michigan showed that that State had been suffering from a severe drouth; and we observed that, along the line of the Pere Marquette Railway, the grass had been burned down; and as the train whizzed by, every now and then we could see the burning fences or burning grass. The crops, too, were beginning to show a lack of rain. Reports show that there is drouth in many parts of the country.

### THE HONEY-MARKET SITUATION.

Very little has developed new other than as reported in our last issue, page 930, except that quite a number of discouraging reports have come from the State of New York. But there has been a good crop of clover honey in the clover belt as a whole. In some sections of it, however, the season has been poor, especially in parts of New York and Maine. The fruit crop, in spite of statements to the contrary, seems ro be very meager in many of the States; and this will have a tendency to make the market for honey

more stable in spite of the large crop of honey that has been secured. Reports from everywhere show that clover honey this year is of exceptionally fine quality. It has been an old-fashioned clover year.

In Eastern Colorado the indications show that there will be a fair crop. As to the Western part of the State the following letter will explain:

The western part of Colorado has had but a very light flow from alfalfa, and unless we have rain there will be no flow from sweet clover. GUY CLARK.

Crawford, Col., July 26.

### DANGER OF ROBBING AT THIS TIME OF THE YEAR; THE VALUE OF THE ROBBER-TRAP.

Now is the time to avoid robbing. Nothing costs the bee-keeper more than to let a bad case of robbing get started; for so long as these robbers exist at all they will continue to annoy both the bee-keeper and the weak colonies. We do not nowadays intend to let robbing get started; but if it does, we use the robber-trap. This is nothing more nor less than a common hive with a Porter bee-escape so arranged at the entrances that the robbers can pass into the hive but not out again. Something more effective than the Porter for this purpose is a long flat wire-cloth cone, the apex of it reaching about to the center of the bottom-board. The robbers will enter this better; and as the point of the cone is so far from the entrance they do not find their way back. This trap is put on the stand of the robbed colony, when, presto! they are caught. When the robbers are once trapped they should be taken immediately to an isolated location or brimstoned. Having once acquired the stealing habit they will do tenfold more damage in a bee-yard than they can ever do good, and it is "a mighty good riddance" when they are removed entirely.

### SUSPENSION OF THE "AMERICAN BEE-KEEPER."

THE announcement appears in the August issue of the *American Bee-keeper* that that number will be its last. In extending words of good by, the editor, Mr. Harry E. Hill, offers his thanks to friends and colaborers in this very nice way:

GOOD BY.

To every thing earthly there must be an end. So far as the present editor and publishers are concerned, the end of the *American Bee-keeper* has been reached. This is the last edition of the *Bee-keeper*, and I wish to express my sincere appreciation of and gratitude for the courtesies of my numerous readers whose kindnesses enabled me, during the first eight years of my connection with the paper, to increase its subscription-list from six hundred to nearly three thousand copies a month. Memories of these friends will always be recalled with pleasure.

After nearly eleven years of pleasant associations with the bee-keeping brethren of the English-speaking world, as editor of the *Bee-keeper*, it is with a feeling of profound regret that I bid them good by, and to each and every one of my readers I wish a full measure of success and happiness.

For several years past, other business interests have claimed my full attention, and I have repeatedly tendered my resignation to the publishers. This has always been met by the question, in substance, "What will you take to stay with us?" I was compelled to name my price, and it was always promptly conceded. This old round world never held two more whole-souled, honorable, conscientious, and worthy business men than W. T. Falconer and D. E. Merrill, who have been my employers in this work, and I naturally wished to do all in my power to reciprocate their courtesies in business, and I held on.

Mr. Hill is a good bee-keeper and a ready writer. He has an easy-flowing, forceful style, and his stepping down from the apicultural field of bee buzzings will be regretted. We trust that we may hear from him occasionally through other mediums now published. He has other business interests outside of bee-keeping, and long since desired to be relieved.

The untimely death of Mr. D. E. Merrill, of the Falconer Co., mention of which we made on page 757, June 15th issue of this journal, so increased the responsibilities of Mr. Falconer that he did not care to continue the publication of the paper. It is announced that all subscription moneys paid ahead will be refunded as soon as it is practicable to do so.

### CYRENIUS' CLIPPED TURKEY FEATHER FOR BRUSHING BEES.

MR. F. H. CYRENIUS, of Oswego, N. Y., of whom mention was made on page 928, last issue, while here at Medina, inquired if we had ever used a turkey feather for brushing bees off from combs.

"Yes," we said, "that is older than the hills."

"But," he said, "the feather I use is trimmed down to within ⅜ inch of the midrib. This makes the bristles stiff, and, unlike a brush or broom, it does not roll the bees off from the combs, making them angry, but *lifts* them off their feet — the stiff spines of the feather passing right under them."

He has sent a sample trimmed as he recommends. If you can imagine a long stiff turkey feather with the soft portion on either side trimmed down to within ⅜ inch of the quill or midrib, you will have his improved brush. He calls attention to the fact that this brush is so light that it can be carried over the ear like the old-fashioned quill pen of the schoolmasters of ye olden times.

We suggest that some of our extracted-honey men try the clipped-quill brush, and report how they like it.

### A GOOD SCHEME FOR EMPTYING COMBS CONTAINING ODDS AND ENDS OF HONEY, WITHOUT THE USE OF THE EXTRACTOR.

ON reading this heading you may say there is nothing very wonderful about this — that all one needs to do is to scatter the combs, after the honey-flow, around in the yard where the bees can get at them, when they will very soon clean them up. Y-e-s; but it causes more or less of an uproar; and after the honey is gone, the bees are likely to pounce upon weak nuclei or to sting viciously. We would not advise practicing this near a public highway unless the combs would be emptied along about nightfall. They should then be taken away. During the night the bees will recover to a great extent from their excitement, and will be less likely to cause disturbance next morning.

The suggestion has been made to remove all such combs some rods away from the yard. This is far better than exposing them in the apiary itself. But even this has its disadvantages, for it will take some hours before the bees find the honey. Feeding syrup outdoors is good; but one should generally use a feed made of water and granulated sugar, two of water and one of sugar; and that syrup should be placed in feeders so constructed as to permit the bees taking it only very slowly. When so arranged the rob-

bing of other hives can be entirely overcome. Indeed, one can do extracting at such times without a robber appearing, even though it be during a dearth of honey; but for the purpose of extracting, one should use honey diluted with water.

The scheme we had in mind, however, for emptying out old combs containing odds and ends of honey, and perhaps a sugar syrup which can not be marketed, is on a plan somewhat modified from those described above. Our Mr. Mell Pritchard, who has charge of our north yard, had quite a lot of combs, some of them filled with the sugar-and-honey mixture—a combination which, obviously, can not be used for the market. He did not care to mess up the extractor, as he had only a few of them; and even if they were extracted they would be wet; and when the bees cleaned them up they would put some honey back into them again, and, besides, some of the combs would be undesirable, fit only for the melting-tank. He placed a number of these about nightfall in front of the hives, one frame in front of each entrance. A little later, after a few bees had clustered on the combs, he put them in hive-bodies and carried them about a quarter of a mile from the apiary, and set them down. The next morning those bees, filled with honey, of course, flew homeward and deposited their loads, and went back for more, and so until the combs were completely emptied.

But you may say that this operation involves as much work as the use of the extractor. Perhaps; but it has the merit of making a genuine honey-flow so one can carry on some special work in opening the hives which he may have in mind. So far from making a general uproar it makes absolute quiet in the yard, and takes care of all the robbers. In this way Mr. Pritchard emptied out quite a bunch of combs. Those that were good he could use over again in feeding to produce cells, and the others were consigned to the scrap-pile, and melted up.

But he had one other plan that worked very well. He put a comb of honey in a shallow box having a passageway connected with the entrance of the hive. The object of covering the comb was to keep away outside robbers, and at the same time permit the inmates of the hive to rob out the honey slowly. This comb feeder worked very well, especially in the case of combs that are imperfect, or which contain only a small amount of honey. In fixing bees up for winter it is not desirable to give combs containing only a little honey.

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### UNCAPPING-KNIVES; SHOULD THEY BE HOT OR COLD FOR UNCAPPING?

We have been making some experiments in testing hot and cold knives heated in hot (not boiling) water, kept so in a pan over a small kerosene-stove. Where the honey is thick, and the comb new, the hot knife is unquestionably better than a cold one for taking off the cappings, for the reason that the latter is quite likely to break down the cell walls of tender comb. When it comes to old combs, a sharp keen-edged cold knife will do very good work; but a hot blade, not quite hot enough to melt the wax, will do faster and better work. But the trouble is, the knife cools quickly, and then it must be exchanged immediately for another one just out of the hot water. This consumes time; and it is a question whether, with old combs at least, some of our producers would not think they could work faster with a cold knife provided the edge was very keen. We should like to get some expressions from our subscribers who have had considerable experience in uncapping.

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### THE TERRIBLE AFFLICTION THAT HAS COME TO E. W. ALEXANDER.

Our friends have probably noticed that Mr. Alexander has not written very much of late. This has been owing to his poor health. But we did not suppose that there was any thing serious until the following letter came.

We wrote Mr. Alexander, asking certain questions, and toward the close of his letter, which was dictated, he writes:

> *Friend Ernest:*—This is the first letter I have tried to dictate in a long time. I have been sick—oh, so sick!—that I have been able to walk only a few rods at a time around home. I returned from the hospital on Friday, where I was attended by six of the most eminent doctors and surgeons of this State. They all agreed that my trouble was incurable; that an operation might prove fatal—it certainly could do me no good. They advised me to go home, settle up my business, and live wholly for to-day. I have not opened a hive of bees since they were taken from the cellar last spring, and have been but very few times in the bee-yard. E. W. Alexander.
>
> Delanson, N. Y., July 29, 1908.

We feel sure that all of our readers will be very sorry to hear this. Mr. Alexander has been a frequent and valued contributor, as many letters that have come to this office testify. Only three days ago Mr. Chalon Fowls, of Oberlin, Ohio, a prominent producer of extracted honey, remarked to H. H. Root, who was then visiting him, that the Alexander strainer for extracted honey was one of the best things he had ever tried. As soon as he saw a description of it in Gleanings he immediately had one made, and found that it answered the purpose perfectly.

There are several other useful devices as well as methods of management that Mr. Alexander has placed before our readers. While at times he may not have seemed orthodox, yet it must be remembered that he occupies a locality where conditions are peculiar not to say remarkable. Our friend is the only bee-keeper in the United States who has ever been able to manage from 700 to 800 colonies all in one apiary. Others have had as many as 500. While his location is peculiarly favorable for the keeping of a large number of bees in one place, yet the mere fact that his neighbors, with practically the same environment, do not keep more than 200, would seem to argue that there must be something in his management. He has freely given us of his ripe experience covering many years, and many who are using his ideas will hold him in grateful memory.

We desire at this time to pay tribute to a really great bee-keeper before his career shall be closed for ever. We say "great" because he is great in many ways. He is a broad-minded, large-hearted, lovable man, and many have been the pleasant hours we have spent with him and his family. To see and know the man has been indeed a privilege.

# GLEANINGS FROM OUR FOREIGN EXCHANGES

By W. K. Morrison

Some one in the *British Bee Journal* recommends the logan berry as a splendid plant for bees. California is the homeland of this berry, yet we have had no reports of any great results, though large areas are planted with it near Santa Cruz and Watsonville, California. Will somebody living there let us know its intrinsic value as a honey-plant?

The bee-keepers of the two Charentes held in July an international exhibition, lasting three days, of bees, bee-appliances, and honey, at Saintes, a town in France of about 20,000 inhabitants. This gives us a fair idea of the enterprising spirit which characterizes many of the European bee-keepers' societies. It takes a considerable amount of money and a great deal of work to conduct such a meeting; but it is worth it in the enthusiasm it creates.

### THE LENGTH OF BEES' TONGUES.

Professor Kulyagin, of Russia, claims to have found a very accurate method of determining the length of a bee's tongue; and after many measurements he gives the following averages expressed in millimeters: Russian, 6.21; American, 6.22; Italian, 6.25; Cyprian, 6.50.

### A DISTINGUISHED BEE-KEEPER.

Mr. E. Beuve, president of the Society of Apiculture for Aube, in France, has received from the president of the republic the Order of Merit (Agricultural) on account of his long and useful services to apiculture. He is teacher of apiculture in the normal school at Troyes. He commenced in 1858, and has kept for years 700 to 800 colonies, which is a very large number in a country like France.

### TRANSVAAL BEE-KEEPERS' ASSOCIATION.

Johannesberg now has a full-fledged bee-keepers' association with the above name. Those at the top are the Earl and Countess of Selbourne; the Minister of Land, the Minister of Agriculture, and General Louis Botha. It is intended to have branch associations in the principal centers, and one is in course of organization at Pretoria. The conditions are suitable in South Africa, and in time the land of Angora goats and ostriches, diamonds, and gold will probably figure largely in the bee-keeping world. I note the colonists show a decided preference for American bee-supplies, in which they follow the example of other British colonies.

### THE DEATH OF ZOUBAREFF.

The *British Bee Journal* recently announced the death of a famous Russian bee-keeper, M. A. F. Zoubareff, at the ripe old age of 87 years. He went to school with Pobedonostseff, Procurator of the Holy Synod of Russia, who died last year. Readers of the newspapers will remember it was Pobedonostseff who inspired the Czar to resist all reforms. On account of his health Zoubareff went to Switzerland in 1883, and there became acquainted with Mr. Ed. Bertrand, who converted him to the Langstroth hive and system. Hitherto he had advocated the Dzierzon-Berlepsch system. He was largely instrumental in inducing the Russian bee-keepers to adopt the Langstroth hive. He wrote a book with this end in view, chiefly to instruct schoolteachers in our system. He also translated Mr. T. W. Cowan's *Bee-keepers' Guide Book* from French into Russian, and otherwise worked faithfully to help Russian bee-keepers find the most profitable system of bee-keeping. He lived close by Lake Ladoga, not far from St. Petersburg.

### THE FRENCH SOCIETY OF APICULTURE.

There was a general assembly of the French bee-keepers' societies held at 61 Lafayette Street, Paris, March 31. The congress was presided over by Mr. Dumont, the vice-president. Dinner was served, the principal items of which were hydromel, honey ginger-bread, and pure honey. Probably the most important topic discussed was what the tariff on foreign honey should be. It is evident the French are afraid of foreign honey, and they intend appealing to the Chamber of Deputies for a higher tariff. They decided 30 per cent would be sufficiently protective on table honey; but for all others, particularly that used in bakeries, 50 per cent would not be too much. The matter of duties will come before the Chamber of Deputies during the political year of 1909, and it is expected they will be guided by what the bee-keepers have recommended.

### PRICES OF HONEY AND WAX IN HAMBURG.

According to Mr. Richard Brückner, in *L'Apiculture Nouvelle*, the prices of honey and wax in Hamburg are as follows: California honey, 9 cents; Chile, 4½ to 5; Cuba, 5 to 5½; San Domingo, 5 to 5½; Havana, 5; Mexico, 5. Beeswax from Benguella, 30 cents; Brazil, 30; Chile, 30; Cuba, 32; Madagascar, 29; Morocco, 30; Japan (vegetable wax), 10; Carnauba (palm wax), 31; and gray Carnauba, 22.

One might conclude from this that the Germans are getting some cheap honey; but the duty is high; and this, together with commissions and other charges, probably doubles the price before the consumer is reached. This is rather a pity, as the Germans are fond of honey, using it in many ways. There is no prospect that the duty will be lowered; on the contrary, the tendency is toward a high tariff, and the same is true of France. They do not believe in the doctrine, "Peace on earth and trade with all mankind."

### BEES AND FRUIT.

The *Daily Mirror*, of London, has entered on a novel experiment to test the value of bees as pollenators of fruit flowers. It has installed on the roof of the *Mirror* office two hives of bees with the expressed intention of finding out the value of bees to flowers. It has also arranged to send experts around to observe the effects of the flowers. The secretary of the Royal Botanic Gardens said that the fruit-trees in gardens gave little or no fruit, though every possible attention was

given them and the blossoms were profuse. Failure to fruit he attributed to the lack of bees to pollenize the blossoms. He thought bees had a far greater effect on plant life than most people had any idea of. Frequently, he said, the want of fruit was attributed to the cold weather in spring when rather it was due to the dull and chilly days causing the bees to stay at home during the blooming period. This testimony is interesting, coming as it does from the largest city on earth, where smoke and grime gild every thing, even the flowers, fruit, and honey. No doubt the bees will "make good."

"WAX CRAFT," BY T. W. COWAN.

This is certainly the best book on beeswax which has yet appeared in English or any other language. It covers the whole subject in a manner which leaves little to be desired. The book itself is admirably printed and bound; in fact, it is a model of its kind—a credit to its publisher, L. Upcott Gill.

It commences with a historical sketch, giving a vivid account of the place of beeswax among the great oriental nations of antiquity, and following on to the present day. A beautiful illustration is given, as a frontispiece, of an encaustic wax-painting taken from Herculaneum. It is copied from a steel-engraving by F. A. David (Paris, 1780). Other illustrations of a like nature enliven the text and add materially to the value of the work.

Beeswax must have been an important article in the days of the Pharoahs, for on page 31 we read :

From a papyrus of Rameses III. we gather that payments were made from the royal treasury of sacrificial funds, such as the following:
331,702 jars of incense, honey, and oil;
3,100 teben of wax;
1,933,766 jars of incense, honey, fat, oil, etc.

In the times of Zoroaster, his worshipers burned candles in their worship of the sun-god. It was also done by the pagan Romans and also by the Greeks of Attica in honor of the god Ceres. Of course, the great Greek and Catholic churches use immense quantities of beeswax candles in their church services, and the worshipers of Buddha in Ceylon also consider wax candles indispensable. These candles have been used to light cities, for the Emperor Constantine ordered Constantinople to be lighted on Christmas eve by means of lamps and wax candles. In the city of Fez to this day the birthday of Mahomet is celebrated by every schoolboy carrying lighted torches of beeswax, some of them weighing as much as 30 lbs. In the early days of the Catholic Church, votive offerings were frequently made of beeswax; and it is related that the church of the Annunciation, in Florence, had its walls completely covered by them.

In ancient times beeswax was used as a medicine. Pliny says: "Every kind of wax is emollient and warming, and tends to the formation of new flesh; fresh wax is best. It is given in broth to persons troubled with dysentery, and the combs themselves are sometimes used in a pottage made of parched alica. Wax also counteracts the bad effects of milk; and ten pills, the size of a grain of millet, will prevent milk from coagulating in the stomach."

Both Herodotus and Strabo state that beeswax was used for embalming the dead.

It must be evident to the reader that the production of beeswax "in ye olden tyme" must have been very great, and it was. For example, in the year 181 B. C., Prætor Pinarius, after defeating the inhabitants of the island of Corsica, imposed on them an annual tax of 100,000 lbs. of wax, and two years thereafter doubled it. Again, we read that in 1632 John de Frettar, sexton of the monastery of Chaise Dieu, in France, stipulated for an annual rent of 600 lbs. of beeswax.

In London "The Worshipful Company of Wax Chandlers" was organized as early as 1371, and still exists, chiefly for ornamental purposes. It obtained a royal charter in 1483.

How the bee produces wax is fully described, but we need not here advert to it. One paragraph, however, is worth quoting.

Huber, after a series of experiments, several times repeated, proved that bees fed on honey and water produced wax; while, if fed only pollen, none was produced. He also showed that bees fed on sugar syrup were able to produce wax, and (after several consecutive trials) that those fed with syrup made of sugar made more wax than when fed on honey, brown moist sugar yielding the largest quantities. These results were corroborated by Dumas and Milne-Edwards, who in 1844 repeated Huber's experiments and found that 500 grams of sugar yielded 30 grams of wax, while the same quantity of honey produced only 20 grams. Other observers, such as Gundelach and Berlepsch, have obtained similar results, so that Huber's conclusions may be considered as established.

Pages 53 to 72 inclusive are devoted to the subject of wax-rendering. Beeswax in commerce has a short chapter. Mr. Cowan states that the beeswax of Guadeloupe and Brazil will not bleach, but remain a mahogany color. This is not to be wondered at, for the bees of Guadeloupe and Brazil are stingless, producing quite a different kind of wax from ours. They produce beeswax almost the same as the kind we have; but they mix it with propolis to a considerable extent. It is interesting to know that the waxes of England, Hamburg, Odessa, Portugal, Mogador, Zanzibar, East and West Indies, and North America all bleach very rapidly, while those of Cuba, Danzig, Konigsberg, Gaboon, and Gambia bleach with difficulty. Twenty-one pages are devoted to the subject of wax adulteration; and anybody who understands the subject will agree with me that the importance of the subject justifies it.

In chapter VII. Mr. Cowan carefully considers the manufacture of comb foundation. Coloring wax occupies chapter VIII.; wax candles and tapers have chapter IX.; manufacture of wax flowers has chapter X.; while chapter XI. contains 110 recipes in which beeswax is a prominent ingredient. Possibly this last is the most valuable part of the book, as one good recipe may be worth more than the price of the book.

We have long wanted a book of this kind. Beeswax is a very important object in commerce; it is almost equal to gold in all markets. Merchants anywhere are ready and willing at all times to take it in payment for goods, and the price fluctuates very little. It therefore deserves a very nice book.

Anything Mr. Cowan writes is worth reading; and this last proves that his pen has lost none of its cunning. It is a work which ought to be in every bee-keeper's library. For prices see Special Notices.

# FANCIES AND FALLACIES

By J. E. CRANE

The testimony of E. W. Alexander as to the value of bees to farmers, page 642, should not be forgotten when neighbors complain of our bees.

FORMING NUCLEI.

The plan of forming nuclei from queenless colonies to make them stay in place, as given by Dr. Miller, page 622, May 15, is well worth remembering. It is a good practice, when we find any new method of management or manipulation, to put it to the test in a small way, and then we do not forget it.

PREVENTING LEAKAGE IN HONEY-JARS.

Mr. C. F. Smith is on the right track in using soft paper to prevent leakage in covers to tumblers filled with honey, page 624. I have often thought that if we had something like blotting-paper for the inside of caps like the Simplex and other jars, it would be far better than the hard board now sent with them. The soft paper gives, and a close joint is made.

KILLING MOTHS.

On page 571, May 1, Prof. H. A. Surface adds much to our knowledge for controlling the ravages of the bee-moth, and I have put his plan to the test and find it easily used. I have turned down a corner of that page so as to find it easily. The recipe is easily remembered, but it may be well to have his article handy to refer to, to be reminded of his cautions about using the dangerous drugs.

BOTTOM STARTERS.

The question raised by H. M. Jameson, page 643, as to why bees commence on bottom starters first, is interesting. He ascribes it to lack of heat; but as heat rises one would suppose it would be hotter at the top than at the bottom of the section. I think differently. It has seemed to me that the cause lies in the fact that some bees dislike to go far from their combs to start new combs. Many years ago I used boxes holding about four pounds of honey, with two starters of comb at the top, say 1½ inches square, with none at the bottom, and I found that certain colonies were much inclined to begin at the bottom. This was especially true of weak colonies and some strains of Italian bees.

BROOD AND HONEY IN THE SAME CELL.

I saw something new a few days ago. In transferring some young larvæ from a brood-comb to queen-cells for queen-rearing I found a cell among the brood nearly filled with honey, and a larva floating on the honey. The larva appeared to be about two days old, and I guessed that it had died from an unwholesome diet. Evidently some worker or workers had needlessly stored honey in a cell already occupied with brood. I do not remember ever seeing or hearing of such a thing before. I have seen plenty of larvæ floating on honey, but it was where the clumsy hand of man had interfered by extracting both honey and brood together. Well, I think we ought to be charitable toward this one little witless bee for making such a mistake. The wonder is not that one has made a mistake, but that of the many millions of worker bees hatched, all know without teaching or experience how to feed the young larvæ by preparing just the right kind of food, and the exact quantity, as well as placing it in the right cells.

QUEEN-TRAPS VS. CLIPPED QUEENS.

It seems evident by the article on page 555, May 1, that R. L. Taylor does not intend to be led or misled by A. J. Halter, and on the next page Dr. Miller proceeds to prod him because he has dared to say that "clipped queens are an unmitigated nuisance at swarming time," and some other things. Well, I don't know much about the use of queen-traps; but it has seemed to me that the use of them on several hundred hives would be more "plague than profit" as an acquaintance used to say, and I could not well get along without clipping all my laying queens in spring, with apiaries many miles apart, and tall trees near. For all that, there is room for a difference of opinion between sensible people as to the value of clipping queens' wings. Talking with some extensive bee-keepers in Michigan last summer I expressed my surprise that they did not clip their queens' wings; but they showed me in about two minutes that they could care for their bees during swarming time with less labor if the queens could fly than if their wings were clipped, to say nothing of the labor of looking up all queens in spring.

It makes a good deal of difference whether you have several apiaries run for comb honey with many tall trees near by, or whether you have only one yard with a few small trees and shrubs, and are working for extracted honey. Those Michiganders are a splendid lot of men, but they have a way of doing their own thinking, and do not hesitate to take short cuts, even if not orthodox.

WIND AND WINTERING.

Which way shall we face our hives during spring weather? page 419, April 1—a live question, surely, and one that gives me a chance to say that wind plays a more important part in wintering and springing than most bee-keepers are accustomed to think. At the beginning of winter I had in my home yard 127 colonies to be wintered outdoors. I have just been looking them over, and find a loss of 15 colonies, nearly all during the spring. We have had one of the worst springs for bees I ever knew—almost constant heavy winds, either north or south, from March 15 to May 15, with the exception of the last week in April. Of the above number of colonies 24 faced north, 35 east, 30 south, 38 west. Of the dead colonies, 2 faced the north, 6 the east, 2 the south, and 5 the west. One of those that died facing north was robbed late in spring, and died from starvation. In proportion to the number of hives, the loss in those facing east was twice as great as in those facing

either north or south. I see no great significance in this, and believe chance had much to do with it.

But another matter has interested me greatly. My yard is about 40 feet wide, east and west, and 160 feet long north and south, and better protected from winds at the north than at the south end. I find that the loss in the north half of the yard was barely one colony, while in the south half the loss was 14. I also find that the colonies of the north half average much stronger, as a rule, than those at the other end. I have observed the same conditions in other years, although not, perhaps, so pronounced. Such facts hardly need comment. In selecting a site for bees, take one where the snow lies on the ground all winter without drifting, and then set facing any way you like.

# BEE-KEEPING IN THE SOUTHWEST

By Louis Scholl

The Texas Bee-keepers' Association convened in annual convention at College Station, Texas, July 7, 8, 9, with a good attendance. Officers for the ensuing year are: F. L. Aten, Round Rock, President; J. N. Long, Pearsall, Vice-president; Louis H. Scholl, New Braunfels, Secretary-treasurer. This has been one of the most profitable meetings the association has ever had.

### LIVE-BEE DEMONSTRATIONS.

If you intend to do any advertising, be there with the goods, so the people can see them; and then if you have the right kind of "gab" to go with it you'll do your advertising. Therefore live-bee demonstrations are great advertisers if the right person is in charge. Such a one was given last year at the Texas Farmers' Congress, and was so interesting we were requested to give it again this year.

### THE SEASON IN TEXAS.

While some localities in Texas have had a failure in a honey crop, others have proven extraordinarily good. In our own localities here, numerous spring flowers, from early until late in the season, put the bees in the best possible condition; and although we did not have our usual April flow from the mesquite, horsemint and marigold made up for it and even continued longer, so that, when the second yield from mesquite began in early June, the bees were kept continually at work. Then before the mesquite flow was over, cotton honey was coming in with a rush, lasting throughout June and July; and the bees are still working steadily on this plant, of which there are thousands of acres within easy reach of all of my yards. So, all together, this has been an ideal year with those who are located as favorably as I am.

But the total yield for the entire State will be short, and prices will reign rather higher than before. Mr. Toeppeiwein writes:

### THE PURE-FOOD LAWS AND HONEY PRICES FOR TEXAS BEE-KEEPERS.

The pure-food law, from a bee-keeper's standpoint, is one of the best and most important laws that have ever been passed. I never heard of a bee-keeper wanting to sell impure honey, and the consumer realizes this. Therefore, if the bee-keeper and consumer could deal directly with each other the bee-keeper would have no difficulty whatever in disposing of all the honey that he can produce at a good price. Much more honey would be consumed if the people could be sure that every pound they buy is pure. In Texas there was rarely any impure honey put up. The adulterated honey that was sold here was put up in other States and shipped in. Since the pure-food law is in effect this can not be done, and the consumers are aware of it; and for this reason we have a better demand for extracted honey than we formerly had. A great many people have bought comb honey because they want to be sure that the honey is pure; but the pure-food law has caused the demand for extracted honey to increase so that the difference between comb and extracted honey will be less. Many would just as soon have extracted honey as comb at the same price, or even prefer it, so long as they know it is pure. Others, who would not eat honey formerly, eat it now, and are willing to pay a fair price for it.

The only way I can sell honey is to show my buyers why it is profitable for them to handle it; and the way I do it is this: I guarantee that all the extracted honey has been heated to not less than 152 degrees, and that it will not granulate within 30 days from date of shipment. Then I put the price where they can move it, and when they are backed up with this guarantee they are willing to handle it.

Some bee-keepers will not heat their extracted honey, as it is too much trouble, and they say that they can find buyers who are willing to buy it just as it is taken from the hives. This was true the past spring before the buyers knew how fast certain kinds of honey would granulate. Then when this honey did granulate, these bee-keepers did not always take it back, but left it in the hands of the wholesale dealers, saying that it was in good shape when they sent it. Now, this may be true, and they be legally correct; but the buyers do not want to handle honey any more. Such business injures every bee-keeper in the State, and we should encourage our neighbors to heat every pound of extracted honey they sell, so it will not be likely to granulate within thirty days. If we give this guarantee, then we can readily dispose of our honey, and the price will go back to where it should be, and where it was this spring. If not, the demand for bulk comb honey will decrease.

We should encourage the use of bulk comb honey, as bee-keepers in other States do not put up much of that kind of honey, and naturally we have but little competition, while extracted honey can be obtained almost anywhere. We get more for our honey than bee-keepers in other parts of the country, as we have the demand for it right here in our own State and neighborhood. Our crop usually comes before honey is shipped in from other States, and this always helps us a great deal in holding a steady price on our prod-

uct. Bee-keepers should correspond, or have meetings and decide on a price, then make this known to the wholesale dealers, giving assurance at the same time that no producer will sell direct to the retailers, for such a practice ruins the wholesale trade every time. Under these circumstances, when the bee-keeper sells to the wholesale dealer he is sure of getting his money; whereas, if he sells to a retailer he loses an account occasionally, which loss about makes up the difference between the retail and wholesale prices. As a rule, the retailer is not going to pay a little honey account, as the surplus money he has usually goes to some wholesale house to which he is indebted. These wholesale houses have men who call upon him every week and collect from him. A bee-keeper, however, can hardly afford to go to the retailer's town to sue him; and this retailer, therefore, either defers the payment a long time and then says the honey was not as represented, and compromises for probably half; or he sometimes refuses to accept it, and the bee-keeper has to take the honey back, paying freight both ways.

Now, this happens right along, and the bee-keeper who tries it once usually does not try it a second time. This is bad business for the wholesale dealers, for they are willing to pay probably the same price for the honey, and are in position to sell it to these same retailers at a better price, thus giving them a profit for handling it, and in that way the price is held up. If the bee-keepers would follow the example of the onion-growers, selling all their honey to one or a few buyers at a set price, they would not glut the market; and with a steady price, and the goods put up properly, there would be no trouble whatever in disposing of all the Texas crop at a good profit.

UDO TOEPPERWEIN.

San Antonio, Texas.

# CONVERSATIONS WITH DOOLITTLE

CLOSING UP THE SECTION-HONEY SEASON.

"As the close of the honey season for 1908 is drawing near, I wish to know how I can secure all the section honey possible, as I wish to make as good a show as I can this year."

"The approach of the close of the comb-honey season is always a time of importance to the apiarist. As he wishes to secure as much as possible, he puts on so many sections that very few of them are ever completed. All know that this is undesirable, but many have not learned enough by the loss to be able to stop it. How it may be prevented, or reduced as largely as possible, is a question worth considering."

"I know that is right; but how is it to be done?"

"By lessening the amount of surplus room, or by giving the extra room in such a way that the bees will not go into the sections unless they are crowded."

"But if I lessen the amount of room before the end of the honey-flow, would this not mean a serious curtailment of the season's crop?"

"Yes. But to go ahead and put empty supers under the full ones, the same as you did in the height of the flow, is almost sure to result in a loss just as great. That is why the room should be given in such a way that the bees would not occupy it unless needed."

"How is that done?"

"By putting all supers used at this time of the year on top of those the bees are at work in, rather than under."

"I gave that a trial once, and I did not like it. I thought it reduced my crop of completed sections, and gave me a whole lot of unfinished sections at the close. The bees were slow in going into this upper super of empty sections, for they stayed on the sealed honey for some days, and then when they went into the upper super the season closed when but few of the sections were more than two-thirds full, so I had a whole super of unfinished sections to each hive."

"You should have removed the completed super when finished, or else put the empty one under it as soon as the first one was completed. It is more likely, however, that you did not put the empty super on top soon enough. I have never had an experience like that in putting the empty supers on top."

"You do not put on a second super till the one already on the hive is completed, do you?"

"Surely. If you wait till the first super is finished, a loss is always sure to occur. As soon as any cells are sealed, more room should be added. In the beginning, or during the height of the season, it does very well to put the empty super under the first, although of late years I put all supers, after the first, at the top. But when nearing the close of the season they should *always* be put on top as soon as the bees begin sealing the cells in some of the sections below."

"That is something new to me. I supposed that no more room was needed until the sections already occupied were nearly or quite completed."

"It is well to gauge as carefully as possible the storing strength of the colonies and the probable duration of the flow, neither contracting unduly nor giving room recklessly."

"Is it ever best to remove the completed sections from any super until all the sections in the super are finished?"

"This would depend quite a little upon how much time you have at your command. If you have plenty of time there is no doubt that it would pay. Before I went into the queen-rearing business I used to go over the apiary once a week and remove all of the finished sections from any super which had one-third or more of the sections completed."

"Did you put the empty sections in the place of those taken out?"

"No. The partly finished sections which are left should be massed together in the center of the super, and new ones put on either side, so that we may get as many completed as possible should the season stop short at any time. This precaution will very largely reduce the number of sections which are nearly or quite filled, but not completed, and these make the matter of unfinished sections so aggravating."

"I think I understand this matter better than I did, so let us suppose the end of the season has arrived and I have a lot of unfinished sections—how shall I manage them?"

"The first thing to do is to get the sections off

the hives and sort them over to see how many are completed, nearly completed, etc. The number of grades we are to make depends upon the use we make of the unfinished ones. After sorting out all that are completed I usually put the rest into three classes. The first class are those which have very little if any honey in the cells. If any have from ten to fifty cells of unsealed honey, they are allowed to go in this class, but no sealed honey is allowed with this lot. In the second are those that are less than two-thirds finished. In the third class go all that are above this."

"And now what do you do with each class?"

"The sections in the first class are carefully stored away in supers, ready to be put on the hives at the very opening of the next honey-flow, if they are not needed for baits."

"Do you mean that you put on a whole super of these at the beginning of the flow?"

"Yes, if I have them so I can; for with such sections the swarming fever is almost always done away with, because the bees enter them before any honey is crowded into the brood-chamber; and by giving more supers, as we have just been talking about, such colonies will, more often than otherwise, pass through the season without swarming at all, giving a large yield of honey every time. The second class is set away to have the honey extracted from them at the first opportunity, after which the bees are allowed to clean them up, when they are used for baits in preparing the supers for the next season; or they are reserved for feeding any colonies which may need it the next spring. After the bees have taken the honey from them, they are used as bait sections. I prefer to use enough to make two rows through the super, if I can have that many. By putting these rows of baits so there is only one row of sections on either outside of them it is no trick to get a super completed all at once, as the bees always do more work in the center of the super, where left to themselves, than they do at the outsides. But by thus placing the baits they begin at or near each side first, and thus the sides are completed as quickly as the center, and all come off completed equally. If I am short of baits the sections in the third class are treated the same as those in the second; otherwise I sell them either at home or ship them to New York. A few years ago I did not think this latter could be done; but I tried a few cases one year, when I had more than was needed, and the returns gave me within 2½ cents as much as for my fancy honey. Since then I have remembered it, and I find that my first experience with shipping is the rule, and that it is more profitable to ship all two-thirds-sealed sections, having the remaining third filled with unsealed honey, than to dispose of them in any other way unless I am short of baits. If short, I sometimes think it would pay to extract or feed fully completed sections for the baits they would make."

Borodino, N. Y.

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A California paper states the Imperial Valley Bee-keepers' Association have practical control of the honey output of the valley, and are securing good prices on the cars shipped East. There are now 7000 stands of bees in the county.

# General Correspondence

## SWARMING.

### Some Facts to Prove that the Scouts Usually Search for a Home Before the Issuing of the Swarm.

BY J. E. HAND.

Mr. Greiner's article, p. 1507, last year, revives an interesting subject that was discussed pro and con in the bee-journals a number of years ago, and calls vividly to my mind some experiments that I conducted some 20 years ago in Iowa, with a view to finding out the truth about the scout theory.

A prairie country where the timber grows in belts along the streams, and where trees suitable to lodge a swarm are scarce, offers superior advantages for studying the habits and instincts of bees relative to their choosing a home before and after the issuing of a swarm.

I lived on the banks of the Iowa River, in Hardin Co., Iowa, and in conducting these experiments I loaded a flat boat with empty hives at swarming time and scattered them along the banks of the river, usually in some tree, and some eight or ten feet from the ground. I visited these hives every day, and have had swarms enter such hives the same day they were put up; and, again, I have known the scouts to take up their abode in a hive every day for nearly a week before the swarm took possession.

Again, I have known of more than one instance of a swarm issuing from the parent hive and making off to one of those decoy hives without clustering. Like Mr. Greiner I have had strange bees come into my apiary, and take possession of an empty hive in which the scouts have been working for several days. All my experience along this line goes to prove that bees usually search for a home for several days before the issuing of a swarm. However, they are not always successful in locating a suitable abode, in which case the swarm will fly in a straight line for some distance and then cluster again and repeat the operation of searching for a home, and doubtless this was the case with the swarms that entered Mr. Greiner's hives. Undoubtedly those swarms came from a distance, and clustered not far from Mr. Greiner's apiary.

I believe bees search for a home in very much the same way that they search for stores of pollen and nectar, and that more than one swarm often choose the same hive is evident from the fighting of the guards at the entrance of these hives. After a swarm once chooses a decoy hive for their future home it is as faithfully guarded until the swarm takes possession as it is afterward, and no intruder is allowed to enter.

Bees seem to prefer to seek a home at some distance from their present abode, and I have known swarms to leave the hive the next day after being hived, and go straight to a decoy hive 1½ miles away. The scout theory is an established fact, and offers an interesting theme for the student of bee nature.

Birmingham, Ohio.

## A HIVE-LIFTING WHEELBARROW.

### How it May be Used to Save Hard Work.

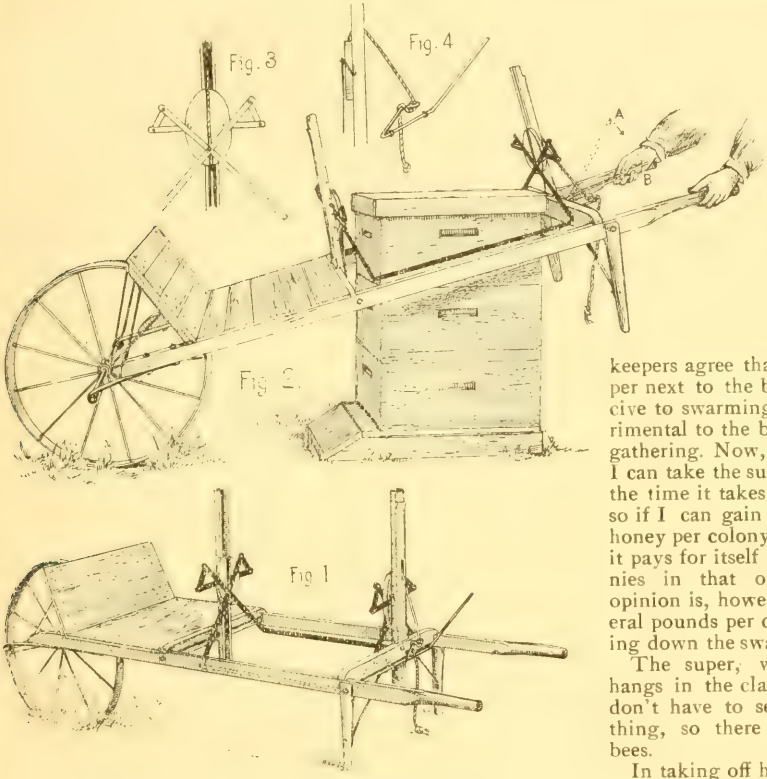
BY ANDREW C. BROVALD.

The illustrations show my hive-lifter and carrier on which I have applied for a patent. I have solved the problem of lifting and moving heavy supers and hives, to my own satisfaction at least. I can examine the brood-nest with two supers on about as fast as if it had only the cover over it.

The frame is 6 feet long, and the clamp that grips the hive is 25 in. long, and opens 20 in., so it will grip any box from 12 to 19 inches in width. The two standards that are bolted to the cross-pieces in the frame are 2 feet long, and have grooves in them in which the lifting attachment is held. These standards are for the purpose of adjusting the lifting attachment to the height of the hive. For instance, to take a ten-frame double-walled hive standing on the ground, the lifting attachment has to be let down to the last notch; and for taking off supers it has to be lifted up. There is a place in front of the lifting attachment about 17×20 inches, where a comb-bucket and tools can be carried, or supers that are ready for putting on the hives.

Besides having the lifting attachment it is more convenient in the apiary than a common wheelbarrow, because, by dropping the lifting attachment down out of the way, and (if you have no lifting to do you can take it out entirely), laying a couple of boards over the frame, one can pile on about three times as many empty supers as on a common wheelbarrow.

To illustrate further the convenience we will take the hive manipulations that Doolittle describes in "A Year's Work in an Out-apiary," where he puts the upper story down on the bottom-board and takes the old brood-nest away: that is an easy operation with this machine. I simply slip the lifter over the two-story hive as it stands, lift the whole to one side, then set the upper story back on the bottom-board. Thus it is done at one operation.




BROVALD'S HIVE-LIFTING WHEELBARROW.

There are many bee-keepers with hundreds of colonies who put the second super on top when the first is partly filled with honey just because it is too much of a job to lift off all these heavy supers and put the empty ones next to the brood-nest. Now, I think the majority of bee-keepers agree that a nearly filled super next to the brood-nest is conducive to swarming, and that it is detrimental to the best results in honey-gathering. Now, by using this lifter I can take the super off in just about the time it takes to lift off the cover; so if I can gain only one pound of honey per colony by using the lifter it pays for itself for every 100 colonies in that one operation. My opinion is, however, that I gain several pounds per colony, besides keeping down the swarming impulse.

The super, while off the hive, hangs in the clamps of the lifter. I don't have to set it down on any thing, so there is no smashing of bees.

In taking off honey the lifter saves a lot of hard work. I leave the honey on the hives till the flow is about over, and use bee-escapes. My bee-escape boards are used for super-covers, so when I put them under the supers they are left there, and I do not have to disturb the bees any more, and it is quite easy to put in the escape-boards with this lifter. When taking off supers there is more or less burr-comb on the under side of the bottom-bars. That used to bother me somewhat; for when I set the super down on a flat surface the burr-combs would spring the bottom-bar so as to smash the lower edge of the combs. With this lifter there is no bother whatever on that account. The supers hang in the clamps, and I wheel them to the extractor.

Babcock, Wis.

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Imperial Valley, Cal., will ship 20 carloads of honey this year. Last year it had but 7.

## BEE-KEEPING IN AUSTRALIA.

### An Interview with the President of the Victoria Apicultural Association.

[Our readers will remember that Mr. F. R. Buehne, of Tooborac, Victoria, Australia, came to the United States in May to introduce his new cap-melting device — a machine that he claims not only melts the cappings as fast as they leave the uncapping-knife, but delivers the melted wax and honey in two separate receptacles before they actually cool. On this trip he called on the publishers of this journal, and during the course of our conversation with him we found him to be an exceptionally well-posted bee-keeper. When it comes to practical stunts in the handling of bees he probably has few if any superiors. As an indication of how well he is regarded in Australia we will say that he is President of the Victoria Apicultural Association, and Bee Expert of the Department of Agriculture for his State. While here showing his machine and explaining its merits it occurred to us that it would be very interesting as well as profitable to put him on the witness-stand and make him answer questions. We accordingly arranged for an interview, with a stenographer present. In that which follows we believe that our readers will acknowledge with us that he is a Gamaliel at whose feet we may profitably sit and listen, for he has had a varied and ripe experience that will be worth something, even to us Yankees who are supposed to beat the world in the production of honey. We are glad, therefore, to introduce Mr. Buehne, and will now ply him with questions to answer.—Ed.]

#### BEE PARALYSIS.

"How do the climatic conditions of Tooborac, Victoria, differ from those in Germany, Mr. Buehne?"

"Those in Germany are much the same as in the Eastern States of this country. My present locality is similar to that of Southern California. It is similar to California in climate if not in flora."

"What race or strain of bees do you find gives the best results?"

"The darker strains of Italians."

"Why do you prefer them?"

"Because of their greater immunity from bee paralysis."

"Do you find the yellow Italians as free from that disease as the darker strains?"

"No, decidedly not."

"Do you find that your strains of Italians resist foul brood better than black bees?"

"I do. On one occasion five cases of foul brood occurred in an apiary of 250 colonies, and four out of those five were in colonies of black bees, of which there were only five in the whole apiary."

"Do you find that bee paralysis is more prevalent in some parts of Australia than others?"

"Yes, that is generally acknowledged by our bee-keepers."

"What constitutes the difference in these localities?"

"The dry inland districts are favorable to the development of paralysis, while in the cooler coast regions it is almost unknown."

"Did you ever attempt to introduce any other strain in your locality to improve your bees?"

"Yes. On many occasions I found that, with new blood, came a predisposition to bee paralysis. On one occasion I bred over ninety queens from two specially yellow breeders, and introduced them with the view of improving my own strain. The result was that both breeders, with all their bees, succumbed to paralysis the following spring, and every one of the colonies of their queen progeny was more or less affected—so much so that I requeened the whole of them as fast as I could from queens of my own original strain, keeping them going with brood of the same in the meantime. I thus lost the entire season in keeping up my colonies."

"How much did that loss amount to?"

"At least $500."

"In a general way, do you find the extra-yellow strains as hardy as your ordinary regular leather-colored stock?"

"No. They are much more influenced by changes of temperature, being easily chilled in cold weather."

"Are the yellow strains used very much in localities on the coast?"

"No. The yellow bees are kept principally by beginners."

"What cure, if any, have you for bee paralysis?"

"The only cure I know of is to requeen with a different strain. A temporary cure may be effected by feeding honey without any drugs."

"Why do you say without any drugs?"

"I have on several occasions eliminated the disease for the time being by feeding thin honey continuously for several months."

"Why do you feed *honey* rather than sugar syrup?"

"Because I am of the opinion that the digestive organs, being affected by paralysis, sugar which would have to be inverted would tax the digestion more than honey that is already inverted, or partially digested."

"Do you find that some individual colonies are immune to the disease, even when surrounded by other infected colonies?"

"Yes, I do; and it is such that I choose to breed from, with the view of creating a strain of bees immune to paralysis."

"Can you put combs from colonies affected with bee paralysis into healthy ones without carrying the disease?"

"Yes; in fact, it is a practice with me to put combs purposely from the infected colonies into such colonies as I esteem are immune, for the purpose of testing their assumed immunity."

"Will combs from such affected colonies carry the disease to colonies that are not hardy or immune?"

"I do not think so."

"What does carry disease from colony to colony?"

"Assuming paralysis to be a germ disease, once a locality has been infected, germs would be present everywhere, but would cause an outbreak only among bees possessing a predisposed constitutional weakness."

"If you were starting anew, would you begin with stock from a locality where bee paralysis was unknown?"

"No. I should prefer stock from an apiary from which it has been bred out by selection, as I have explained."

"Can you recall instances bearing on this point?"

"Yes. Fifty colonies which were sent to me from an apiary quite free from paralysis developed this disease in a most virulent form within a few days after being placed in my apiary, my own colonies showing no sign of paralysis, even when the new arrivals had become almost extinct."

To be continued.

E. D. TOWNSEND'S PINE LAKE YARD IN MECOSTA COUNTY, MICHIGAN.

## THE LOCATION OF EXTRACTING YARDS.

### The Advantage of a Protected Apiary; How to get the Honey to the Extracting-house with the Least Effort.

BY E. D. TOWNSEND.

If the bees find as much genuine pleasure in working in a yard where there is good outside protection from prevailing winds as the operator does, then there can be no doubt that this outside protection is a good thing. My boys are always glad when we have finished extracting at one of our yards where there is but little protection; and they look forward gladly to the work at our Pine Lake yard where there is protection from the wind. In our bee-keeping experience I suppose we have had yards in at least 25 different places, and in all kinds of locations —some well protected, and others not protected at all from the prevailing winds; therefore we think we have learned the value of protection, from actual experience.

No two of our yards are arranged on the same plan, for the hives are so located as to take advantage of the particular lay of the ground. As far as possible we locate our extracting-houses in the lowest part of the yard to facilitate the wheeling-in of the honey. Wheelbarrow paths are chosen, leading from different parts to the house. At our Pine Lake yard, however, as shown in the engraving, we were obliged to place two of the rows of hives on the ground that was lower than the door of the honey-house. The main path for these two rows is at the upper side of both rows, where the ground is on a level with the honey-house door. In this way, by loading the wheelbarrow at the back of the upper row it is not necessary to run up hill after reaching the path. When the load is taken from the lower row the wheelbarrow is placed so as to be pushed directly up the short hill into the path. We have found that it is easier to push a load up a short steep hill than to push it all the way to the honey-house up a hill that is very much longer, although not nearly so steep.

On level ground it is not difficult to arrange the yard so that it will be convenient to wheel in the honey from all parts; but where the ground is uneven, a little planning must be done in order to make the work easier. If the ground is very uneven it is not best to try to keep the hives in rows, but to group them to some extent; for the first thing to do is to secure good wheelbarrow paths, of which there should be three or four leading to the honey-house. These paths need not necessarily be straight, for it is many times much easier to travel a little further in order to avoid a grade.

Having these main paths selected, the yard will

TOWNSEND'S YARD IN KALKASKA COUNTY, MICHIGAN.

thus be divided into three or four groups of hives. I prefer to have the hives placed facing the south or southeast. But in the majority of our yards we can pay but little attention to the direction, and the hives, therefore, face every way except the north. We see no difference in results, and it is possible that the colonies would do as well if the entrances were toward the north; but we always avoid that direction, perhaps from the force of habit.

Parallel with the lay of the ground we level pieces of ground 20 inches wide and 4 feet long, which is large enough for two hives placed side by side. Two 2×4's 4 feet long are laid down flat, and leveled. In this way the foundation is made for two hives. The front of the hives should preferably be ¼ inch lower than the back so that water will run out of the entrance. We formerly laid great stress on having our hives in rows all facing the south; but we find that this plan, in the majority of instances, was not satisfactory, on account of the lay of the ground. Furthermore a greater percentage of young queens were lost on returning from their mating-flight, and the bees themselves mixed up much more. Now the groups may be placed five or six feet apart one way and ten or twelve the other. On this plan the groups are really in rows which are not straight, perhaps, but irregular, to conform to the ground. Possibly some might think that this arrangement would not be pleasing to the eye; but there is really hardly any other plan that would look well on rough ground. The wheelbarrow may be run between each group of hives and also between each row; and it is an easy matter to load the honey very close to one of the main paths leading to the extracting-house.

In renting ground for bee-yards it is not always possible to secure a desirable place to set the hives. Our Kalkaska yard, as shown in the second engraving, is located on a side hill. However, we first made four terraces on which the rows of hives might be placed. Since the hill slopes to the southeast, the hives face in all directions between south and east. The honey-houses were set about midway at the lower side. A path was made across the terraces in the middle, dividing the yard in two parts. When extracting we work from the sides of the yard toward the center in order to shorten the distance to the honey-house. If we set this house at one side of the yard it would be necessary to wheel the honey, or at least the greater part of it, twice as far.

Remus, Mich.

## MOTH AND LARVÆ DESTRUCTIVE TO BASSWOODS AND OTHER SHADE-TREES.

BY PROF. H. A. SURFACE.

[Chancing to go down through some streets in the residence districts of East Cleveland a few weeks ago we observed that many of the trunks of the trees had sticky fly-paper tied around them. On looking above at the foliage we noticed that the leaves, especially of the basswoods, were being eaten, and in some cases the trees were entirely defoliated. Having heard of the fearful ravages of the gipsy moth in Massachusetts, and hearing something to the effect that they might visit Cleveland at almost any time, we wondered as we walked down the streets whether the pests had not already reached our city. We observed that many of the trunks of the trees had cocoon masses much like those illustrated

of the gipsy moth. On examining carefully the trunks of the trees we noticed a great many worms, very strikingly beautiful yet ugly enough to make one feel "creepy." At the extreme end, or tail, was a tuft of straight brown bristles standing up at an angle of 45 degrees. Just back of the head were four little tufts or plumes of a very pale yellow. The upper half of the larva was somewhat larger in diameter than the lower. In a word, it was very showy, and appeared to be a voracious eater of the leaves. The lindens appeared to be the greatest sufferers, and then came the poplars and maples.

We asked some of the residents what the pest was; but nobody seemed to know very much about it except one man, who ventured that it was the California scab. Of course, we knew that could not be correct.

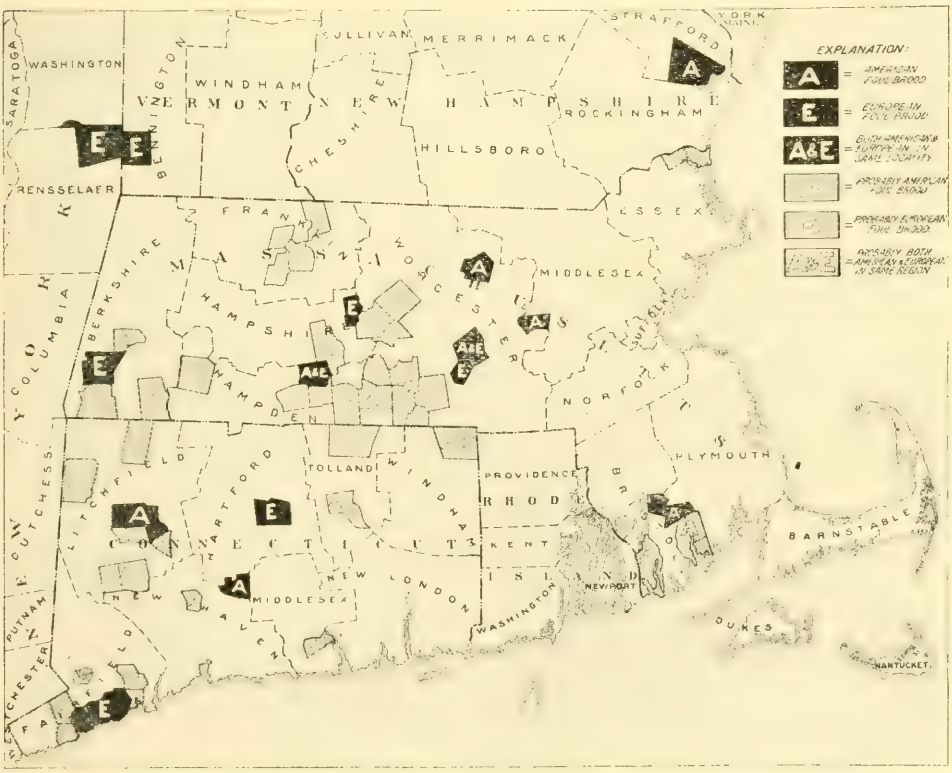
Fearing that the pest might be the gipsy moth—or at any rate knowing that it was something very destructive, and that possibly others might be suffering from it, we addressed a letter to Professor H. A. Surface, describing minutely the larva, and supplying a rough sketch. The letter below is interesting, and it may help others, who may have large numbers of basswood or maple trees, to cope with the ravages of the pest, for it is gettting to be a very serious one in Cleveland.

On arriving home we observed that the same insect had begun work on a vine at a neighbor's house. He destroyed the whole vine, root and branch, in a bonfire. We then found that the cocoons were being built on the under edge of the clapboards of the house. These were carefully hunted out and destroyed. As Rootville is blessed with beautiful lindens, or basswoods, we did not care, of course, to have the pests started on them.

Prof. Surface's letter only emphasizes the importance of preserving our feathered friends. Small boys every now and then consider it fine sport, with an air-rifle or flobert, to pick off these birds one by one. These boys should be immediately informed that it is against the law.—ED.]

*Mr. E. R. Root:*—I was pleased to receive your recent letter so accuratcly describing the larvæ destructive to the shade-trees on the streets of the city of Cleveland. There is no doubt whatever concerning the correct name of the pest, as your description and illustration of the pest are accurate. This is the white-marked tussock moth, scientific name *Hemerocampa leucostigma*. I have never heard it called California scab, and think this is a very poor name for an insect which is so free-moving as is the larva of a moth. This larva transforms into a moth, the male of which has an expanse of wings of one-eighth inch, while the wings of the female are very small vestiges, and are so inconspicuous as to escape observation by many persons, and consequently she does not look like a moth, wings being absent. It is a very destructive pest, especialy on the shade-trees of cities, as it feeds upon a great many kinds of trees, and is too often allowed to go unchecked until it has destroyed the foliage of the tree and become a general nuisance by its abundance. However, it has many enemies, both in the insect world and among birds. It has many internal parasites which help in holding it in check; and certain birds, such as cuckoos, feed upon it readily. The tussock-moth larva feeds upon the foliage of maple, horsechestnut, and other shade-trees, and becomes easily the most serious pest of these trees on some village or city streets. The life history is interesting, and is as follows:

The larvæ feed until they reach a length of




MAP SHOWING DISTRIBUTION OF BEE DISEASES IN MASSACHUSETTS, AND POSSIBLE SOURCES OF INFECTION FROM NEIGHBORING STATES.

Re-engraved from Bulletin No. 75, Part III., by Burton N. Gates, Bureau of Entomology, Washington, D. C. See editorial in last issue, page 869.

over an inch, when they seek a place to form a loose cocoon of silk holding together the hairs which they cast from their bodies. Within, this loose silken and spiny cocoon, which, as you say, is often found on the sides of the trees, may transform into a chrysalis, and there remain, either during the entire winter or during a few days in midsummer, as there are two broods per year. After they emerge from the chrysalis the males fly; but the females remain clinging to the old cocoons, where they lay masses of eggs covered with a white frothy substance, which hardens and partially protects them. When these egg masses hatch, the little caterpillars which hatch out crawl to the green foliage of the trees and first eat very small holes in the leaves, but later devour practically the entire leaf, almost stripping the trees and causing considerable damage.

As they are leaf-eaters, or feed by chewing their food, they can be killed by arsenical sprays with certainty. For this purpose, where a spray-pump is available it is possible to use one-half pound of Paris green in fifty gallons of water, or three pounds of arsenate of lead in the same amount of water. However, it is not easy to spray large shade-trees, and it is more desirable to destroy the pests while in the cocoon or egg state by touching them with sponges fastened on the ends of long poles and dipped into oil. Common kerosene or coal oil will do for this, but it would be well to have it blackened by the addition of tar or some other pigment in order that the cocoons that have been touched may be stained, so that the operator can see at once which he has treated, and work more rapidly without having to repeat his work as he goes around the trees. In order to preserve the parasites it is a good plan to gather the cocoons and egg masses by hand, by using short ladders or step-ladders, and placing them in boxes with wire screens over them. The parasites can come out and be free to escape through the coarse meshes of wire, while if the larvæ would hatch in such a place they would not find the leaves, and perish.

Harrisburg, Pa.

## THE LEGS OF THE HONEY-BEE.

BY DR. BRUENNICH.

Every schoolboy ought to know that the bee has three pairs of legs; but not every bee-keeper knows that every leg is a wonderful mechanism and has an apparatus of its own. Let us look at the details of these wonderful parts of our little insect. Every leg consists uniformly of 9 parts and 8 joints. The first is the haunch, or coxa; the second, the trochanter; then come the femur, the tibia, and the foot. The latter is composed of 5 parts, of which the first is the longest. With the exception of the tibia-palmar joint, which allows movements of the palmar in more than one plane, all the joints are constructed like hinges; that is, when one part is fixed, the movement of the other is always in a plane. If the axes of all 8 joints were parallel, the movements of the legs would be very much restrained; but this is not the case, for the axes lie in different directions, which allows the most complicated movements of the leg. It is this construction which has been imitated by engineers, and it can be seen in many branches of mechanics.

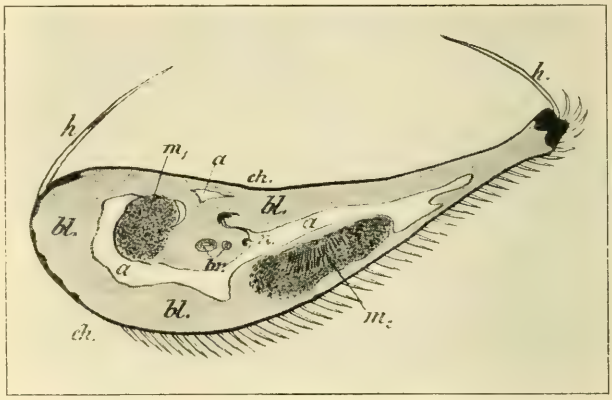



FIG. 1.—SECTION THROUGH THE BASKET OF THE TIBIA OF THE THIRD OR HIND LEG.

The most important joint in any of the legs is the tibia palmar, which shows in each leg a wonderful apparatus of its own. This joint allows movement in more than one plane.

FIG. 2.—FOOT OF THE BEE.

At the end are shown the two claws, and between them, at *a*, the pulvillus.

In the case of insects the skeleton is not *interior*, but quite *exterior*, and consists of the chitinous membrane, or skin, which serves to hold

the members together. Chitin is an admirable material of an exceedingly firm but elastic nature. A description of the leg gives us an idea of the construction of the whole bee. Let us look, therefore, at the reproduction of a section through the little basket of the hind legs, which serves as a receptacle for the gathered pollen, Fig. 1. In this illustration *ch* is the chitinous membrane. At both ends we find the hairs, *h*, which serve to hold the little loaf of pollen. In the interior we are surprised to see, taking up considerable space, the two muscles, *m*, *m*—the first the extensor, the second the flexor, of the foot; *a* is the great air-space from which are discharged the little bronchial tubes, of which we see two in the section *br*. This air-space is separated from the other parts by a very fine membrane which serves for the exchange of gases—namely, oxygen and carbonic acid. The oxygen is brought by the bronchus from the outer air and penetrates the membrane to go into the great blood-space *bl* which surrounds all inner organs and gives them food for their labor. Inversely goes the carbonic acid, which is a product of combustion from the blood into the air-space, or from there into the free atmosphere.

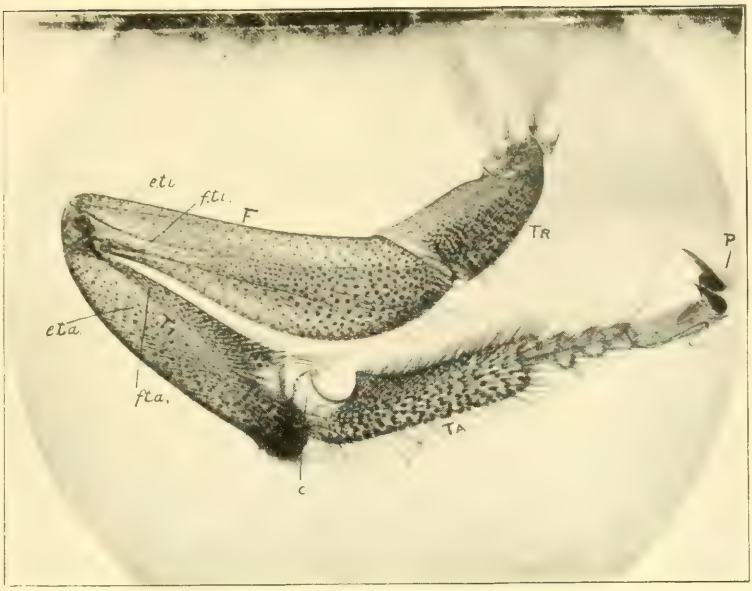



FIG. 3.—FIRST LEG.

*e. ti.* extensor of the tibia; *F*, femur; *Tr.*, trochanter; *e. ta.*, extensor of the tarsus; *f. ta.* flexor of the tarsus; *Ti.*, tibia; *c.*, cleaning-apparatus *Ta.*, tarsus; *P.*, pulvillus.

At *n* we see a section of the nerve, which, dividing itself into different branches, gives the impulse of movement to the muscles, and transmits the sensations to the brain or spinal marrow.

The legs are covered with hairs of different size. The hairs of the coxa and trochanter are pinnate. All the legs have on the end of the foot an apparatus for fixing or clinging. There are two claws, each composed of two hooks, with which the bee is enabled to get hold on different objects. Between the claws there is the pulvillus (shown at *a*, Fig. 2), a little bolster secreting a viscous sap. By the aid of the pulvillus the bee can climb a polished surface like a pane of glass.

Let us now look at the most interesting and complicated part of the leg—the

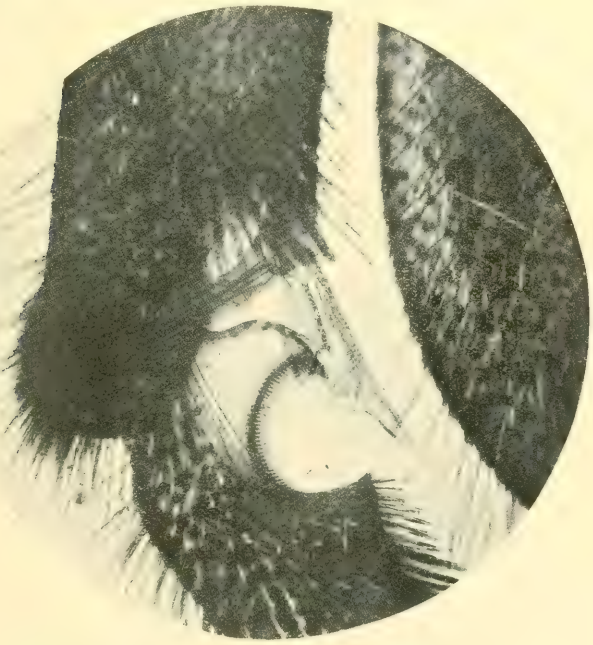


FIG. 4.—LARGER VIEW OF THE TIBIA-PALMAR JOINT ON THE FIRST LEG, SHOWING THE CLEANING-APPARATUS.

FIG. 6.—THIRD (OR HIND) LEG.

tibia-palmar joints. On the first leg it is a wonderful apparatus for cleaning the antennæ and the tongue—Figs. 3 and 4. In the upper part of the palmer there is a semicircular groove fringed with solid parallel bristle. In the end of the tibia there is a little movable operculum which shuts the groove when the palmer is bent toward the tibia. When the bee wishes to clean the antennæ (which it always does before flying up as every bee-keeper has observed, it lets them down a little, puts the first leg over the antenna so that the latter is placed in the groove; then it bends the palma so that the operculum shuts the groove and grips the antenna. Then it draws back both antennæ so that they are polished, and all dirt remains on that little half-round comb. The bee does the same with the tongue.

The tibia-palmar joint of the middle leg, Fig. 5, is the simplest. There we find only a little spur which is said to strip off the little loaf of pollen. The same joint of the hind leg is rather complicated, Figs. 6 and 7. It forms a kind of

FIG. 5.—THE MIDDLE (OR SECOND) LEG.
The spur is shown at *a*.

pincers with which the bee can grasp minute objects—for instance, the wax pellets on the abdomen. On the end of the tibia there is a little comb consisting of about 18 bristles, the purpose of which is still unknown. On the palma of the hind leg we find on the worker-bee the "brush," consisting of nine or ten series of bristles. With this brush the bee gathers the pollen that adheres to the body, or with it cleans the body from dust, etc. Thus we see that the legs of the honey-bee serve not only as organs of locomotion but for cleaning, carrying, etc.

With the drone and the queen the first and second pairs of legs do not differ materially from those of the worker. On the hind leg the brush of the queen and drone consists of finer and quite irregular bristles, and there is no comb at all.

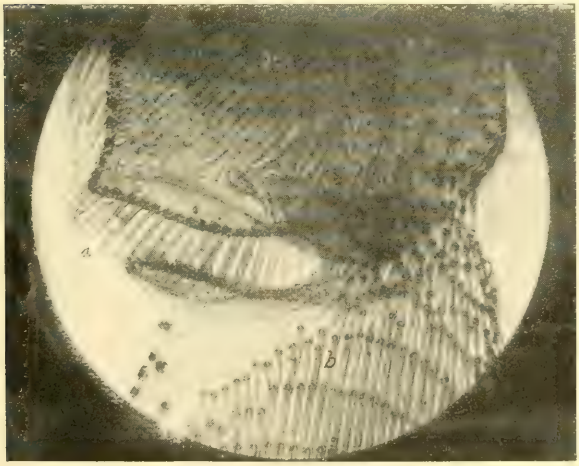



FIG. 7.—TIBIA-PALMAR JOINT OF THE THIRD (OR HIND) LEG.
*a*, comb; *b*, brush.

The basket is not smooth, as with the worker-bee, but covered with fine hairs.

Ottenbach, Switzerland.

## THE ALEXANDER PLAN FOR MAKING INCREASE.

### Allowing Colonies to Rear Their Own Queens.

I have been very much interested in reading Mr. Alexander's plan for making increase, and would like to ask him a few questions about it.

How would it do to select a frame or two of capped brood having also some eggs and young larvæ around the bottom and sides, and put it above an excluder with a flight-hole; then when the young queen's eggs begin to hatch, remove the old hive and set the young queen down, when the colony would be ready for extracting or increase, or set the young queen and brood in the lower or old hive, which has now two queens, and therefore is not likely to swarm.

By shaking the young queens in front of the lower hive as soon as they commence to lay we can be sure to have young queens always, without having to look up the old one. They will surely be as good as superseded ones. Some of our best bee-keepers advise letting colonies do their own requeening. I should like to have Mr. Alexander's opinion of these things, and I think there are many others who would also.

Salem, N. J. HENRY BASSETT.

[The above was referred to Mr. E. W. Alexander, whose reply follows.—ED.]

Friend Bassett does not say, but I suppose he intends to give a ripe queen-cell or virgin for the bees to mature a queen from. Now, this looks all right, and it would be, providing the bees from below would tolerate a virgin so near their laying queen. With us, when we have tried this way of maturing young queens, at least 90 per cent were balled and killed when about two or three days old.

This is one thing I never could accomplish—that is, keep a virgin alive where bees with a laying queen had free access to each queen.

I know some recommend superseding queens by simply letting a virgin run into the hive at the entrance. We have tried this hundreds of times when we had a surplus of virgins, and never, but once, was the virgin allowed to kill the laying queen. If I had a breeding queen worth fifty dollars in a good full colony I would not be afraid to have a pint of virgin queens shaken down at the entrance, for I am sure each virgin would be grabbed and stung by the workers before she could ever meet the laying

DRONE, QUEEN, AND WORKER; PHOTOGRAPHED BY DR. K. BRUENNICH.

queen. As to allowing the bees to do their own superseding, I am decidedly opposed to it. We never can improve them as we should while this miserable method is practiced. There is not a particle of science about it.

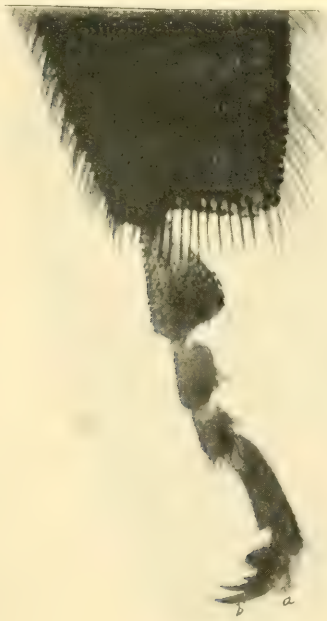



FIG. 8.—FOOT OF THE THIRD (OR HIND) LEG.
*b*, claws; *a*, pulvillus.

When a colony has two laying queens, and they are separated only by a queen-excluder, and you wish to have both queens occupy the lower hive only, remove the upper hive and also the excluder as carefully as you can, setting them to one side; then remove two or three combs with the adhering bees from one side of the lower hive, being careful not to disturb their queen; then take as many combs from the upper hive with their brood, queen, and adhering bees, setting them carefully in the open part of the lower hive. Replace the excluder and upper hive, doing it all without exciting the bees any more than can be helped. In this way each queen will be for some time with her bees and brood; and when the queens do come together, all will be quiet and natural; whereas if you shake them down in front of the hive, the bees and queen will be much excited, and she will run all through the hive, and you will be quite likely to have one or both queens stung. No, don't shake a queen down in front of any hive if you can prevent it. I have several times seen good queens stung by their own bees when this was practiced. It is quite a trade of itself to know how to handle hundreds of queens and not lose any; for so much depends upon certain conditions that a method that will work all right in one case may be away off in another.

Delanson, N. Y.

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PURE FOOD IN NEW YORK.

Commissioner Pearson, of New York, has notified all the makers of ice cream in his State that adulteration will not be tolerated. Pure cream must be used. He could very properly drop a hint of the same kind with respect to honey a little later in the season. W. K. M.

## SIMPLIFIED QUEEN-REARING.

### A Plan Adapted to the Needs of the Small Bee-keeper.

BY C. O. FLUHARTY.

I have frequently been interrogated on the subject of queen-rearing by bee-keepers owning perhaps half a dozen hives and desiring to increase the number of their colonies without having them swarm.

In most cases I find that persons keeping bees on a small scale do not care to undertake queen-rearing by the seemingly complicated and tedious methods employed by professional queen-breeders; therefore after trying a number of plans for simplifying this, so as to make it quite easy for even a beginner to understand and execute, I have concluded that the following will be found the most satisfactory method, having thoroughly tested it this season.

FIG. 1.

First, as to apparatus: A frame of the standard dimensions, with the exception that the bars and ends be constructed of one width of material, say one inch. To one side of this frame, firmly fasten with tacks a sheet of wire cloth, tacking it down all around so as to make it "bee-proof;" next prepare another wire cloth in like manner for the other side, but do not tack it on, as it is to be held in place by lumps of beeswax at each corner and at intervals between the corners. Thus we have constructed a huge nursery cage with

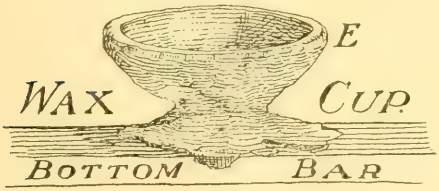


FIG. 2.

one side stationary and the other held in place by the wax. Next, fasten a small column of beeswax inside the frame, one end of which attach to the under side of the top-bar while the other end is made fast to the bottom-bar. Fix the ends firmly to the bars by pressing the wax with the thumbs. The cells are to be attached to this little wax column. See Fig. 1.

Next, mold with a blunt stick or leadpencil eraser some tiny wax cups as seen in Fig. 2, and fasten to the bottom-bar as indicated in No. 2, Fig. 3. These are food-cups. Now roll a piece

FIG. 3.

of wax quite thin, and convert it into a number of little cones, as B and D, Fig. 4. These are to hold the queen-cells as well as to suspend them from the wax column. See Figs. 1 and 3. We now have all the necessary apparatus with the exception of a *very* sharp and narrow-bladed knife for removing cells from frames.

To proceed, first remove the queen from a "boiling-over" hive that you wish to breed from (always select your best stock for this), and place the queen with two frames of her own bees in a new hive, and set it some distance from the old hive. This will, of course, give you a new hive.

The work is now over for about six days, after which, on opening the queenless hive, you will in most cases find from one to twenty queen-cells, large and well drawn out. Now carefully brush the bees from the frame containing the most cells, and, with the knife, cut out all of the finished ones; that is, those that are entirely closed. Next, without shaking the cells, remove as much of the adhering worker-cells as you safely can without breaking the walls of the queen-cell;

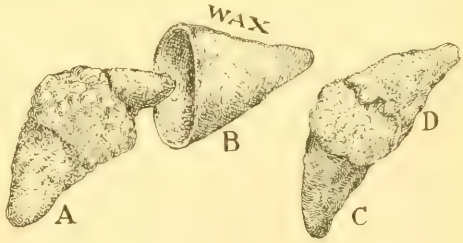


FIG. 4.

then insert the cell in the cone which was prepared for it; after this, cement the rim of the cone down tight to the cell with the point of the knife. Now fasten the end of the cone to the wax column, leaving the cell suspended in the same fashion that the bees build them. After preparing as many cells in this way as you will require queens, place the frame back in the queenless hive and leave one side of wire cloth off. After the frame has been in the hive 24 hours the bees will have cemented over every chink quite nicely, they being much better architects than we are.

It is now time to fill the food-cups with honey, and, after making sure that no bees are among the cells, wax the other wire cloth in place; you may

now replace the frame in the hive and await the appearance of your queens.

Now a few words as to the disposition of the queens when they hatch. Divide your bees up by any method you care to follow. The plan which I generally adopt is to remove three frames containing brood and bees, and place them in an empty hive; then carry the old hive to a new site at least 15 feet from where the parent hive was originally located, placing the queenless three-frame colony in exactly the same position formerly occupied by the old hive. Of course, all the flight bees will return to the new hive, which will, by the time a queen is hatched, have become a fine colony well on with the fourth frame of comb. Now watch your cell-cage; and just as fast as you find queens hatched, remove them and drop them (without smoke) right among the bees in the queenless hive. There is hardly a chance of the bees balling if the queens are introduced before they can fly. I have given this a most thorough trial this season, and lost but one cell, it being torn down by a virgin that was left imprisoned for two days on account of my not having a hive ready for her.

Sandusky, W. Va.

[We endorse what our correspondent has to say in reference to queen-rearing on a small scale; that is, it is a mistake for a bee-keeper owning perhaps ten or fifteen colonies to think that he must have a complicated apparatus for rearing his queens. But it seems to us that the plan here described could be still further simplified, and improved at the same time. It requires rather close watching to remove virgins just as soon as they are hatched, and we can not see why it would not be vastly better, instead of placing cells in the cage in the manner described, simply to leave them where they were first constructed until they are ripe, and then distribute them among the nuclei already prepared. This would save all the expense of the cage, of the wax columns, wax cones, etc.; and since it is much safer in the long run to introduce ripe cells than virgins, there would be some saving. In most cases it would be necessary to protect the cells in the usual manner with regular queen-cell protectors, which also provide means for attaching them to the combs.—Ed.]

## THE CASE METHOD OF REQUEENING EXPLAINED.

### Good Queens Reared Under the Swarming Impulse.

BY WM. W. CASE.

In reply to John M. Davis, page 700, I would say that I do not think I was understood concerning queens reared in swarming time. In the article quoted I was not writing a dissertation on queen-rearing, but a method of procedure to enable many who fail to get a honey crop from weak colonies or from excessive swarming to remedy those conditions and reap a nice profit.

In the first place I did not think any one would infer that I used cells for breeding sealed *after* the colony swarmed, I stating that such cells could be used for seven days, meaning, of course, that the last ones (sealed when the swarm issued) would hatch by the eighth day, and intending to give the impression that all unsealed cells should be destroyed. Now, by preventing the queen from leaving the hive for two, three, or four days, by traps or otherwise, large numbers of prime sealed cells may be obtained (I have had as many as nine), sealed *before* the swarm has finally been hived. Such cells produce the best of queens possible to get, even though placed in nuclei or even mating-boxes if the temperature is kept right. As a matter of practice I do *not* divide the cell colony into nuclei until about the seventh day.

In defense of my queens, I might say that I went into winter quarters, fall of 1907, with 49 colonies. Two, through an oversight, starved to death; and three, for some cause or other, came out queenless, which, however, were early replaced from the South. On June 18, 1908, 45 of the 47 colonies were working in the supers, covering more than 1500 sections on that date. None were given brood from others excepting the three queenless ones above mentioned, which were slightly aided, one of them now working in the supers, and *none* had the aid of a second queen to reach that condition, but one swarm having issued previous to that date.

I am not rearing queens for sale, and have no ax to grind.

Frenchtown, N. J., June 22.

## TWO SEASONS' EXPERIENCE WITH TWIN MATING-BOXES.

### Some Data to Show the Economy of a Nucleus Holding Four Ounces of Bees.

BY M. T. PRITCHARD.

[The writer of the following article has charge of our north yard, where, with 200 double baby nuclei, he will rear, in practically three months, 2000 queens — has reared 1500 already. He does not seek alone mere numbers but quality of stock.—Ed.]

A system of record-keeping is used in one of the queen-rearing yards of The A. I. Root Co. which enables us to know at the end of the season just what has been done with each nucleus. Some data taken from these records may help us to decide between small nuclei and nuclei with full-sized frames. Five twin mating-boxes were taken from the storehouse, and an examination was made of the ten records, there being two nuclei in each box, each having two frames one-third the size of a Langstroth frame. They are probably a fair average of the yard.

These nuclei were all started between the 18th and the 27th of June, using four ounces of bees for each nucleus, and they were run until after the first of September. One, however, swarmed July 5, and was given a new supply of bees the same day. The last queens were taken from them Sept. 22. During the season's work with these ten nuclei, 47 virgin queens and 41 cells were introduced; 15 of the virgins were lost in introducing, 7 more were lost at mating time, and the remaining 25 became laying queens. Of the cells, 7 failed to hatch; 2 were lost at mating time, and 32 became laying queens.

After two seasons' experience with the twin mating-boxes I am satisfied that the little colonies will hold their own through the queen-rearing season if started with young bees. Our greatest

trouble has been to keep them from getting too strong and swarming out. I do not think any thing is gained by introducing virgins when the number killed and crippled in introducing is taken into consideration; and I believe that queens mated in these nuclei in favorable weather are fully equal to those mated by any other method.

At the close of the season the bees may be saved by moving the mating-boxes two or three miles from the yard and placing them in groups of 10 to 15 each. Allow the bees to fly from their new location for a few days, then place an empty hive in the center of each group, and in it hang all the nucleus frames that contain brood by putting them into regular L. frames. Brush the bees from the empty boxes in front of the hive, and move them away where the bees can not find them. The bees will unite in the regular-sized hive and make a colony that should winter as well as any if given a queen and plenty of feed; and it will be ready to divide into nuclei again the next spring.

Medina, Ohio.

## A FURTHER DISCUSSION OF QUEEN-TRAPS.

### The Clipped-queen Plan Preferable; Why Rear Drones? Not Necessary to Lose Swarms with Virgins.

BY A. J. HALTER.

On page 555, of the May 1st issue, Mr. Taylor replies to an article of mine regarding the use of queen-traps. My contentions were based wholly on outyard manipulation versus the clipped-queen system for swarm control.

I do not rear an abnormal amount of drones, and do not find it necessary to obtain chicken feed by catching them or starving them to death simply for a good riddance.

The main objection to the rearing of drones is the feed and space required for their development during the larval state. When developed, the short duration of life is optional with the worker-bees. I believe it is more profitable to requeen systematically from choice stock, thus obtaining a majority of young queens in the hives, which lay fewer drone eggs; then, by removing combs that contain too many drone-cells, when over-hauling bees each spring the rearing of drones is kept normal.

Now in regard to the chilly nights and cool spells of rainy weather—was this not the cause of the shortage of honey last season?

June 17th we had a very heavy frost, freezing corn, tomatoes, etc., and on such occasions we certainly prefer to have the queens inside the hives.

Mr. Taylor says he finds clipped queens very annoying by hopping out of hives, and recommends traps for catching queens not clipped when a swarm emerges. I can not understand why a queen with one wing should be more difficult to catch than a queen with two wings when the trap is adjusted.

Several years ago what was called pickled brood appeared in two of my apiaries, mostly among hybrids and in colonies containing an old queen; but as soon as pure young Italian queens were introduced the disease disappeared. This seemed worth its consideration, and I began to requeen, clipping and marking the ages of each.

I found that queens reared directly after the main flow, which closes about the middle of July, could be relied upon to pass through two succeeding honey seasons with very little danger of being superseded until the main flow was over at the end of the second season. During the latter part of July all queens two years old are destroyed, and a ripe cell is given; but this must be attended to promptly at the time stated; for when supers are removed and bees crowded into the lower story, old queens are more likely to be superseded; and when the first virgin queen hatches a swarm will often issue, in our location, sometimes as late as September, owing to a late flow of nectar. By requeening promptly we have a good force of young bees ready for this flow, which often gives quite a surplus. Those colonies which do not give a surplus generally have enough stores for winter—an item worth considering. The past season I operated about 150 colonies for comb honey, and about half this number of colonies for extracted honey and queen-rearing. During this time there was not a swarm with a virgin queen; nor were any swarms lost by flying away. All laying queens being clipped, the bees returned to the hives. By giving a proper hive-stand, queens will generally return. All told, there were not over ten queens missing during the whole period, including accidents in manipulations.

Were I to rely wholly on queen-traps it would be necessary to have them in use until the latter part of August in this locality; but by clipping queens and requeening, as stated, the swarming period is shortened, and thus I have the benefit of all the bees reared after the first of August, as well as those reared for the main flow.

Akron, Ohio.

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J. T. Dunne, Fresno County bee inspector, reports that he inspected 35 apiaries last month. He finds the general condition of the apiaries north of Rolinda and west to the San Joaquin to be in fine condition. Many of the apiaries in this section have been extracted once and some the second time. The flow in this section is principally from the alfalfa. The 35 apiaries under inspection embraced 1910 hives or colonies.—*Pacific Rural Press.*

FOUL-BROOD LEGISLATION IN INDIANA.

Indiana bee-keepers are about to ask their legislature to pass a measure that will suppress both kinds of foul brood, and paralysis, in that State. About a year or more ago they did secure such a law; but owing to a defect the measure was invalid. They propose to try again. The new law proposes the appointment of a State Inspector of Apiaries acting under instructions from the State Entomologist. He is given power to aid in the development of the bee industry, and to afford protection io the bee-keepers by the suppression of bee diseases which now exist in several parts of the State. Indiana ought to have such a law, and have it quick. Mr. Pouder is its sponsor. W. K. M.

# Heads of Grain
## From Different Fields

### A CAUTION IN REGARD TO GREASY WASTE.

In your comments on greasy waste as a smoker fuel, page 868, July 15, you say, "Two or three bushels of it will last one almost an entire season." There may be a number of persons who read this who will collect this greasy waste and leave it in a box, keg, or barrel; and if it happens to be collected from a shop where lard oil or any animal or vegetable oil, for that matter, is used, as in cutting threads, the waste would probably set fire to the building if it were not discovered in time, as it would catch fire from spontaneous combustion. This might not happen if the oil in the waste is of mineral origin, as that does not oxydize as readily as the other oils. Linseed and lard oil have quite an affinity for oxygen; but as almost all the lubricating oils are compounds I think you should warn your subscribers of the danger of leaving a pile of greasy waste in any wooden building. I have had a small pile of waste in a tin can get quite hot in ten hours in an engine-room, and the oil in the waste was supposed to be a strictly mineral oil, as it was used for lubrication.

Philadelphia, July 28. J. T. Fennell.

[We have before mentioned the danger of allowing greasy waste to stand in a building, but we neglected to add this caution on the page referred to. Many fires owe their origin to the spontaneous combustion of greasy material left carelessly about. The best place to keep such smoker fuel is in a rain-proof box out of doors, away from any building.—Ed.]

### WHEN SWEET CLOVER YIELDS.

Is there a season of honey (nectar) flow for sweet clover, as for white clover and basswood, or is it a steady yielder all summer? If the latter, do the bees keep on putting the honey into the sections where there is an abundance of the bloom, or do they get simply their winter stores and living from it? I inquire because I have the right-of-way for a mile on both sides of my place sowed; and as it is now coming up nicely, by next year I expect to have the country covered; for, besides sowing it alongside the railroad track, I have had it scattered alongside the various roads leading out of town.

Buck Grove, Iowa. A. F. Bonney.

[Sweet clover usually begins to yield nectar shortly after clover and basswood are out of bloom, beginning in our locality anywhere from the first to the middle of July. It continues then to yield nearly all summer. During that time it is freely visited by the bees. While the roadsides and railroad embankments have a large amount of it, it does not yield enough honey to make any showing in the supers, and sometimes not very much in the brood-nest.

In localities where there are only a few colonies and a large amount of bloom, it yields considerable surplus honey. In the vicinity of Chicago a large amount of sweet-clover and white-clover honey is secured. The quality is of the very finest. If in your locality there are not a good many colonies you will be able to get some surplus, and also enough for winter stores.—Ed.]

### A GOOD PROTECTION FOR AN APIARY.

To protect the apiary from cold and hard north winds, make a fence from wire netting on the north side of your apiary, and plant some never-freezing honeysuckle plants close to it. In a short time these will grow and climb up the netting from one end to another so tight that no wind will get through, and so the apiary is saved from hard-blowing winds. These flowers will also make a nice appearance, especially when in bloom, as the blossoms are of different kinds, and there are green leaves the whole year. The plant will stand any cold.

By pulling down the wax cloth from one of my hives I saw that there were some holes gnawed in the tops of the frames by bee-moths. Please tell me whether this will do any harm to my bees. The holes are gnawed through the frames so that they can reach the honey. I have the black and hybrid races, but I always keep my colonies strong.

How high must I place my hives to keep frogs or toads from doing any harm to my bees?

New Ulm, Tex. Wm. H. Kautz.

[If there are moths in the hives at all, it would pay you to Italianize your colonies, and thus be rid of them entirely. We should suppose that hives two feet from the ground would be safe from toads, etc.—Ed.]

### THE IMPORTANCE OF A SPACING-STAPLE AT THE LOWER END OF THE FRAME END-BARS.

I want to make a strong appeal to the readers of Gleanings to put end-spacing staples at the lower corners of frames to save bees from being slaughtered by the score. I am going to get out a petition and get 20 or 30 bee-keepers of New York State to sign it, to the effect that any manufacturer or bee-keeper who does not recommend putting staples, or something similar, on the lower end of the end-bar, to keep from killing bees, be subject to a fine for cruelty to insects, the honey-bees.

You can't take out a set of frames from a populous colony having no staple or other protection on the lower corners in three or five minutes without injuring or maiming 20 or 30 bees. If you raise one end of the frame ¼ inch higher than the other you crush or maim some bees and occasionally a queen.

Groton, N. Y. W. L. Coggshall.

[Any one can put staples on his frames if he prefers. Manufacturers are willing to furnish what bee-keepers demand.—Ed.]

### MATURE BEES DYING IN THE SPRING.

Complying with your request, page 703, June 1, I will give the experience I have had with bees dying in the spring.

Last year I had my bees in a canyon at the foot of the mountains. They were in good condition, and seemed to do well for some time after I set them out in the spring; but about the last of May I noticed a great many dead bees in front of the hives, and this continued probably a

month, during which time the bees dwindled instead of gaining strength. At this time a kind of wild foxglove (*Digitalis*) was thick, and blooming all over the foothills. I thought that probably the honey from this or some other plant caused the trouble.

I visited Hermon Rauchfuss, near Denver, in May, 1903, when his bees were dying the same as mine did last year, only worse, I think. We walked over the hills, looking at the honey-plants; and, if I remember rightly, there was much of this foxglove. I. W. BECKWITH.

Lander, Wyo., June 12.

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SOME OPINIONS IN REGARD TO THE PROPER WEIGHT OF FOUNDATION TO USE IN SUPERS.

In answer to the request in Stray Straws of June 15 I wish to say that I use thin super foundation altogether in sections, also a half-sheet of thin super in the brood-frames, this latter with wire. I prefer this way, as I find it very economical. Of course I am a beginner here in the Ozark. E. C. BAKER.

Sylva, Ark., June 22.

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PREFERS EXTRA THIN.

I prefer the extra-thin, and have used nothing else for several years, using last season over 75 lbs. I shall use as much again this season. I began the use of the thin when commencing bee-keeping a number of years ago, and changed to extra-thin on account of the too heavy midrib. However, I never had my attention called to it by a customer; but I could tell it easily, and expected to hear from it. I got 20 lbs. of thin foundation this year for frame foundation, and my daughter cut up a 5-lb. box of it into section starters by mistake (full sheet and bottom starters), so I shall have a chance to test it once more, and may report later my findings.

I have used a good deal of extra-thin foundation in shallow extracting-frames (full sheets), and with a heavy colony. In hot weather the foundation stretches and buckles considerably between the wires unless the Miller splints are put in.

Regarding the bees gnawing foundation, no doubt they will gnaw the extra thin a little worse than the *thin*; but not enough worse, I think, to counterbalance the difference in the quality of the finished section honey. F. W. HALL.

Hull, Iowa.

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I use extra-thin foundation for sections, as the thin is too heavy, and bees will not draw it out when working fast. BURT SLEASE.

Roswell, N. Mex.

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I use extra thin in full sheets because it is always advised. About 2 per cent of it is torn down or eaten full of holes. We find it impossible to put in full sheets of extra-thin foundation with a hot-plate fastener in February and have it stick until given to the bees. Half of it will be loose. Would thin foundation be better?

Diamond, Pa. A. J. MORSE.

[The thin would undoubtedly stay better.—ED.]

I have used both the thin and extra thin, and find that the thin foundation is the better. I use thin altogether now, for the simple reason that bees will not tear it down as readily as the extra thin. I have talked with both veteran and amateur bee-keepers on this subject, and they all favor the thin foundation for the reason given above.

There is another reason for using thin foundation, and that is, it is easier handled in warm weather, and it will not topple over when used as a bottom starter according to the Miller plan.

Beardstown, Ill. H. W. DOERR.

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GOOD PRICE SECURED FOR BULK COMB HONEY; WHAT CAUSES MOLD?

I got 25 cts. per lb. for all my honey. How is that for chunk honey? Is it possible we are going to get some of the benefits the glucose-factories have been enjoying for years?

It was very warm here in January, and I thought I would look in my hives. I opened one and took out a brood-frame with about 6 or 8 lbs. of honey, and the rest of the comb was empty, and green with mold, and water or sweat was running off the honey. There were no bees on this comb. I should like to know what caused it to turn green, and how to remedy it.

If I take two or three brood-frames filled with brood in all stages, and put them in a hive, will the bees rear a queen if there is no queen-cell on them when you take them from the parent hive?

Will a colony of bees winter in a shallow extracting-super, or would it be better to give them two supers to fill up for winter? Will bees winter in an eight-frame observation hive in this climate? H. W. CRONE.

Ansted, W. Va.

[Combs will become moldy if left in the hives over winter when there are not enough bees to cover them. As a rule, it is best to have no more combs in the hive than the bees can occupy. The tendency to mold is greater when the hives are in a damp cellar or when the weather is damp and foggy.

If there are eggs or very young brood in the combs a queen could be reared by the bees on the two or three brood-frames that you would select for your nucleus. The best way, however, is to provide such a nucleus with a queen-cell that is nearly ready to hatch.

A colony of bees might possibly winter in a shallow extracting-super, but we think it would be much better to provide two supers or sections instead of one. If an observation hive is well packed, and if other conditions are normal, a colony ought to winter well, even though the sides of the hive were made of glass. Rather more packing, however, will be needed.—ED.]

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YOUNG WORKER BEES IN QUEEN-CELLS.

In going through a colony of hybrids that had swarmed, cutting out all the queen-cells but one to prevent after-swarms, I found three queen-cells with worker-bees capped up in them. There were these three chances for the single cell to leave them queenless. These cells appeared as large and perfect in shape as any.

Duluth, Ga. C. BUSH.

# Our Homes

By A. I. Root

Bless the Lord, O my soul; who forgiveth all thine iniquities, who healeth all thy diseases.—Psalm 103:3.

May the Lord be praised for the health, strength, and enthusiasm he has seen fit to give me as I look out this bright morning, August 1, on the work he has for me to do. There have been so many inquiries in regard to getting health on Terry's plan of uncooked food, or on similar plans laid down by other writers, that I have been beseeching Terry to write a brief little book or pamphlet outlining the way in which he secured most perfect health after the doctors had told him he had only a little while to live. But Terry is so busy he thinks he can not get at it—at least not just now. I finally told him if he did not write such a book on the subject I might undertake it myself (to be given away), and I feel just like starting it this morning. In other words, I feel that God has given me a message to be given to suffering humanity; and I feel so sure it is his message that I really enjoy the idea of giving it free to all who may want it, "without money and without price."

I should like to say, as the prophet did, to those who have suffered from poor health and a lack of enthusiasm, "Ho, every one that thirsteth! come ye to the waters, and he that hath no money; come."

I have had this whole matter in mind, as you may remember, for many years. In fact, I have prayed over it again and again; and when people have come to me for advice in regard to remedies I have often prayed over the matter before giving an answer. Several times in years past I have thought of recommending some of the medicines I had tried, and which I thought for a time were beneficial; but it seems as if the Holy Spirit bade me be careful. When the grown-up sons of Jesse were presented to the aged prophet Samuel he thought they would do very well. But Jehovah said, "Not so," and finally directed him to the shepherd boy David. Well, I have reason to feel that I have been directed much in the same way in recommending remedies. I can with a clear conscience recommend to you all the things I have called "*God's* medicines;" and, even though other remedies such as are used by our physicians may be all right at the proper time, I do not feel at liberty to recommend any of them. The outdoor, the pure water, the fruit that comes right from God's own hand, and the delicious and health-giving grains, are all *God's gifts*, and I feel no hesitancy in recommending them.

On page 955 of our last issue I told you that the three young growing boys declared they felt better, and their strength held out better, when they ate just shredded biscuit and milk in place of an elaborately cooked meal. Well, the boys seemed to have such a preference for the shredded-wheat biscuit that I commenced using it myself; and I have been eating it more or less three times a day ever since. As Mrs. Root thought we *must* have meat and potatoes and other things we are accustomed to have, I for a time ate a little of the other things, then finished up with my biscuit and milk. Finally I decided one morning to have just two shredded biscuits and a cup of milk, and nothing else, for my breakfast. It is true I did not feel quite satisfied, but I thought I would stop right there and see how my strength held out till noon. It held out a great deal better. When I went to take my nap just before dinner I did not feel nearly as much in need of food as usual. But I slept soundly, my mouth did not taste bad at all when I woke up just at dinner time, and I felt especially clean and well all over. For my dinner I had a little bread and butter, but otherwise about the same as for breakfast, and I have been pretty nearly a month now on this simple diet. Occasionally I have an egg; but, aside from cooking the eggs, I can get along very nicely without any cooking at all—at least in warm weather.

Now, friends, here is a tremendous achievement, aside from the matter of better health. Several times when we have been discussing the difficulty (and almost impossibility) of getting some one to cook, and wash the dishes in the home (it is worse in Florida than here in the North), I suggested that God was striving to teach us some useful lessons. Now, if I have got matters right, or, in other words, if I am truly interpreting the voice of God that speaks within me, the lesson that he is striving to teach us, and that we are so stubbornly refusing, is this: We do not *need* any elaborately cooked meals, with a great lot of dishes to contain different articles of food, for

> The pie and cake,
> That so much fussing make,
> Give one the stomach ache
> And send one to the undertaker.

After all I have said in favor of the lean-meat diet in years past, you may think this a rather wide departure. Well, I am not *quite* ready to become a vegetarian. I believe that milk and eggs were designed by the great Father above to be a large part of the diet of the human family. And, by the way, I am very fond of cheese, and I like a little bit every few days; but I shall have more to say about this soon. At present I am eating no meat at all. I do not need it, and do not care for it. I am not using any tea or coffee at all (nor headache powders). I do not need them and do not care for them; and when I feel the strength of mind and body and enthusiasm that I have this morning, I can say, "May the Lord be praised that neither tea nor coffee (nor *headache powders*) have any thing to do with the feeling of elation and enthusiasm that I feel I have." Yes, and I can say, too, that I feel pretty sure that no meat of any kind has any thing to do with it as I will tell you a little later. Now, as I am planning to have quite a talk this morning, a sort of an A B C book on health, I hope you will excuse me if I go into details pretty thoroughly.

### THE A B C OF GETTING WELL AND KEEPING WELL.

I have described pretty well my breakfast. I forgot to say that I want a liberal supply of butter with my shredded biscuit. I think the biscuits cost about a cent apiece; and I should need about a cent's worth of butter and about two cents' worth of milk—just think of it; a good square meal for a nickel, and no cooking; no dishes to wash except the teacup and plate, and a

knife to handle the butter. If you want an egg, it can be cooked quickly and easily and nicely on one of the cheap oil-stoves. Terry uses Pettijohn's whole wheat in place of the shredded biscuit, and I have used it until lately. I may go back to that again; but just now the biscuit seems to "hit the spot" better than any thing else. After putting on a liberal supply of butter I chew it a long while, just as Terry directs with raw wheat. By the way, sometimes when I can not get Pettijohn rolled wheat I have tried eating regular wheat, of course picking it over carefully, and then it is all right; but it takes too long to chew it. The wheat grains must be crushed or rolled or ground up in some way to save the labor of chewing. I prefer skimmed milk rather than new milk, because I do not seem to need the cream.* While at my sister's in Manistee I was pleased to find Mr. Gardner was also using the shredded biscuit. His plan was to cover it with cream and mash it down with a spoon. Now, I think it is better for my health to chew the biscuit and butter, without mixing it with either milk or cream, until it is reduced to almost a liquid by the action of the saliva. It is only after a thorough chewing in this way that you get the delicious flavor of the wheat. Terry says he enjoys eating his meals more than those people do who eat a great lot of every thing, including elaborately prepared delicacies, and I can say the same. I always feel happy nowadays when it comes mealtime; and I thank God for the enjoyment that my meals afford more than when I had meat and potatoes, cake and pie, strawberries and ice-cream, to top off with. The strawberries are all right, as I will tell you when I get to it; but the pie and cake and cane sugar are all wrong for me, and I honestly believe it is so with thousands of others. We have a neighbor who makes beautiful salt-rising bread, and I usually have a half a slice of that with my biscuit. The older it is, and the drier, the better I like it; for I can chew it up then just as I do the shredded biscuit. By the way, zwieback answers very well, especially if it is made of whole-wheat bread. If in very poor health, very likely the rolled raw wheat that Terry uses, *well chewed*, will be the best thing for you; but as people differ, we can doubtless, each one of us, make the selection which suits us best; but do not try to eat too many different things at the same meal. If I am correct, Terry finishes up each meal with raw or uncooked fruit. Now, I do not particularly care for fruit in the morning. I do not think I need it; and if I eat it during the day, and eat as much as I want, it someway seems to make a disturbance. I have also heard that Terry recommends only two meals a day. This might be all right for him; but as our people have long been accustomed to three meals, for the sake of sociability, if for nothing else, I have three light meals instead of two larger ones. We have for years had our supper at 5 o'clock. My supper includes about what I have described—shredded biscuit and a cup of milk. But about 7 o'clock in the evening I have what might be called a fruit meal—fruit and nothing else. I have told you about how I eat apples every evening just before going to bed, and I can heartily indorse what I said some time ago, to the effect that apples are "the best medicine in the world" for me, and I believe they are also the best *fruit* in the world for me.

Some eight or nine years ago I became enthusiastic over the Yellow Transparent apple. I bought two dozen trees, and not only planted some of them on my own premises but on the grounds of each one of the children; and now we all have those beautiful Yellow Transparent apples on all of our premises. I can not tell you how I enjoy watching our apples grow, and looking forward to a time when they will be ripe and ready to drop. To have an apple just right, you want to get it so it will almost drop from the tree if you just look at it. It is understood around here that we are not to pick the apples from the trees of our neighbors; but after the apples drop on the ground everybody is at liberty to help himself before the chickens get them. I told Mrs. Boyden (Blue Eyes) the other day that her early apples were dead ripe, and that she must gather them. I said to her that one great big beauty of an apple dropped off just because I looked at it. I do not know but some of the grandchildren thought grandpa gave the tree a little *shake* when he looked at it. Well, when these beautiful apples get so ripe that you can sink your thumb into them easily, or so you can almost peel them as you would a peach, it is perfectly safe for me to eat *just as many as I want* or *care for*. Our people used to worry when they saw me with a great plate of apples in the evening; but they have got over worrying now. With a sharp knife I take off the peeling, but I greatly enjoy eating cores and all. Somebody told me years ago that apple-seeds and the meat from peachstones have a special virtue in helping digestion, and I have reason to believe it is true. They are like nuts, you will notice. By the way, I am not using nuts very much just now. I do not seem to need them; but I do crave and enjoy good rich cheese. When I am eating great quantities of apples, as I am now, the cheese somehow comes in to make a balanced ration. The acid of these apples I have mentioned seems to have a very beneficial effect, especially in warm weather.

A great deal has been said about the value of lemons, and no doubt they are a great medicine; but these rather tart apples, I think, answer the same purpose, and I find they are pleasanter to take. Besides the Yellow Transparent apples, we have the Early Harvest and the Red Astrakhan. The latter, when grown to perfection, is not only a beautiful apple but a most wholesome one. Three years ago I purchased a little tree of Storrs & Harrison, and this summer it bore a good heaping half-peck basketful of beautiful apples. I think I have been eating a great lot of apples every evening for the last four or five years; and if they were deleterious in any way I should certainly have found it out before this time. They are certainly preferable to any kind of physic sold in the drugstores or that grow in the woods or fields, and I find them more pleasant to take.

Last, but not least, I have for some time back made it a point to drink just as much pure water as I can without feeling uncomfortable. I drink

*A friend of mine who is connected with a sanitarium at Clifton Springs, N. Y., says a good many of their patients can not take milk regularly unless it is skimmed. Milk just from the cows, or with all the cream stirred in it, seems to be too rich for such people, and I am sure skimmed milk is better for me than the other.

nothing at my meals but a cup of milk; but about two hours after each meal, when I begin to feel thirsty, I take a big drink of boiled cistern water. I prefer it boiled, because the large amount of coal smoke in our vicinity settles on the roofs of even our slated buildings so as to give the water a smoky taste. Boiling precipitates this smoke and dust, and makes sure that all germs are destroyed; and I am pretty sure that boiled water is more wholesome—at least for myself.

In closing let me say something about the lean-meat diet. It is no doubt a fact that many people *can* live on a purely vegetable diet (and perhaps keep in better health on such diet), while others can not. I do not pretend to decide in regard to this matter. I believe a majority of our physicians think a mixed diet is the most wholesome. Those who have charge of the military schools of our government have, I believe, decided in favor of a mixed diet for soldiers; and, notwithstanding what I have said in the above, if I should have an attack of chronic dysentery, just as I have had every little while almost all my life, I think I would adopt an exclusively lean-meat diet for several days until I got over it. This diet which I have prescribed so many times in the past dozen years or more is hardly worth while to go over. What is termed in restaurants a "Hamburg steak"* comes the nearest to what is called the Salisbury treatment. It is just chopped or ground lean beef nicely broiled. Take this and nothing else three times a day for three or four days, and, so far as my experience goes, it will wind up every thing in the line of dysentery or summer complaint.† You will need to get fresh meat for this purpose. Now, our vegetarian friends might be able to furnish me some substitute for the lean-meat diet. Milk toast is very commonly used, and I think I would try the milk toast first. If that will not answer then try the ground meat.

Some have anxiously inquired about garden vegetables. You know I have been a great exponent of gardening; in fact, I have written several gardening books. Well, just now we are having beautiful green peas, string beans, Golden Bantam green corn, etc.; and I occasionally have a small dish of some one of them with my shredded biscuit—not all three of them, and not as much of any as I might feel inclined to eat. I can use almost any of these without any bad results if I make a principal meal of them, and be careful not to eat too many. Nature will handle things difficult of digestion if not too big a dose—especially too big a dose to start with. You can gradually accustom a cow or horse to a change of food; but do not give them too much the first time. It is so with humanity, I am sure. People are made sick by eating honey because they have not had any for a long while, and then all at once they eat a big lot. Notice how the boys get sick after cutting a bee-tree, or how children eat too much of any thing when they first get hold of it. I eat a great lot of apples and feel better than without them, because I have eaten them for years just before going to bed. In fact, when I am away from home, and am obliged to go without the apples, I do not sleep as well. There seems to be a turmoil in my digestive apparatus because the apples did not come along at just the accustomed time. I told you that I had lost my taste for sugar. I do not care for it, and feel unpleasant after eating it. When I begin to feel hungry for any sweets I find a little honey is better than sugar; but at my age, and with the present condition of my system, I feel better without sweets of any kind. Perhaps if I were a growing boy it would be different.

I have almost taken it for granted that, with the great light and teachings now before us, every invalid is staying outdoors as much as possible, and especially sleeping outdoors, or as near it as can be. Not many days ago I found two people, right in the middle of July, sleeping in a room with all the windows closed. They said they could not open them on account of flies and mosquitoes, and they had not yet got around to having screens. One of them owned up that he was threatened with consumption, and had been for some years. May God help us in our efforts to "spread the gospel" of pure air as well as pure water (and wholesome food), such as God intended we should use.

As this matter of eating fruit is one of the most important things in regard to getting well and keeping well, I hope you will excuse me for going to some length on the subject, and using some very plain talk. A good many say they can not use fruit; but you can if you commence by taking a little at a time, and take it at just such an hour each day. About 7 o'clock in the evening seems to be about the best time for me. Commence with one very ripe mellow apple—one that is rather tart. After a few days you can take two; then take three. It is something like getting used to eating lemons; and you want finally to become sufficiently accustomed to them so that you can eat enough good mellow apples to cause the bowels to move freely the next morning. Eat apples enough or use fruit enough of some kind to have the bowels move surely *once* a day, and if they move twice I think it is still better.* Fruit, especially the apple, such as I have mentioned, seems to have a cleansing power, and also power to neutralize any tendency toward biliousness, such as many people have in warm weather. You can soon determine how much fruit is needed to produce the desired effect. Strawberries, and berries of other kinds, will answer the same purpose, but they are likely to be rather expensive—rather more so than the apples. Now, do not be troubled if this fruit does cost you a little more than you have been paying for your meals. It need not cost you more than beefsteak, and not nearly as much as going to a doctor or buying medicine at a drugstore to cure constipation. Besides the fruit, you will need to drink plenty

*When you go into a restaurant and order a Hamburg steak, tell them you want it without onions. Unless you do they will be pretty sure to serve it with onions; and onions always distress and trouble me.

† You need not think I am recommending something I have not tried thoroughly; for, to tell the truth, at one period in my life I was on the lean-meat diet for 18 weeks, not having even a cracker nor a crumb of bread during all that time. I know from practical experience that one can live and get along very well on either meat alone or on a vegetarian diet alone.

* If this fruit diet should answer better than any alarm clock in getting you up very early in the morning, do not be worried. Getting up early will be a good thing for your health, I am sure, besides the thorough moving of the bowels before taking up the tasks of the day.

of pure soft water, but not at the same time you eat the fruit nor at mealtime. Whenever you feel a little thirsty, drink as much pure water as you can without feeling uncomfortable. In warm weather, Terry says, we ought to drink half a gallon a day; and after carefully observing the matter I am sure that plenty of water has much to do with cleansing the system from any impurity that might otherwise accumulate. All sorts of diseases and aches and pains are the result of letting foul and fermenting matters obtain a lodgingplace in different parts of the system. Of course, you must have also abundant exercise in the open air. No one can "get well and keep well" who is not busy with mind and hand; and he ought to be busy in helping somebody, or in helping along this great busy world where God has placed us.*

GETTING WELL, KEEPING WELL, ETC.

It is refreshing to find that my health notes in the present issue are so well seconded by some of the great doctors. See the following, which we clip from the Cleveland *Press* of Aug. 5:

THE SECRET OF KEEPING COOL.

That is a very simple secret—how to keep cool in summer. It may be told in a few words—live a wholesome life.

And what is a wholesome life for "dog days"? Well, first of all, keep well. Keep clean, inside and out. This means a daily bath, warm or tepid, and the drinking each day of from two to three quarts of pure cold water, taken at times other than with or near meals. It also means attention to the excretions.

Wholesome food for the summer should be light. We need much less food in summer than in winter. Fruits, grains, and cereals, salads, and a little milk or cream—these afford every need for feeding the body and for pleasing the taste. Two meals are better than three, and between meals nothing should be eaten. Spices, condiments, pastries, and all fancy foods should be avoided. Tea, coffee, and tobacco tend to make one feel the heat. Alcohol in any form is a "delusion and a snare." A glass of beer or a "peg" of whisky may make one feel cooler for a time, through paralysis of the nerves. The first effect, however, soon passes, and then he feels hotter than ever. For relief—another drink, and so on.

Lastly, if you want to keep cool in summer, don't worry about the heat; don't talk about the heat; don't, if you can avoid it, even think about the heat. If you will follow these simple rules you will not only be safe and comfortable during the heated term, but will come actually to enjoy, as many do, the "dog days." W. R. C. LATSON, M. D.

A COMFORTABLE HOME FOR TWO OLD PEOPLE.

While I have been writing a series of articles under the heading of Our Homes for the last twenty-five years and more, the consideration of building what is called a home has often come up. When we had a family of five children, before any of them were married we built a brick house that we thought would be about right; and it was about the thing we needed until the children married and moved away. Then Mrs. Root protested about having such a large house to care for. I proposed locking up some of the rooms that are not needed; but she insists that it is almost as much work to care for such a room and its contents as it is to care for an occupied room. She had been talking about a little home that could be cared for with very little work. The "cabin in the woods" No. 1 filled the bill pretty well except when company came. This little "home" was only 14x20; but with a cheap cloth curtain across the middle, making two rooms of it, and a little kitchen on the back end, it answered very well. When we went to our Florida island we built something on the same plan, only a little larger, and had it planed and painted, inside and out. This answered very well; but as there was no ceiling overhead, and there were cracks where mosquites got through, it did not suit Mrs. Root. Accordingly, when we decided on having a permanent winter home at Bradentown, Fla., we spent quite a little time in making diagrams and discussing various matters. We finally settled down on the cottage shown on page 819, July 1st issue.

As several inquiries have come in asking about the interior arrangement we submit the following diagram; and after having lived in the house one winter we find it about right. We discussed

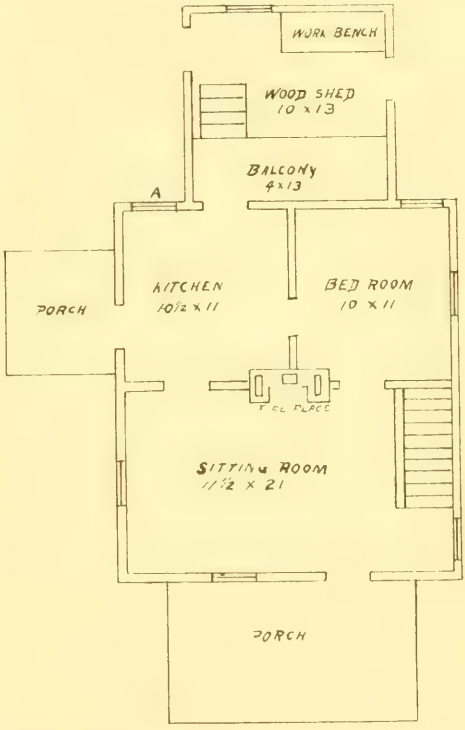


DIAGRAM OF A. I. ROOTS COTTAGE AT BRADENTOWN, FLA.

having a bungalow instead of a 1½-story house, but it would have cost quite a little more money. Going upstairs and down very much is tiresome, it is true; but when you go to the expense of making a good substantial roof over your head it seems almost too bad that this roof should not cover *two* sets of rooms instead of only one. Another thing, a house made so nearly square is not very common, but a square building gives one much more room for the amount of material than any other unless it is a round room. The bedroom, as you will notice, has two doors and

*In concluding these health notes I would advise every one interested in what I have outlined to read T. B. Terry's articles every week in the *Practical Farmer*. My own opinion is that the great Father above is leading Bro. Terry to explore regions almost unknown along the line of getting well; and I feel he is enlightening mankind in a matter of more importance than almost any thing else that has ever before come up in the way of relieving and avoiding pain and suffering here in this world.

two windows. In warm weather these doors and windows are always open, so we get a breeze across the bed, no matter what direction the wind blows. All of the windows and outside doors are, of course, well screened with wire cloth. As a fireplace gives better ventilation than any other arrangement ever invented, we had one made, as you will notice, in the very center of the building. There is fuel on our acre of land —probably all we shall ever need. When the nights and mornings are cool, a very little fuel gives the best warmth I have ever found from any source, and at the same time ventilation that is sure and ample. Our carpenter told us to be sure to have the fireplace and chimney entirely disconnected from any part of the woodwork. This makes it safe against fire; and the sagging of any part of the foundation would not cause the plaster to crack. The chimney has two flues clear up to the top—one for the fireplace and the other for the kitchen stove, so there can be no conflict in the draft.

Although most of the houses in Florida are not lathed and plastered, we decided on having the whole house finished in that way; for it is almost the only way to avoid having crevices where flies and mosquitoes and other insects might possibly find a hiding-place.

While we ordinarily have but little use for an upper story, we find it is very convenient when friends come to see us. The upstairs part is done off very much like the one below, except that there is one very large clothespress at the head of the stairs, and two more on the north side of the chimney. We have a very convenient clothespress opening from the little bedroom under the main stairway. The ground is slightly sloping back from the street so that our west or front porch is only about 18 inches above the level of the ground; but on the back side, where the woodshed is, the floor of the house is nearly four feet above the ground. This gives us a chance to have what we call our "balcony," which is a floor with a railing around it on a level with the floor of the house. Then some steps, as shown, go down into the woodshed, and the fuel is piled up underneath this balcony. In one corner I have a work-bench.

Just outside of the door that opens into the woodshed we have a safe covered with wire-cloth for keeping food and provisions secure from flies, and yet where they can get a cool breeze.

Right underneath the window marked A is a hatchway that leads into my incubator cellar under the northeast corner of the kitchen. This incubator cellar is about half above ground and half under. As I explained some time ago, it is made of circular brick such as you use in making a cistern or well. The incubator stands in the center; but as the wall goes up only about 3 ft. to the level of the ground, there is a nice convenient shelf on the ground level for placing various articles so as to have them right at hand without any stooping over.

Now, all things considered, we find this a very comfortable home for a couple of old people; and although it is a comparatively small house, there is room enough for the children or grandchildren when they find it convenient to call around and look in on the old folks.

Some of you may wonder why we did not put on at least a little ornamental work so our cottage would not look so exceedingly plain. Well, we thought of that, and we may add something of that kind later, especially around the porches. But let me call your attention to the fact that when Ernest and John built their cottages across the way, something over twenty years ago, they paid out a good deal of money for ornamental work over porches, upon the cornices, etc. Well, Ernest has recently had a man pulling down all this ornamental scrollwork, principally because it was full of cobwebs, difficult to paint, and, besides all that, it is all out of fashion. Work that cost a great deal of money several years ago, has been torn down and burned up for kindling-wood; and I believe the general verdict is that the house looks better without it. Mr. Calvert has been doing similar work on his own home; and in remodeling our own porch a few years ago, we took out in like manner a lot of expensive "gingerbread work." Mrs. Root objects to any thing about the home that prevents taking a broom or brush and getting out the cobwebs and dust so the whole structure can be repainted, say once in ten or fifteen years, or when needed. I believe a similar reform is being inaugurated in the way of furniture. Instead of having fancy work that harbors dust and spiders, and is difficult to clean, most furniture is now being made plain and simple Put on a high finish, if you choose, but do not have a lot of complicated ornamental work. Speaking of finish reminds me that our Florida home is all done off inside with what is called the "beeswax finish." Turpentine and beeswax are melted together; then after staining and filling the woodwork, this beeswax compound is put on and rubbed down hard with a woolen cloth until it gives a polish. Woodwork finished in this way is not easily marred by bumping, and a little more beeswax with "elbow grease" will restore any place marred or spotted by accident. Huber had his new house finished in this way, and our large new office where I sit dictating this has all the woodwork finished off with the beeswax composition that I have described. It is cheaper than varnish, and anybody can do it if he is willing to furnish the muscle. Surely bee-keepers ought to be able to adopt the beeswax finish for the woodwork for their homes.

In regard to this beeswax finish I have been describing, all kinds of varnish, or at least most varnished work, is likely to crackle with age, besides showing white streaks where it has been bumped or scratched. This wax finish never crackles, and never shows any white streaks; and is is less work to renew it when marred than it would likely be to scrub the painted woodwork with soap and water.

Just a word in regard to porch floors. It now seems to be a difficult matter to find any sort of paint or floor preparation that will stand the weather, especially after snow has drifted in on the porch and melted, or where the rains have beaten in and the water has been allowed to stand for some time on the porch. After studying over this matter we made our porch on the island with narrow boards planed both on the tops and edges, placed ¼ inch apart. We liked it so well that our porch in Bradentown was made in the same way. I think the floor boards

were about four inches wide—possibly five. They were planed on the edges; and before laying the floor we stood the boards all up edgewise and painted the edges; and after they were laid, the tops were given a good coat of paint. The great trouble with a floor made of matched flooring is the shrinking and swelling whenever the rain beats in and stands for some time on the floor. Another advantage of a porch with openings between the boards is that, in sweeping or scrubbing, the dust or the water goes right down through, and it is very soon all dried off. I am sure such a porch floor will last much longer than where we have a tight floor of matched lumber. Of course, there should be a little slant outward, although this is not so important with a floor with a slight opening between the boards.

Since dictating the above, Mrs. Root objects to having the opening between the boards large enough to let small articles fall through; and I notice that T. B. Terry, while recommending a similar porch, says we should push the boards up tight together. When they come to shrink this will leave a crack large enough to let the air in and dry out the floor. He says that, where we use matched flooring, the water is sure to get in and rot out the floor much sooner than where there is a crack between each two boards.

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### OUR "ROBINSON CRUSOE" ISLAND—ANOTHER GLIMPSE OF IT.

We clip the following from the *Southern Ruralist*. As it was written by one of my particular friends (a schoolma'am), it may be of interest to our readers:

Five years ago last month we landed in Manatee Co., Florida, where it is perpetual summer. We settled on a little island two hundred yards wide and eight miles long—the Gulf of Mexico on the west and Sarasota Bay on the east. The gulf is about 1000 miles wide; the bay, one.

There was no one living on the island when we came, and only two other families now, so you see our peaceful slumbers are never disturbed by the hurry and noise of the busy city.

The growth on the island is oak, with leaves green all the year; cedar, cabbage palmetto, sea-grape, rubber, and a great variety of grapes and other vines and bushes. We grow our vegetables in the winter months mostly. There was an abundance of coons, foxes, and wild cats when we first came, and we had to fight our way to save our poultry, and coons are bad yet.

There are six of us children—four girls and two boys. We girls went to school in a little row-boat. We never had any mishap, although the waves toss us about pretty roughly at times.

My oldest sister is lately married, and lives near. I am teaching school, and the two youngest, 12 and 14 years, have to paddle their own canoe.

Father is keeping bees, and raising queens for The A. I. Root Co. and others. He sends his queens by mail in little cages. Our main source of honey is saw-palmetto and cabbage-palmetto. We have extracted over 5000 pounds so far from saw-palmetto. Cabbage is not in bloom yet.

My two brothers and brother-in-law fish. They each have a sail-boat and carry a net 200 or 300 yards long on each boat. When they find a school of mullet they surround them with their nets, pushing their boats with long poles, then they pound on their boats and on the water to frighten the fish, when they will rush into the nets and gill themselves. Then the boys pull the nets back into the boat and take the fish out, when they will be ready for another strike.

Sometimes they come home loaded down—2000 to 2500 lbs. to the boat. Then sometimes they fish all night and do not catch enough for breakfast.

This is a delightful place to live in. The thermometer seldom goes above 94 degrees nor below 40.

We have two Jersey cows and a nice flock of hens. We do not have to build houses for either.

Sea-turtles are crawling now. They come out and dig a hole in the sand and lay from 100 to 150 eggs as large as hens' eggs.

The largest turtles weigh about 400 lbs., but dress only about 60 lbs. of clean meat, which is about as good as Florida beef. They can hardly crawl on land, and are no trouble to catch; and, once turned on their backs, they can never get over again

Bathing in the gulf is superb—no undertow, and lots of beautiful shells on the beach. We can sit on our porch and see the launches and sail-boats flitting about on the bay, and large vessels on the gulf.

There is an abundance of fish and oysters to be had for the taking, and plenty of shark, stingaree, and mosquitoes to make it interesting. Before coming to Florida we had considerable sickness, but not enough since to need a doctor.

FLORENCE SHUMARD.

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### "LET US QUIT BEING HYPOCRITES."

We clip the following from the *Christian Endeavor World* for June 11:

WHAT MIGHT HAVE BEEN.

The San Francisco *Star* has the following sensible comments on the recent visit of the fleet:

"The $180,000,000 invested in the war-ships now in San Francisco harbor would irrigate 6,000,000 acres of arid land, and provide homes for 120,000 families, giving to each family fifty acres of land. That amount of money would build a railroad from the Atlantic to the Pacific; and such a road owned by the people and for the benefit of the people would squeeze every drop of water out of the railroads of the country.

"That amount of money would build and equip a national telegraph and telephone system, which, conducted for the people, would squeeze every drop of water out of the privately owned telegraph and telephone systems.

"That amount of money, properly spent, would go far toward relieving the people of the tremendous monopoly burden now resting on their backs.

"That amount of money would build from sixty to one hundred great electric-power plants for the people, and free them from the monopoly that is now skinning them.

"Instead of building more war-ships, isn't it time to call a halt? With tens of thousands of our citizens begging for an opportunity to earn a living, isn't it time to call a halt on this wicked waste of money and energy? If we are going more and more into the war-ship business, let us be honest and pull down our churches. If we are to glorify war, let us quit glorifying the Prince of peace. Let us quit being hypocrites."

We are very glad indeed to see that the *World* gave place to the above; but what I would like to say would be a hearty amen to the above. And, by the way, it would rejoice my heart to hear a hearty amen to the same from every religious paper in our land. Is it not true that we already have too many million-dollar war-ships as well as too many *revolvers?* Let us quit being hypocrites, as the San Francisco *Star* has it, and come out in the open, and demand that this war-ship business be stopped in exactly the same way that we as a people not only demanded but *succeeded in getting*, the motto back on our coins, "In God we Trust." And *if* we trust in God we certainly do not need to invest 180 millions of dollars in one fleet of war-ships.

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### OUR $180,000,000 FLEET OF WAR-SHIPS.

The above was prepared for GLEANINGS several weeks ago, and would have been printed without further comment; but I presented the matter in our Thursday-evening prayer-meeting, and our good pastor, Rev. J. Edward Kirbye, put the matter in such a different light that the item was held over. He said that our good President's plan was to make this fleet of war-ships a great messenger of peace. His design was, in fact, to have it do missionary work. The United States has already put a stop to superstition and cruelty in Cuba; but we could do this only by means of our war-ships and brave men. In a like manner the United States, with the assistance of other nations, has just recently begun to demand the cessation of such outrages as they had in China, and the Armenian massacres in Russian territory. It would be a sad thing for us to undertake to restore order and have some heathen nation beat us in our effort to protect the

helpless women and children of other lands in the same way we protect those of our own domain. There is practically no suffering from starvation anywhere in the United States or wherever this nation has sway; but in China and other foreign lands starvation is continually going on, and particularly among helpless women and children. If the United States, in connection with the other powers, could take cognizance of these outrages, and protect the suffering and innocent ones, it would certainly be a magnificent missionary enterprise; and if *nothing else* will give us the ability to do this, let us have a fleet of warships. Our good President is a pusher, and we have abundant reason to thank God for it. He would have to be more than human if he did not, in his pushing, once in a while make a mistake. We rejoice to have a man at the head of our nation who insists on having our laws enforced, even if it be huge corporations that try to trample law under foot.

Let me close this little talk by calling your attention to the importance of attending the weekly prayer-meeting; for this meeting is, in my opinion, the place above all others where questions like the above should be discussed in a kindly and Christian spirit. Somebody said in the same meeting that as good a man as Oliver Cromwell, many years ago, suggested that, while we trust in God, we should at the same time "keep our powder dry."

The *Independent* for July 30 suggests the President is going to extremes in the matter of battleships. It says:

Let President Roosevelt initiate a movement that will make the United States the first of the world powers to disarm. That would be an achievement worthy of the Nobel Peace Prize.

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USE OF SWEET CLOVER.

The following, by Prof. H. J. Waters, of the Missouri Experiment Station, is a very clear presentation of the case for sweet clover. The writer must be a native of Missouri, because he intends to convince the farmers of the value of this clover by actual demonstration. The article originally appeared in *Hoard's Dairyman* of July 24, which of itself is quite an endorsment, for that journal prints nothing but up-to-date, reliable, and scientific information; moreover, it is read by a great army of scientific dairymen.

We have had some experience with sweet or Bokhara clover. Stock are not fond of it, but will eat it when very anxious for something green. Some have tried to brand this weed as injurious, and say its cultivation on that account should not be encouraged. About that I think this way: Missouri is the banner weed State of the Union, I think. There is no idle land, no vacant places in Missouri, during the growing season. It is all occupied either by crops or weeds. Now, this clover is one of the best soil-builders we have. It will grow on land too poor for cow peas. It will actually grow on land too poor for ragweed. The question is simply this: Shall we have Bokhara clover or ragweed or horseweed on our poor lands—a weed that will build them up or those that will not? In addition to that, ragweed, ironweed, and other weeds do not furnish any thing valuable whatever; whereas this sweet or Bokhara clover is one of the best bee-plants there is; therefore we could increase our honey crop with it.

We are making this experiment at our station. There are portions of land in this State, hills so poor that we do not deem them worthy of putting in cultivation. We have been trying a number of plants to see if we can find some valuable plants that will grow on that sort of land. We have tried alsike, red, and Bokhara clover. This is the third year we have tried Bokhara clover on that sort of land. Although it lives two years and dies, it comes from the seed almost every year; and on that land now there is a growth of Bokhara clover four feet high. This clover is gathering nitrogen, and adding to that soil and building it up; and in a few years blue grass will grow on it, Land can be made in that way, and animals can be supported on land of that sort. On this same land, a little later, red clover will grow, and other clovers. We must do something to utilize our poor lands, and the Bokhara clover, in my judgment, will be the clover that will do that. You will see it growing on the sides of the railroad where cuts have been made, and on the roadside where nothing else grows. I would say that the Bokhara clover is much easier to kill than other weeds. We let it grow two seasons, and the third year there was none left.—Prof. H. J. Waters.

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# TEMPERANCE

HURRAH FOR FLORIDA!

We clip the following from the *American Issue* for August 1:

On July 1, Lee County Fla., joined the list of dry counties by a majority of about 150 votes in a total of 700 votes cast. Four years ago the wets carried the county by about 80 votes; two years ago they won by 3 votes. The gradual change in sentiment is typical of the progress being made in Florida.

The voting of this county dry leaves but nine counties in Florida where liquor can be sold at any point; and there are less than twenty saloon towns and cities in the State. Thirty-seven counties are entirely dry.

I wonder if it is really true that there are less than twenty saloon towns in the whole State of Florida. I call attention to this because the *Sunday School Times* some little time ago gave Florida more credit than she honestly deserves. If the above statement is all true I think we can all join in saying, "May the Lord be praised."

THE ORPHAN "PROHIBITION BABY."

I was very much pleased to find the following in the Chicago *Advance:*

THE ONLY PLATFORM.

"The Columbus convention has given the country the only political platform this year in which a majority of the people believe. We have presented the only platform that one voter in a thousand will read. The Democrats and Republicans have held their conventions, and the average voter is not able at this moment to understand what the issue is. It will take speeches of acceptance by Mr. Taft and Mr. Bryan to make up some issues, and when they are made up we are certain they will be factitious issues. Prohibition is an orphan baby. The Republican party looks at it and says, 'I'm not its father;' the Democratic party says, 'I'm not its mother.' They try to raise it on the bottle, and the kid dies. What it needs is a party to take care of it."—*Eugene W. Chapin.*

Of course, the *Advance* put it in quotation-marks, as you will notice, as they are the words of the candidate of the Prohibition party for the presidential chair; but the heading, I take it, is one furnished by the *Advance.* The question now is, "What do *you* think of it?"

OHIO THE CENTER OF WAR ON LIQUOR.

Developments of the present week make it certain that nothing can stop the fiercest and most far-reaching fight on the liquor question that Ohio has ever experienced. State and national questions and the election of a United States Senator are, to an extraordinary degree, being lost sight of in the controversy over control of the saloon.

The Anti-saloon League has accepted the challenge. From their headquarters the announcement is made that the fight is to be every bit as hot as that waged in the Pattison-Herrick contest of three years ago. "It is the same fight, only more general, and with the shoe on the other foot," says Wayne B. Wheeler, State Superintendent of the Anti-saloon League.

Three years ago the League supported John M. Pattison, Democratic candidate, with all its strength. Pattison was elected, the only man on the Democratic state ticket, by more than 40,000, overturning a majority secured by Myron T. Herrick, but two years before, of more than 110,000. In the present contest, which is already sizzling in every part of the State, the League is behind Andrew L. Harris, Republican candidate, and is fighting Judson Harmon, Democratic nominee, at every turn.—*Cleveland Plain Dealer.*

Ernest remarks (in regard to the above) that the only thing we have to fear is the half-heartedness and indifference of professing Christians.

# Read His Letter

**Read of the economy and profit in this farmer's potato-digging,—how he gets every potato in the field,—how he avoids loss from scarred and crushed potatoes,—how he has made the work easy and fast.**

## It Tells You

how the

## Acme Hand Digger

**ATTACHMENT**

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Potato Implement Co., Traverse City, Mich.

Gentlemen:—Two years ago I bought one of your Acme Hand Potato Diggers and after giving it a short trial in the field, my sons, who were digging the potatoes, were so pleased with the Acme Digger that I now have five in use on my farm.

The Acme is just the digger we needed. Unlike the machine diggers it digs clean, gets every potato in every hill, doesn't scar the stock, and is not bothered by the vines. The men work easily, yet quickly, and don't get so tired as with ordinary fork or hook digging.

I know from my own experience that the Acme Digger does better, easier and cheaper work than any other digger I have seen, and the best recommendation I can give anyone is that I continue to use it on my own farm.

I am, yours truly,
F. LAUTNER, Leelanau County.

**Send $1.00 Today.** Let the Acme Attachment *prove* itself to *you*. Let it prove that your dollar is better than $100 investment in other diggers—that it will dig potatoes better and more economically—that it is the digger you have been waiting for. *Sent prepaid by express.* Money returned if you had rather have it than keep the digger.

Pamphlet and Potato Book free on request. Send now. Address Box 520,

**Potato Implement Co., Traverse City, Mich.**

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published only in The Practical Farmer each week, have been the means of saving lives and thousands have been helped to enjoy life more than they have ever done before. Send **Twenty-five Cents** to The Practical Farmer, Philadelphia, Pa., and read Mr. Terry's Health Hints **thirteen weeks on trial.** You will be surprised to find how simple a matter it is to get well and strong and keep so. The latest and best that can be given you, together with strong editorials on Agriculture, Live Stock, Gardening, Home Life, etc. A high class weekly, well worth the subscription price of $1.00 per year. Address

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Premium C is any book in A.

Premium D is Root Standard smoker

Premium E is Daisy foundation-fastener.

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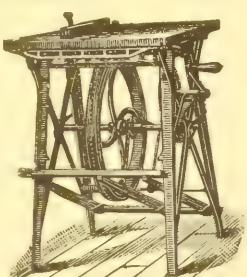

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Price $1.00 postpaid anywhere.

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# "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

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## COMB FOUNDATION

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**Dittmer's Process is Dittmer's**

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are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey, Highland Farm queens will produce them. We are now sending queens of this celebrated strain by return mail at the following prices:

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| Select untested queens . . . | $ .75 | $4.00 | $ 7.50 |
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Safe delivery and satisfaction guaranteed. Send for queen circular—it tells why Highland Farm queens are superior to others.
Address all orders to

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*1905-1906 Queen-breeder in Apiary of Dept. of Agriculture, Washington, D. C.*

During that time Caucasians were being distributed by the department so that I handled many of the imported queens and bred much of the stock which other breeders are using, and am in a position to furnish the best of Caucasian queens. They are hardy and prolific, but not great swarmers; are builders of white combs, great honey-gatherers, and their extreme gentleness has won for them the name "STINGLESS." Queens are reared from imported mother of gray type. Have three-band or leather-colored Italians also. They are hustlers.

PRICE LIST AFTER JULY 1.

| GRAY CAUCASIANS. | | | | THREE-BAND ITALIANS. | | | |
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| Untested queens..... | 1, $ .75; | 6, $4.25; | 12, $ 8.00. | Untested queens..... | 1, $ .60; | 6, $3.35; | 12, $6.50. |
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And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens . . . . . | $ 75 | $4 00 | $ 7 00 |
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**All queens now go by return mail.** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

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Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J L FAJEN, . ALMA, MO.**

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# ITALIAN QUEENS

Bred from best stock to be had in the country, and by best methods, insuring beautiful, vigorous, long-lived queens. Prices for 1908:

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested . . . . . | $1.00 | $ 5.00 | $ 9.00 |
| Tested . . . . . | 1.50 | 8.00 | 15.00 |
| Select tested . . . . . | 2.00 | 10.00 | 14.00 |
| Breeder . . . . . | 5.00 | | |
| Two-frame nucleus . . . | 2.25 | 12.00 | 22.00 |
| Three-frame nucleus . . . | 2.75 | 15.00 | 28.00 |
| Full colony on eight frames | 5.00 | 25 00 | |

Add queen wanted to above.

I shall offer no Caucasians for sale this season.

**E. M. GRAVES, Ioamosa, San Bernardino Co., Cal.**

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# Golden Italian Queens, 75c

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Mailed promptly. Safe arrival and satisfaction guaranteed. Circular.

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## QUEENS of MOORE'S STRAIN OF ITALIANS

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

PRICES: Untested queens, 75 cts. each; six, $4.00; doz., $7.50. Select untested, $1.00 each; six, $5.00; doz., $9.00.

I am filling orders by return mail.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

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Wurth's queens take the lead everywhere; have 600 queens; can send by return mail; untested, 60 cts. each. Send for circular.

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**W. H. Laws** says that, while his trade is very satisfactory, and about as large as he can handle, yet he does not want you who are new to him to forget that the very best of honey gatherers and a square deal is what you will always get when you buy Laws queens.

You should try his strain of Red-clover Long-tongue Italians, one firm alone having bought over 3000 of the Laws queens in the past six years; and more than half the queens sold this season are sent to customers who have bought in former years. A long string of testimonials testify to their merits, and you will make no mistake in buying Laws queens.

Single queens, $1.00; 6 for $5.00. Some very fine breeding queens on hand. Safe delivery and satisfaction guaranteed at $5.00 each. Address

**W. H. LAWS, Beeville, Bee Co., Texas.**

## ITALIAN QUEENS BY RETURN MAIL OR MONEY REFUNDED

Warranted, 75 cents each, six for $4.00; tested, $1.50 each. Circular free.

**D. J. BLOCHER PEARL CITY, ILLINOIS**

## GOLDENS, 10c.

Send 10 cts. (silver) for cage of living bees, **HARDY COLDENS,** and examine before ordering, if you care to see the most beautiful race on earth. **C Oscar Fluharty, Sandusky, W.Va.**

**GOLDEN-ALL-OVER and RED-CLOVER**

## ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1 00 | $5.00 | $9 00 |
| Select untested | 1 25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.

Positively all orders filled in rotation.

**Wm A. Shuff, 4426 Osage Ave., Philadelphia, Pa**

**Long-tongued**

## Red-clover Queens

**Bred by their Originator**

Do you want to get some specimen queens of the world famous red-clover stock of Italian bees? Then buy from me, because I am the originator, and surely ought to know how to breed them in their purity. When you get them from me you know you have the real strain. For years I have devoted time and skill to this stock, trying to reach perfection. I can submit many splendid testimonials in favor of this stock to show my work has not been in vain. Try them, and YOU will be pleased also. I endeavor to please the practical man looking for definite results in dollars and cents. Many years' experience as head apiarist of The A. I. Root Co. enables me to fill the most exacting order with complete satisfaction to the purchaser Let me show you how well I can please you.

**Prices**

| | | |
|---|---|---|
| Untested queen | June to October, | $1 00 |
| Select untested queen | " | 1 25 |
| Tested queen | " | 2 00 |
| Select tested queen | " | 3 00 |
| Breeding queen | " | 5 00 |
| Select breeding queens | " | 7 50 |
| Extra select " 1 yr. old | " | 10 00 |

**F. J. Wardell**

**Uhrichsville, Ohio, U. S. A.**

## 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co. R. F. Holtermann. W. Z. Hutchinson. Morley Pettit etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5 00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11 00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

## QUEENS

of the Robey strain of three-banded Italians during the season of 1908. Warranted queens, 75 cts. each; $4.25 per six; $8.00 per doz. Tested queens, $1.00 each. Satisfaction or money refunded.

**L. H. ROBEY, Worthington, W. Va.**

**MILLER'S SUPERIOR ITALIAN QUEENS**

By RETURN MAIL; bred from best Red-clover working strains in United States. No better hustlers; gentle, and winter excellent. Untested, from my SUPERIOR breeder: one, 75c; six, $4.00; twelve, $7.50. Special prices on lots of 50 or more. Satisfaction and safe arrival guaranteed. Circular free.

**ISAAC F. MILLER, :: Reynoldsville, Pa**

## Convention Notices.

The seventh annual report of the Illinois State Bee-keepers' Association has been published. It contains the last report of the National Association, and also the Chicago Northwestern. Members of the Association receive a bound copy free. Bee-keepers can secure paper-bound copies for 25 cents by applying to the secretary, Mr. Jas. A. Stone, rural route 4, Springfield, Ill.

NOT A CANDIDATE.

I note that a call has been made for a postal-card vote nominating candidates for election to office in the National Association, and, in this connection, let me ask my friends not to vote for me for any office—other duties are too numerous to allow me to do justice to an office.

W. Z. HUTCHINSON, Sec. N. B. K. A.

A WORTHY ENTERPRISE.

The Worcester County Bee-keepers' Association, of Massachusetts, intend holding their third annual exhibition in the Horticultural Hall of Worcester, Sept. 14, 15, 16. The exhibition is free to all, and there are no entry fees to be paid by the exhibitors. Prizes in money, bees, queens, and supplies will be given. The competition is open to New England except for numbers 25, 26, 27, 28, 29, which are open to the world. All exhibits must be in the hall by noon, Sept. 14.

There will be a semi-annual session of the Nebraska State Bee-keepers' Association held in Lincoln during the State Fair. The meeting will be held on Wednesday evening, Sept. 2, at 7 o'clock, at the bee and honey house on the State Fairgrounds.

All bee-keepers in attendance at the fair should be present. There will be interesting discussions, exchange of practical experiences, and renewal of acquaintance. Come to the fair and see one of the best honey exhibits displayed in any of the central States, and enjoy a meeting of one of the growing State bee associations. LILLIAN E. TRESTER, Sec.

Lincoln, Neb.

NOMINATION NOTICE.

Each member of the National Bee-keepers' Association is requested to mail, by postal or letter, to N. E. France, Platteville, Wis., on or before Sept. 30, 1908, his nominations for candidates for the offices named below, to be voted on at the regular December election.

President; Vice-president; Secretary-Treasurer; General Manager; three Directors. Oct. 1 the General Manager and one disinterested member will count the nominations and publish results in all American bee-papers. Each member should send in his nominations early. N. E. FRANCE, General Manager.

A CHANGE DESIRABLE.

The bee-keepers of West Virginia ought to get busy with the officials of the State Fair, which is to be held in Wheeling, Sept. 7 to 11. We have read the premium list, and so far as we can find out not a cent is appropriated for bees, honey, or beeswax. Belgian hares are given a place, but bee-keeping is a far more important industry than rabbit-keeping in the war-born State. It seems to us this oversight ought to be corrected at once. West Virginia is one of the best States in the Union for bees, and this ought to be recognized by the fair officials; besides, a liberal premium list will draw out exhibits which will prove a decided attraction to the visitors.

WHO WILL BE PRESENT AT THE NATIONAL?

Often, after a National convention is over, more than one man has said, "If I only had known that Mr. Brown was going to be there, I would have gone." Now, before the coming of the convention I wish to publish in the bee-journals a list of all those who are going to be present. I presume I shall not be able to learn one-fourth of those who will go, but, so far as I can learn, I'll give the names- Now, will you have the kindness right now to take a postal and tell me if you are going? or, if you should decide later that you are going, let me know, and it may be the means of your being able to meet some friend that you otherwise would not have seen. W. Z. HUTCHINSON, Sec. N. B. K. A.

PREMIUMS WANTED FOR HONEY DISPLAYS AT THE NATIONAL.

In the Sun Palace at Detroit, Michigan, where the National convention is to be held October 13, 14, and 15, is a large room, 40 or 50 feet across, the sides of glass, and I hope to see this room well filled with a display of supplies, bees, honey, wax, etc.

Of course, the advertising that comes from a display of goods will amply repay any dealer for making a display; but in order to bring out any display of bees, honey, and wax, there must be some inducement, some premiums offered, and, of late, it has become the fashion for dealers to offer some of their wares as premiums, in consideration of the advertising that comes to them from the mention of their names, as the announcements appear in the program that is published in all of the journals, sent out in pamphlet form to all of the members, as well as distributed and used at the convention.

I am now making up the program, and take this public method, that none may be overlooked, of asking dealers to write and let me know what they can contribute in the way of premiums. I would suggest that premiums be offered something as follows:

Best and largest display of single-comb nuclei of different varieties of bees, accompanied by queens, condition of bees, purity of race, and beauty of hives to be the competing points.

Best ten sections of comb honey, completeness of filling of section, evenness of surface of comb, completeness of capping, freedom from travel-stain, and general neatness and appearance to be the competing points.

Best ten pounds of liquid extracted honey—quality and manner of putting up for the market to be considered.

Best ten pounds of granulated honey—quality, including fineness and smoothness of grain, and manner of putting up for market, to be considered.

Best ten pounds of beeswax—color, texture, and beauty of the cake or cakes in regard to shape to be considered.

The most important, late apicultural invention that has not before been awarded a premium.

If there is some other object upon which a dealer would rather offer a premium he is at liberty to do so. If you prefer, you can simply say what you can offer, and please make it as liberal as you can, that we may have a big display, and then allow me to place the premiums as seems best.

Flint, Mich. W. Z. HUTCHINSON, Sec. N. B. K. A.

THE SIXTEENTH NATIONAL IRRIGATION CONGRESS.

This event will take place at Albuquerque, N. M., Sept. 29 to Oct. 10, and promises to be the greatest in the history of irrigation. Vice-president Fairbanks will open the convention, and Secretaries Wilson, Garfield, and Cortelyou have promised to be there. The chief of the Reclamation Service will also be present. Quite a number of distinguished men will attend the sessions, and speak. Several side trips will be arranged for visitors—among others, one to the $8,000,000 dam at Engle, N. M.; another to the Grand Canyon, and still another to the Tonto dam in Arizona. The convention will make history for the Southwest. W. K. M.

# SPECIAL NOTICES

## By Our Business Manager

THE TOEPPERWEIN WORD CONTEST.

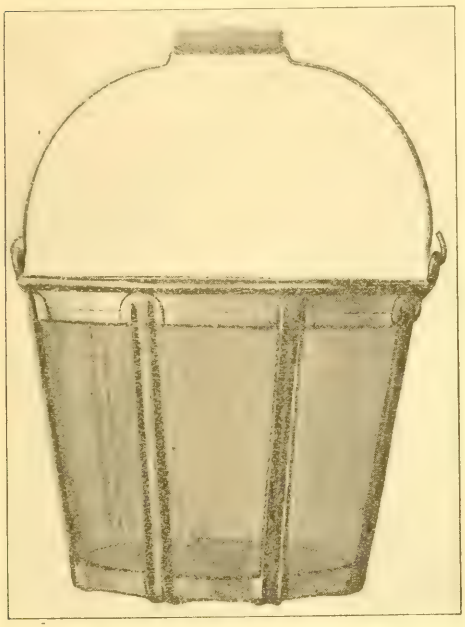
Some of our subscribers have evidently failed to notice the brief announcement made on p. 732 of our June 15th issue as to the result of this contest, in which we gave the names of the twelve highest on the list. We beg to advise further, that, in accordance with their previous announcement, Messrs. Toepperwein submitted to us the list of words from the first prize-winner, with a request that we publish the same; but as it reached us rather too late for the issue intended, as had been announced, we decided to return the list to them, and this was done; but the list was lost in the mails to San Antonio, Texas. Messrs. Toepperwein then took the matter up with the first prize-winner, Edna L. Crocker, requesting her to send a duplicate of the list, to which she replied by telegram that she was unable to furnish such duplicate. It then being out of the question to furnish a copy of this, which disappeared between our office and San Antonio, Messrs. Toepperwein requested us to publish the second list, containing 435 words. It is their impression that this list was sent to us, and they asked us to return it to them. Strange as it may seem, we can not discover that it was sent to us, nor can we recall positively that it was not; but at any rate, this second list, at this writing, is not to be found either. There seems to be no question, however, as to the awards made as published in our issue for June 15, page 732, although it would, perhaps, be a satisfaction to some of the contestants, more than one thousand in number, to have a copy of the list. If it is possible to do so we will obtain a list of the words, 435 in number, and publish it in a later issue. The name of the second winner is now practically certain, and the award will probably go to the party now claiming it. We do not know of anybody claiming 435 words aside from one party who has written us a number of times on the matter. In conclusion we wish to absolve Messrs. Toepperwein from any blame in the matter of not publishing the list, as they left it somewhat with us, and it did not occur to us that there was any necessity for it; and now when we try to discover the list we can not locate the same. While there is very unusual interest taken in this (greater by far than any one anticipated), we do not feel disposed to allow such a competition in our columns again.

WAX CRAFT, BY T. W. COWAN.

We are now in position to take orders for the above book. It is elegantly bound and beautifully printed. See review by W. K. Morrison elsewhere in this issue. Price $1.00, prepaid anywhere.

THE ALEXANDER STRAINER PAIL.

Since Mr. Chalon Fowls spoke so highly of the Alexander strainer honey-pail that we illustrated in the new A B C and X Y Z of Bee Culture, page 177, we have decided to make them and offer them to the public, believing they will fill a long-felt want. We reproduce the cut here for the convenience of our readers. It is nothing more nor less than a skeleton pail with



sides and bottom filled in with a very fine milk-strainer wire cloth, 60 meshes to the inch. This screen is small enough to catch even the smallest particles of dirt or wax. These pails are well made, and we can furnish them at the introductory price, at least, of $3.00 per pail. A wire cloth of such mesh is quite expensive and the labor of making considerable; we can scarcely furnish it for less. As soon as we can determine whether there will be sufficient demand to make it pay in sufficient quantities, the price can be reduced.

# Special Notices by A. I. Root

In response to the kind invitation of W. Z. H. on page 1024, I would say that, Providence permitting, I expect to be present at the National convention in Detroit, Oct. 13, 14, and 15.

GOD'S MEDICINE—MORE ABOUT IT.

We clip the following from the Cleveland *Plain Dealer:*

A woman of 107 years, who died the other day, says she owed her long life to the ripe fruit she ate.

We should be very glad to get further particulars in regard to the above—especially if this good woman's favorite fruit was ripe apples, and if she ate them every evening a couple of hours before bedtime.

UNCOOKED WHEAT AND OTHER GRAINS FOR CHICKS AND HUMAN BEINGS.

Every one who reads the poultry-journals will notice there has been a great revolution of late in regard to the diet of poultry. The testimony is overwhelming in favor of dry food — no more mixed messes with water or even milk, and no cooked food of any kind, especially for baby chicks. Give them "baby chick food" and nothing else, and water to drink. Milk is all right, but do not stir it up with other food. And now the world is just beginning to discover that what applies so well to chicks applies also to human beings.

THE ABC OF GETTING WELL AND KEEPING WELL.

The matter in this issue, and perhaps some more added to it, is to be printed in pamphlet form to be given away. If you will send a stamp to pay postage we will send you just as many copies as you need to give to ailing friends. If they should be the means of giving health to suffering humanity, the knowledge of it will be better pay for me than any pay that might come in the way of dollars and cents. So do not be backward about asking for as many of them as you can use, where you think they will do good.

LEAN BEEF AS A MEDICINE.

Since the matter on page 1014 was printed I was greatly pleased to learn that our family physician had recommended to a patient, who could not take milk toast without pain and distress, to eat nothing but scraped beef, nicely broiled, for several meals. He said good lean beef prepared in this way is easier of digestion than any thing else he knew of, and could be taken safely where the patient could not stand milk at all. It has taken a good many doctors a good while to get hold of the idea that lean meat is sometimes, at least, a very valuable medicine.

FLYING-MACHINES UP TO DATE.

I suppose most of you have noticed by the daily papers that my predictions are coming to pass. Farnam has been making a series of successful flights here in America, and Wilbur Wright has also made two or more successful flights in France. We have not heard from De la Grange and the "June Bug," but the thing is now so well started that flying-machines will probably very soon be an every-day occurrence, even if they should *not* be as plentiful as autos, right away. God grant that they do not duplicate the number of accidents that are being daily recorded with automobiles in the hands of those who can not be satisfied with a moderate and reasonable speed.

SO-CALLED NON-EXPLOSIVE GASOLINE-CANS.

There are certain people who are canvassing the country, offering for sale gasoline-cans for which the claim is made that gasoline or kerosene, after either has been stored in the same for twenty minutes or more is rendered non-explosive. Scientific men assure us there is no known method of making gasoline or kerosene non-explosive; and, furthermore, the so-called electrical arrangement in some of the cans does not produce electricity at all, even if said electricity could exert any influence (which it does not) in rendering the gasoline non-explosive. The fact is, it is very difficult to make gasoline explode in *any can.* If any one has any doubt of this, let him take a can of any sort, pour in gasoline, shake the can well, and try to explode it. All it will do, probably, will be to show a pale-blue flame at the opening of the can when ignited. No amount of shaking or spilling of the burning fluid will cause an explosion. The venders of the so-called "chemical" denaturizing cans, knowing this, are able to perform what has seemed like wonderful stunts. If any reader wishes to try these experiments, let him do the igniting at the end of a ten-foot pole, for gasoline will explode when the conditions are just right.

A "CHICKEN BIBLE."

*Mr. A. I. Root:*—For six years I have been an amateur bee-keeper in a small way, and the A B C book has literally been my "bee bible" every hour of that time. I can't express the enjoyment and profit the reading of it has afforded me. Now, I want to go into the chicken business. Is there a "chicken bible" published anywhere that will do for me what my "bee bible" has done? I am glad to say I am with you on the liquor question, and enjoy the articles in GLEANINGS. I have voted the Prohibition ticket for 16 years. The saloon is the great American monstrosity. F. A. COGSWELL.

Swaledale, Iowa, Aug. 5.

Friend C., I thank you for the very high compliment you pay the A B C book; and I hope our poultry friends will excuse me when I say that, from my point of view, there is no poultry-book that covers that whole subject as thoroughly and exhaustively as the A B C book does that of bees. There are some very valuable books on poultry that were published several years ago; but to have such a book up to date it would have to be kept standing in type just as our bee-book is, so that a new edition could be issued every two or three years. Some of the best articles and best advice I have found are in the large expensive catalogs sent out every year by the manufacturers of incubators. Among others I will mention the Cyphers catalog. The book entitled "An Egg-farm," that we sold for so many years, started out in its first editions with more energy and enthusiasm than any other poultry-book I ever got hold of; but in the last edition, by the O. Judd Co., the writer has introduced such a multitude of cogwheels, wires, and other machinery, the book is so complicated that any real practical poultryman would say it was entirely out of the question. Now, I shall be very glad indeed to have our readers who are conversant with poultry literature tell us what book or books to recommend to such people as our good friend Cogswell.

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

For Sale.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. Baldridge, Homestead Farm, Kendaia, N. Y.

For Sale.—Fancy well-ripened clover extracted honey, packed two 60-lb. cans to case, 9½ cts. per lb. (New cans.) Geo. Shiber, Randolpa, N. Y.

For Sale.—2000 lbs. white-clover honey, mostly comb, heavy, well ripened. What am I offered? J. M. Moore, Holden, Mo.

For Sale.—5 tons of fine-quality comb and extracted. State amount you wish, and we will quote you our lowest cash price. Quirin-the-Queen-breeder, Bellevue, O.

For Sale.—Choice white extracted honey, mostly clover and raspberry mixed, in new 60-lb. cans. Price on application. Sample, 10 cts. James McNeill, Hudson, N. Y.

For Sale.—Fancy clover extracted honey in new cans, two in a case. Send 10 cts. for sample, which may be deducted from first order. Earl Rulison, Rt. 1, Amsterdam, N. Y.

For Sale.—No. 1 clover comb honey, 4x5 plain sections, in best no-drip cases, 14 cts. f. o. b. cars here. If you want "gilt-edge" Michigan clover honey, write me for price on large quantity. L. E. Evans, Onsted, Mich.

For Sale.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure. W. L. Coggshall, Groton, N. Y.

For Sale.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts. J. P. Moore, Queen-breeder, Morgan Ky.

For Sale.—Clover and raspberry honey; also basswood honey; well ripened, rich body and delicious flavor; extracted from capped combs. Two 60-lb. cans (120 lbs. net), $10.75. Ask for sample if a choice article will please. F. B. Cavanagh, Boscobel, Wis.

For Sale.—New crop of fancy white-clover extracted honey, thoroughly ripened on the hives before extracting. None of better quality on the market. Put up in barrels, new 60-lb. tin cans, and smaller packages if desired. For prices, etc., address Emil J. Baxter, Nauvoo, Hancock Co., Ill.

For Sale.—Our own production of comb honey, 4 x 5 plain sections, No. 1 quality, at 16 cts. per section. Our comb honey won every important premium in the State last year. If you have a place for some "gilt-edge" comb, write. E. D. Townsend, Remus, Mich.

For Sale.—3000 lbs. extracted white and Alsike clover honey in 60-lb. cans, two to the case, cured and ripened in the hive for weeks; thick heavy body; just as good as a specialist can produce. Price 9 cts. per lb. on car at Pittstown. Sample 10 cts., which will be deducted from first order. Albert G. Hann, Rt. 1, Pittstown, N. J.

For Sale.—150 cases of No. 1 comb honey, 15 sections in 3-inch glass, no-drip cases, 6 cases in a crate, very fine, at $2.40 per case, f. o. b. cars here. Also 8000 lbs. clover and basswood extracted, in new 60-lb. cans, 2 in case, very heavy body and fine flavor, at 9c, f. o. b. cars here. Sample free. W. H. Townsend, Hubbardston, Mich.

For Sale.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 9½ c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order. Leonard S. Griggs, 711 Avon St., Flint, Mich.

It is just as I expected! The bees are now, this 21st day of July, gathering basswood honey, and piling it on top of the raspberry. It will be raspberry and basswood honey mixed this year. Then about the time this August 1st Gleanings reaches you we will be extracting. Rich, ripe, and ropy will be the kind of honey I will have for sale this year. Some of it has been on the hive 60 days. Doesn't it make your mouth water to think of it? It will be put into bright new shiny 60-lb. cans that you can see your face in. I am asking 10 cts. a pound for this delicious honey—just a little more than it takes to buy the ordinary kind. Ask for a sample, and be convinced. E. D. Townsend, Remus, Mich.

## Honey and Wax Wanted

Wanted.—25 tons of fancy comb honey. Write, stating particulars, to C. M. Church, New Kensington, Pa.

Wanted.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. Burnett, 199 South Water Street, Chicago, Ill.

Wanted.—Comb and extracted honey, any quantity. Alfalfa clover preferred. The Frisbee Honey Co., Box 1014, Denver, Colo.

Mail small sample, giving quantity you have, how put up, and lowest cash price you will take for it. E. R. Pahl & Co., Milwaukee, Wis.

Wanted.—We are in the market for No. 1 white extracted honey in any quantity. Correspondence solicited. State kind, quantity, and price asked. We also have for sale 60-lb. honey-cans, 2 cans in case. Both cans and cases in A1 condition, at 30 cts. per case. Michigan White Clover Honey Co., 31-33 Griswold St., Detroit, Mich.

## Bees and Queens

Golden Italian queens by return mail, 50c. J. F. Michael, Winchester, Ind.

For Sale.—125 colonies of Italian bees, with honey, cheap. F. M. Jones, 21 Price Ave., Lockport, N. Y.

For Sale.—800 colonies of bees; for particulars, address Dr. Geo. D. Mitchell & Co., Ogden, Utah.

Golden Italian queens by return mail, untested, 50 cts.; tested, $1.00. D. T. Gaster, Rt. 2, Randleman, N. C.

For Sale.—36 strong colonies Italian bees at $3.00 each the lot for $100.00. This offer not good after Sept. 1. F. A. Gray, Redwood Falls, Minn.

For Sale.—Northern-bred red-clover queens. Untested, 75 cts.; tested, $1.00. E. S. Watson, R. F. D. No. 2. Madison, Maine.

For Sale.—A choice lot of Italian queens, very yellow, reared from the Henry Alley Adel stock. Queens, $1.00 each. A. D. Tuttle, 114 Portland St., Haverhill, Mass.

For Sale.—Improved Italian and Golden Mortgage-lifter queens. Tested and untested, $1.00 to $3.00. Best the Bee-man, Slatington, Pa.

For Sale.—Italian, Carniolan, and Caucasian queens. Untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Stamps not accepted. Edward Reddout, Baldwinsville, N. Y.

For Sale.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry. N. V. Long, Biscoe, N. C.

For Sale.—Selected young Italian queens, bred for superiority in honey production. Single queen, 75 cts.; 6 for $4.00; one dozen, $7.50. Also golden-all-over, Cyprians, Carniolans, and Caucasians. Julius Happel, 414 Fourth St., Evansville, Ind.

## Real Estate for Bee-keepers

FOR SALE.—Fruit and vegetable farm; poultry and bees; healthy location; price $3500. R. ADDISON, Loughman, Fla.

FOR SALE.—A good paying bee business in Minnesota; with or without real estate; 400 colonies Italian bees, with all necessary up-to-date appliances.
A B C, care A. I. ROOT CO., Medina, Ohio.

FOR SALE OR RENT.—Bee-hive factory; waterpower, 85-horse capacity; trackage, yardage, 93,000 feet floor-space. Native basswood for sections can be bought for $3.00 to $5.00 per cord. Thick soft white pine for hives available at less than Eastern price. If interested, come.
W. H. PUTNAM, River Falls, Wis.

## For Sale

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—My apiary, 90 colonies, and all supplies; also my prize-winning strain of Rose Comb White Leghorns.
L. A. STAFFORD, Homer, N. Y.

FOR SALE.—A fine small apiary at a big bargain. If interested, send stamp for full particulars.
C. L. GIBSON, 159 W. Lor. St., Oberlin, O.

FOR SALE.—One and two year old goldenseal roots, one-year-old ginseng roots; 1907 crop of ginseng seed.
S. PITTS, Stronghurst, Ill.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—200 cases of 5-gallon cans. All are free from rust inside, and the majority have been used but once. Two cans in a case; 10 cases or more, 25 cts. per case.
J. E. CRANE & SON, Middlebury, Vermont.

FOR SALE.—Best Wisconsin sections, 1000, $4.00; 2000, $7.75; 3000, $11.00; 5000, $17.50; No. 2, 50 cts. less; plain, 25 cts. less, 24-lb. 2-in. glass shipping-case, 14 cts. Catalog free.
H. S. DUBY, St. Anne, Ill.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa

## Help Wanted

WANTED.—A good bright young man to sell honey—"a nice winter's job;" would prefer single man, 25 to 30 years, who can tell all about bees and honey.
THE SNYDER BEE & HONEY CO., Kingston, N. Y.

## Wants and Exchanges

WANTED.—Refuse from wax-extractors and old comb for cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—100 to 200 colonies of bees on shares.
GROVER ABBEY, Rt. 63, Troy, Pa.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

Golden Italian queens, 75 cts. each. Satisfaction guaranteed.
WALTER S. HOSS, 1127 Blaine Ave., Indianapolis, Ind.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Order your bee-supplies from Superior Honey Co., Ogden, Utah, at Root's catalog prices. You save time and money. Largest dealers in the West.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND,
Birmingham, Erie Co., Ohio.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

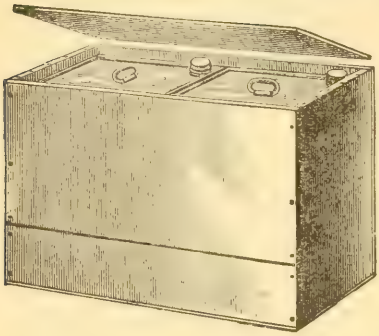
Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

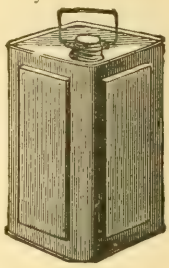
Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# TIN HONEY-PACKAGES



## FIVE GALLON (60-lb.) SQUARE CANS.

A five-gallon can is the favorite package for shipping extracted honey. There is no shrinkage and consequent leaking, no taint to the honey from wood as is so frequently the case with barrels and kegs. The cans, being made square, economize space, and are easily boxed. They are used exclusively in the far West.



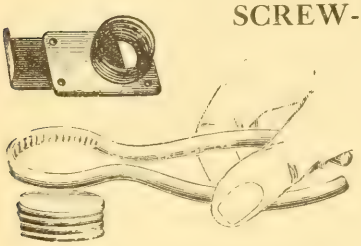
## SMALL SCREW-CAP CANS.

Besides the five-gallon square cans we list also the three smaller sizes—1, ½, and ¼ gallon. These are furnished with 1¾-inch lined screw cap like the five-gallon cans. We can also supply the five-gallon cans with 4-inch screw as well as the 1¾, at 5c each extra; and with an 8-inch screw at 15c each extra. Latter is largely used in Texas for chunk honey. Price of cans packed in boxes or crates given in the list below.

PRICE LIST OF SQUARE CANS.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Box of | 1 | 5-gal. | can | (60 lbs. | capacity) | $ .55; | 10 boxes, | $ 5.00. | Weight per | box | 10 lbs. |
| " " | 2 | 5-gal. | " | (60 lbs. | " ) | .85; | " " | 8.00. | " " | " | 15 " |
| " " | 10 | 1-gal. | " | (12 lbs. | " ) | 1.50; | " " | 14.00. | " " | " | 20 " |
| " " | 12 | ½-gal. | " | ( 6 lbs. | " ) | 1.50; | " " | 14.00. | " " | " | 20 " |
| " " | 24 | ¼-gal. | " | ( 3 lbs. | " ) | 2.40; | " " | 23.00. | " " | " | 25 " |
| " " | 100 | 1-gal. | " | (12 lbs. | " ) | 11.00; | " " | 105.00. | " " | " | 110 " |
| " " | 100 | ½-gal. | " | ( 6 lbs. | " ) | 9.00; | " " | 85.00. | " " | " | 80 " |
| " " | 100 | ¼-gal. | " | ( 3 lbs. | " ) | 7.00; | " " | 65.00 | " " | " | 60 " |

## SCREW-CAP HONEY-GATE AND CAN-SCREW WRENCH.



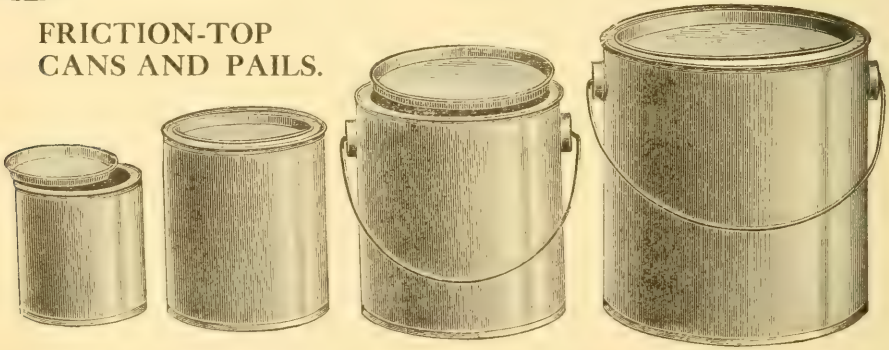
Screw-cap gate, 15c; by mail, 18c Screw-cap wrench, 10c each; 75c per doz; by mail, 4c each extra.

We furnish the gate for 1½, 1⅝, or 1¾ screw. Other sizes made to order from caps you may furnish.

The wrench fits a 1¾ screw, and can be used on 1⅝ or smaller by a bushing between cap and wrench.

*When you order these gates separate from cans we can not guarantee a fit unless you send us a cap from the screw with the order.*

## FRICTION-TOP CANS AND PAILS.



For packing honey in small tin packages we know of nothing better than package here shown. We do not carry these in stock, and offer them only for direct shipment from factory in original packages as indicated.

1-lb. can, $2\frac{11}{16}$x4, from Maywood, near Chicago, in crates of 1155 at $25.00 per crate.
2-lb. " $3\frac{1}{2}$x$4\frac{3}{4}$, " Hamilton, Ohio, or Davenport, Iowa, in crates of 588, $15.00 per crate.
2½-lb. " 4x$4\frac{11}{16}$, " " " " " " " " " 462, 14.00 " "
3-lb. " $4\frac{5}{16}$x$4\frac{3}{4}$, " " " " " " " " " 420, 14.50 " "
5-lb. pail, $5\frac{1}{2}$x$5\frac{1}{2}$, " " " " " " " " " 220, 12.75 " "
10-lb. " $5\frac{5}{16}$x$7\frac{1}{2}$, " " " " " " " " " 116, 9.50 " "

Send all orders to Medina for unbroken crates as indicated, to be shipped direct from the point indicated only. The 1-lb. to 3-lb. have no bail, while the 5 and 10 lb. have a wire bail.

# CARTONS for COMB HONEY

We are now prepared to furnish these cartons in several styles and in two grades of stock; also in various styles of printing. We can also execute special designs in quantities on special orders. Let us know your wants.

The Danz. open-end carton will enclose a section and pack in the regular shipping-case. We furnish it for 4x5x1⅜ and 1½, 3⅝x5x1½, and the several widths of the 4¼ section. To hold the carton in place on the section you need a rubber band around it. These bands are not furnished with the cartons except at an extra price, and only when so ordered.

The folding carton is of a different pattern from those heretofore furnished. They tuck in at the top and bottom in a neater form, and are without tape handle. Sections packed in these cartons require shipping-cases made a little larger than the regular sizes, but such cases do not require glass. Some of our agencies have on hand some of the old style cartons in some sizes, which may be supplied on orders unless otherwise specified. These cartons are furnished for all regular sizes of sections; namely, 4¼x4¼x1⅞ and 1½; also 4x5x1⅜. Other sizes furnished in quantities on special order.

PRICE LIST OF CARTONS.

Danz. carton, regular size, plain or printed name blank, 50 cts. per 100; 500, $2.25; 1000, $4.00. Weight, 4 lbs. per 100.

Folding cartons, regular sizes and grade, plain, 60 cts. per 100; 500, $2.75; 1000, $5.00.

Folding cartons, regular sizes and extra quality, plain, 75 cts. per 100; 500, $3.25; 1000, $6.00.

Extra for printing stock design, name and address blank, 50 cts. per 1000 one side; 75 cts. both sides for each color.

For inserting name and address in design at same printing, add 50 cts. for any quantity. For printing in name and address in a stock design, after that has been printed, add 50 cts. for 100; 75 cts. for 500; $1.00 for 1000. Such cartons can be supplied only from Medina. Special designs or printing quoted on application.

# AIKIN BAGS FOR CANDIED HONEY.

These are of tough paper coated with paraffine. Honey should be poured into them just as it begins to thicken by granulation.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-pound bags, | 3½x5½, | per 100, | $ .65; | 500, | $3.00; | 1000, | $5.50. | Weight | per | 1000, | 10 pounds |
| 2 " | " 5 x7½, | " | " .80; | " | 3.75; | " | 7.00. | " | " | " | 18 " |
| 3½ " | " 6 x9½, | " | " 1.00; | " | 4.75; | " | 8.75. | " | " | " | 28 " |
| 5 " | " 7 x 10, | " | " 1.20; | " | 5.50; | " | 10.50. | " | " | " | 35 " |
| 10 " | " 10x10½, | " | " 1.50; | " | 7.00; | " | 13.50. | " | " | " | 45 " |
| Printing name and address extra, | | " | .30; | " | .75; | " | 1.00. | | | | |

May be sent by mail for 18 cts. per pound for postage and packing.

# Candied-brick Honey-wrappers.

We have developed a good trade in choice candied honey cut into 1¼-pound bricks, like a piece of butter. These bricks are wrapped in parchment paper, placed in a folding carton, and a fancy white wrapper printed in gold with end-labels put on the outside. We can supply the parchment wrappers, cartons, and labels complete ready for use at $7.50 per 1000 sets. With your name and address on the wrapper add $1.00 per 1000.

**The A. I. ROOT COMPANY, MEDINA, OHIO**
**CHICAGO NEW YORK PHILADELPHIA**

THE
CELL
THAT SELLS AND EXCELS
IS FOUND IN
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FOUNDATION
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BEE
SUPPLIES
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SUPPLIES
FOR
BEE-KEEPERS

Every thing you want; all made by us
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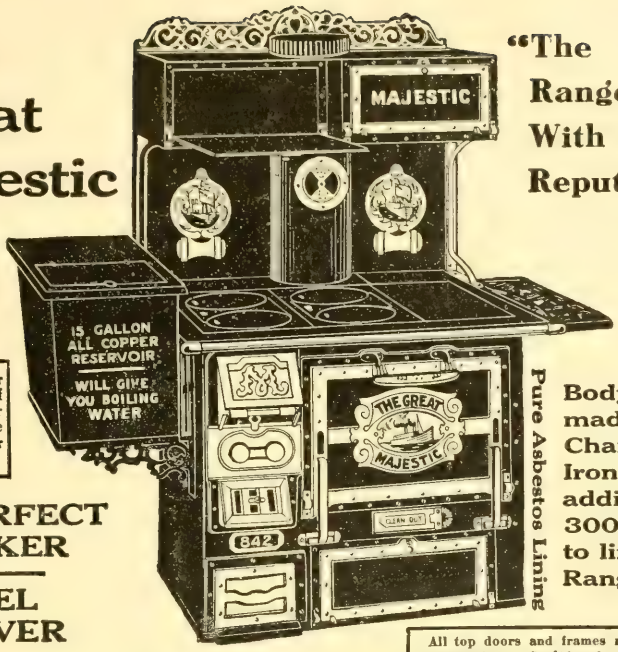
**The American Bee-keeper** (published 17 years), a monthly at 50 cts. a year. Sample copy and illustrated catalog and price list free. Address

W. T. FALCONER MFG. CO.
DEPARTMENT G, :: :: :: :: :: :: :: :: JAMESTOWN, N. Y.

# The Great Majestic

"The Range With A Reputation"




With water fronts if wanted for pressure or other boilers.

**PERFECT BAKER**

**FUEL SAVER**

Pure Asbestos Lining

Body made of Charcoal Iron, adding 300% to life of Range

All top doors and frames made of malleable iron. Can't break or crack.

***You*** don't buy a range every year. Therefore when you ***buy*** one, ***buy*** the ***best.*** At first the Great Majestic may cost you a very little more than an ordinary range, but in the end it is ***much cheaper.*** It has ***durability*** and will out-last three ordinary ranges. It is scientifically built—***no heat can escape or cold air enter***—will ***save half*** on your ***fuel bill.*** A perfect baker—***not one day good—next day poor—but always uniform.*** Will save you from disappointment and poorly cooked meals. Your Best Guarantee: 1st—The reputation of the plant behind the range. 2d—Hundreds of thousands in use every one giving satisfaction. We want you to see ***The Great Majes'ic.*** If no dealer near you has it, write us—we will send you free our booklet "Range Compar'sons," and tell you where you can see a Majestic—the range that gives satisfaction and out-lasts all others.

**THE MAJESTIC MFG. CO., St. Louis, Mo.**

***The Great Majestic Is For Sale In Nearly Every County In Forty States***

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## THE "BEST" LIGHT

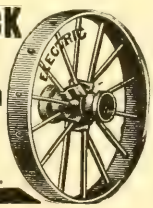
One burner will give as much light as ten ordinary oil lamps; six 16 candle power electric bulbs—six 16 candle power gas jets or 5 acetylene gas jets. Costs 2 cts. per week. Produces a pure, white, steady, safe light. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog.

**THE BEST LIGHT CO.**
**306 E. 5th St., Canton, O.**

## SAVE YOUR BACK

Save time, horses, work and money by using an

**Electric Handy Wagon**

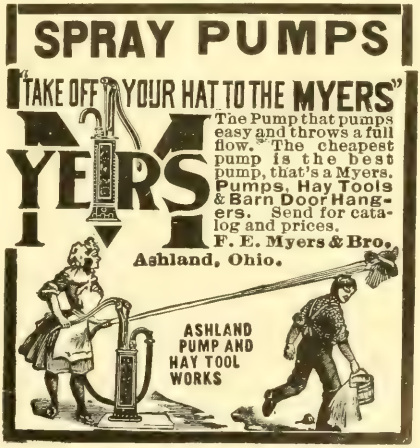



Low wheels, broad tires. No living man can build a better. Book on "Wheel Sense" free.

**Electric Wheel Co. Bx 95, Quincy, Ill.**

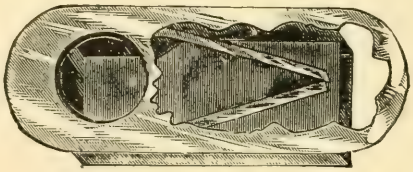
## SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"




The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

**F. E. Myers & Bro.**
**Ashland, Ohio.**



# PORTER BEE-ESCAPES

## HIVE ESCAPE

When taking off surplus this is the greatest saving device. It does away with the shaking of the heavy supers, the cruelty of excessive smoking which causes the bees to uncap their honey and start robbing. Just tip the super to the angle of 45 degrees and insert the board. In a few hours it is free of bees; then take off your super. You can as well afford to be without a smoker as without the Porter Bee-escape.

### PRICES

Each, 20 cts.; dozen, $2.25; postpaid. With board, 35 cts. each; $3.25 per 10; by express or freight.

### TESTIMONIALS

They are perfect in action.—British Bee Journal.

No bee-keeper can afford to be without them.—Prof. Cook in American Bee Journal.

Worthy of highest commendation.—Eugene Secor, judge on awards, World's Fair, Chicago.

I would not do without them even if they cost five five dollars apiece.—W. Muth-Rasmussen, Independence, Cal.

They are absolutely perfect. I can not tolerate my own make since using them.—John S. Reese, Winchester, Ky.

They are one of the best things ever brought into any apiary, and should be used in every bee-yard in the whole world.—Wm. McEvoy, Foul-brood Inspector, Ontario, Canada.

There is no robbing or fighting or disturbance in the apiary when the surplus honey is taken off with them. They are simply perfect.—W. Woodley in British Bee Journal.

## HOUSE ESCAPE

To be used over the doors and windows in the extracting-house, or any place you wish to clear of bees. The most persistent robber can not return. Some bee-keepers make a practice of taking off the filled supers and stacking seven or eight in a pile. The Porter Honey-house mounted on a board makes the best kind of escape. Don't wait till to-morrow before you get a supply. You can not afford to be without them longer.

### PRICES

Each, 25c; dozen, $2.75; postpaid.

### TESTIMONIALS

The Porter bee-escape clears the supers of bees so perfectly and quickly and easily that it makes the taking off of honey a pleasure instead of a dread as in former years.—G. M. Doolittle, Borodino, N. Y.

The removal of full honey-boxes has become an amusement since we began using the Porter bee-escape.—Ed. Bertrand, Editor Revue Internationale d'Apiculture, Nyon, Switzerland.

This number of the Review contains more unqualified praise of the Porter bee-escape than any other issue has ever contained of any other implement; but so long as it is deserved, who cares?—Bee-keepers' Review.

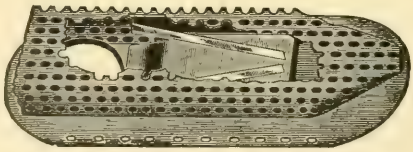
They are the greatest thing on earth for expelling bees from supers.—G. J. Flansburg, South Bethlehem, N. Y.

I would not be without them for four times what they cost.—Dr. W. A. Tufts, Musson, La.

Undoubtedly the best bee-escape is the one invented by R. & E. C. Porter.—W. S. Pouder, Indianapolis, Ind.

Bee-men are certainly behind the times if they can afford to use them and do not.—M. H. Mendleson, Ventura, Cal.

## For Sale by Dealers Everywhere!



R. & E. C. Porter, Patentees

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College.

# Gleanings in Bee Culture

AN APIARY IN THE NETHERLANDS.

*Published by The A. I. Root Company, Medina, Ohio, U. S. A.*

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI September 1, 1908 No. 17

# Don't Buy a Stove or Range Until You First See

# How Much You Save By Getting

## "A Kalamazoo Direct to You"

TRADE MARK REGISTERED

YOU want to make every cent you spend this year, **count** for **quality** and **economy.**

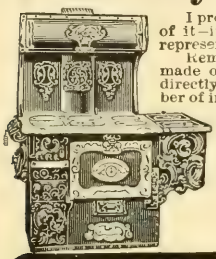
If you need a stove or range, don't buy until you get our **factory** prices.

I promise you that I will save you $5, $6 or $10 on our smallest stoves, and as high as $18, $20 and even $30 on our largest. And I promise you that you cannot get **anywhere** at **any** price, a better stove or range than the Kalamazoo.

Just let me quote you prices. Take our catalogue and **compare** the Kalamazoo **quality** and **prices,** with the best line of stoves and ranges you can find sold at retail. **That** will tell the story. You can see for yourself. You want to save money and you want to get high quality. Why not investigate our plan, then? Why not let me show you the difference between manufacturers' prices and retail prices on stoves or ranges?

We sell to you, direct from the factory, at actual factory prices,

## On 360 Days Approval Test—We Pay the Freight



I promise, in black and white, to refund your money—every cent of it—if you do not find your purchase in every way exactly as represented.

Remember, every Kalamazoo is of the highest possible grade, made of the best materials and in the best manner. You deal directly with the manufacturers—a company that has a larger number of individual customers than any other stove company in existence. We have sold thousands of stoves and ranges to readers of this journal, and no doubt can refer you to near neighbors who have saved money by buying a Kalamazoo. Many customers write that they have saved enough on a single Kalamazoo to pay for a whole season's fuel. You can save enough to buy a new suit, a new dress, an article of furniture, or perhaps to pay your taxes. Is it not to **your** interest to get our prices?

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**All Kalamazoo** cook stoves and ranges have patent thermometers which make baking and roasting easy.

describing more than 300 sizes and styles of Coal and Wood Ranges, Coal and Wood Heaters, Hotel Ranges, Base Burners, Laundry Stoves, Etc.

**I know** that if you get our prices—and see our quality you will not even **think** of buying any other make. Let me show you how much you can save.

**William Thompson, Vice-Pres. & Gen. Mgr.**
**KALAMAZOO STOVE CO., Mfrs. Kalamazoo, Mich.**

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Call at our warehouse and yards at Chicago and see the lumber we are offering and you will recognize that it is all we say of it. Make your own selection and see it loaded. It is not necessary to come to Chicago, however, unless you wish to. **We can fill your order by mail** with just what you want and guarantee you absolute satisfaction. Ours is the largest direct to the consumer lumber headquarters in the world. We sell millions of feet annually. Orders filled from every part of the United States. No matter where you live you can save money by supplying your building wants here.

We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can save you money on it. Our tremendous business of millions of dollars annually is your best guarantee of complete satisfaction of every purchase made from us. In our enormous stock of new lumber of every kind we have just what you need for every purpose. Don't buy a stick of material until you get our prices. We offer you everything in the lumber and building supply line needed for residences, farm homes, stores, churches, barns, outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 60 per cent less than your local dealers or lumber yards ask for it.

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Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which means sacrificed prices and enables us to sell even as low as cost without loss. You take no chances in dealing with the Chicago House Wrecking Company. Whether for $1 or $10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

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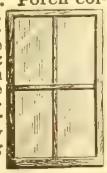

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**Chicago House Wrecking Co., Chicago**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 lbs. net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 lbs. net per case of 24 sections.

SAN FRANCISCO.—Honey is still being shipped to the markets, but several of the producing districts are now about cleaned out. There is a fair demand in the East, and a liberal movement in that direction, but the local market is rather quiet. The growers are getting from 5 to 6 cts. for average lots of extracted. Sales in this market are made at the following figures: Water-white comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5¾.—*Pacific Rural Press*, Aug. 25.

INDIANAPOLIS.—The demand for the best grades of honey is good. Producers are offering fancy white comb honey at 12½; No. 1 white at 12; white-clover extracted, in five-gallon cans, at 7; very little demand for amber at any price. Many bee-keepers seem to be holding their honey for higher prices. Beeswax is steady at 28 cts. cash, or 30 in exchange for merchandise.

Aug. 18. WALTER S. POUDER, Indianapolis.

NEW YORK.—The new crop of York State comb honey is now beginning to arrive in small quantities, and the quality appears to be very fine, especially choice white stock. While our market has not opened up as yet, and will not before about the first week in September, prices are unsettled and uncertain. We are having some demand for fancy and No. 1 white at prices ranging from 13 to 15, according to quality and style of package. No new buckwheat is on the market as yet, but we are informed that the crop will probably be quite large. A great many bee-keepers seem to think that comb honey ought to sell at the same price as last year and before, not taking into consideration the fact that comb is a luxury and not a necessity, nor do they seem to take into consideration the general depression in business. We do not expect as good a demand as last year, nor do we think that last year's prices can be realized.

Arrivals of extracted honey have been quite free from the West Indies and the South, and the demand is fair. Prices obtained we consider full market value. We quote average grades from 58 to 65 cts. per gallon; fancy grades, 70 to 75. No new crops from near by are on the market yet, nor California. We have several cars now in transit, due here the first of September. We quote California sage at 9; orange, 8 to 8½; light amber, 7½ to 8.

Arrivals of beeswax are quite heavy, and the market shows a downward tendency. Prices are likely to go still lower. We quote 28 to 30. HILDRETH & SEGELKIN,

Aug. 22. New York.

SCHENECTADY.—No new comb honey on our market yet, and but little demand, as many dealers carried over some stock which they are anxious to work off before buying the new crop. However, it is well to have some on hand for first customers.

CHAS. MACCULLOCH,

Aug. 25. Schenectady, N. Y.

CINCINNATI.—Extracted honey, for which there is a fair demand but not a high price, is selling, amber, in barrels, at 5 to 5½; white clover brings 7½ in barrels, 8 in cans; comb honey, for which there is practically no demand, is selling at 14. Beeswax is selling slowly at 33. These are our selling prices.

Aug. 24. C. H. W. WEBER, Cincinnati, O.

KANSAS CITY.—The demand for comb honey is increasing, and the demand exceeds the supply. No. 1 honey is selling at $3.25; light amber, $3.00; dark amber, $2.75; extracted, 7½ to 8. C. C. CLEMONS & CO.,

Aug. 21. Kansas City, Mo.

BOSTON.—We quote: Fancy white-clover comb honey, 16 to 17; No. 1 white comb, 15 to 16; extracted white honey, 9 to 10; extracted light amber, 7 to 8; same in barrels, 6 to 6½. Beeswax, 30. BLAKE-LEE CO.,

Aug. 20. Boston, Mass.

DENVER.—The crop in Northern Colorado is almost a failure. There will be but little more than what the home market requires in this section. We quote No. 1 white comb honey, in 24-section cases, at $3.15 per case; No. 1 light amber, $3.00 per case; No. 2, $2.85 per case; strained and amber extracted, 6¾ to 7¾; light amber, 7½ to 8¼; white extracted, 8½. We pay 24 cts. for clean yellow beeswax delivered here.

THE COLORADO HONEY-PRODUCERS' ASS'N,

Denver, Aug. 25. F. Rauchfuss, Manager.

BUFFALO.—New honey is arriving now quite freely. Quality is very good. Buyers seem slow to buy. They are holding off for lower prices. In order to get it to moving, prices must go lower. No. 1 to fancy white-clover comb, 14 to 15; No. 2 ditto, 10 to 12; No. 3 ditto, 9 to 10; white-clover extracted, 7 to 8; ditto amber, 6 to 6½. No dark honey is arriving. Beeswax, 28 to 30.

Aug. 11. W. C. TOWNSEND.

LIVERPOOL.—The honey market here is steady with a fair demand and a good export inquiry. A better demand is expected next month and October. Stocks in the market are small, chiefly old crop. Values to-day are as follows: Chilian, 4½ to 6½; Peruvian, 3½ to 5½; California, 8½ to 10¾; Jamaican, 4 to 5½; Haytian, 5½ to 6½. No change in beeswax.

Aug. 19. TAYLOR & CO., 7 Tithebarn St.

**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.* **Minneapolis, Minn.**

# Our Wants are Unlimited.

Mail us a sample of your

# EXTRACTED HONEY

either amber or fancy; and name your lowest cash price per pound delivered here. We buy every time the price justifies, no matter if it is one barrel or a car load, and remit the same day shipment comes to hand.

**The Fred W. Muth Co.**
THE BUSY BEE-MEN
**51 Walnut St. Cincinnati, O.**

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

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Purchasing Department,
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**CHICAGO, ILL.**

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

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Our market now ready for

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Write us. Will sell for you at highest market price, or hold for your price and make liberal cash advance. Commission five per cent. .:. .:. .:. .:.

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# Reasons for the Price
## OF MY
# Raspberry Honey.

I ask ten cents a pound for my raspberry honey. This is slightly above the market price, but there are reasons.

In the first place, very little raspberry honey is produced. It is a novelty—something out of the ordinary—like orange-blossom honey for instance.

In addition, it is of very superior quality; so much so that it was awarded the gold medal, in competition with other honeys, at the Jamestown Exposition. It has a flavor all its own—a flavor that smacks of the wild red raspberry of the woods.

Another most important reason why I should get a good price for my honey is the manner in which it is produced. It is left on the hives for weeks after it is sealed over, and thus acquires that finish, that smooth, oily richness, that thick, rich deliciousness that can be obtained in no other way.

It costs more to produce such honey, there is not so much of it, and it is worth more than the ordinary honey; just as big Northern Spy apples, streaked with crimson and filled with juicy spiciness, are worth more than ordinary fruit.

As a finishing touch the honey is put up in bright new 60-lb. tin cans, securely boxed, and the boxes bound with iron so that they will bear shipment; in fact, I will guarantee safe arrival in perfect condition.

For a single 60-lb. can the price is $6.25; for two cans in a case (120 pounds) the price is $12.00 a case, regardless of the number of cases that are taken.

If you are not acquainted with this honey, send me ten cents and I'll mail you a generous sample, and the ten cents may apply on the first order that you send.

**W. Z. HUTCHINSON, Flint, Mich.**

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### A GREAT OFFER.

It is not often that readers of periodical literature are given so liberal an offer as we have presented on page 1038 of this issue. If you desire to get something nice to read during the long winter evenings we suggest that you give this fine offer your earnest consideration.

### A FAVORITE RANGE.

In nothing do American housekeepers show greater discrimination than in their choice of a kitchen range. Every woman has pronounced ideas on the subject, and men-folks are not allowed to say a word one way or the other. It is purely a woman's prerogative to select the cooking-range, and she is generally equal to the emergency. She has an ideal in her mind to which a range for home use must be equal, and perhaps a little more for good luck. It must be dependable, economical of fuel, a good cooker, a good baker, and, above all, it must be durable. It is on this latter point that so many ranges fail; and as it takes years to find this out, housekeepers are obliged to select a range with a reputation. Many ranges do very well for a year or two, when they give out entirely, and the owner has to buy a new one, for to repair the old one would be a waste of money.

Young housekeepers have to be particularly careful on this point, as some kinds of iron will last three or four times as long as another kind, though both look alike to the inexperienced.

For these reasons our lady friends, when about to purchase a range, generally visit their acquaintances to discuss the merits and demerits of their cooking apparatus, endeavoring to discover which range is best.

One of the best ranges on the market, if not *the* best, is the Majestic, advertised on another page of this journal. It has been before the public for a number of years, so that its reputation is fully established. The body is made of charcoal iron, which insures durability; in fact, the makers say it will outlast three ordinary cooking-stoves. It is a fine baker at all times. It saves fuel, because it is so constructed as to conserve all its heat. It has a fifteen-gallon reservoir which supplies *boiling* hot water.

It has had an immense sale, and there are actually hundreds of thousands of Majestics in use throughout the country. In nearly every county of forty States the Majestic ranges are on sale, and this alone indicates its great popularity with all classes and conditions of American women. Further information can be obtained from the makers, The Majestic Manufacturing Co., St. Louis, Mo.


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MEDINA, OHIO

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**Established 1889**

# A Little Dose of Reason.

*By the Bee Crank.*

Lord Avebury is a famous British scientist and bee enthusiast. In addressing a recent gathering of French and English bee-men in London, the daily papers report that he said that his observations had led him to believe that the movements of the bee are not automatic, but they had what Darwin called "a little dose of reason." He called attention to the fact that they have five eyes, two of which are constructed on a different plane from the other three, and he believes that they may have certain senses unknown to man, including the power of seeing rays of light invisible to us.

All this places a bee on a pedestal beside man, who has a larger dose of reason, and who—if he is a real bee-man—proves it by ordering his supplies where he is always sure of getting bright, fresh, clean stock, and where he gets it before be has begun to expect it, just as Mr. Reynolds did. Under date of July 21, Mr. Clarence Reynolds, of Center, Indiana, writes:

> My order was received in good condition. I want to thank you for your promptness, for the goods arrived two days after I sent the order—sooner than I thought it possible for the goods to come.

I carry a full line of Root's goods, and sell at factory prices.

During this month I am offering a discount of seven per cent for cash orders for goods for next season's use. In October the discount will be six per cent. I believe any bee-keeper can benefit himself by taking advantage of this liberal offer.

I buy beeswax and pay highest market prices, cash or trade. When I say cash I mean that I remit the day your wax arrives.

Catalog free.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

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CONNECTICUT STATE FAIR.

The Connecticut Bee-keepers' Association will give an exhibit of bees and bee products, in connection with the State fair at Berlin, Sept. 15—18. An entrance fee of $1.00 will entitle the exhibitor to compete for all premiums in this list.

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|---|---|---|---|
| Italian bees with queen . . . | $5.00 | $3.00 | $2.00 |
| Carniolan bees with queen . . . | 5.00 | 3.00 | 2.00 |
| Black bees with queen . . . | 5.00 | 3.00 | 2.00 |

The largest and best exhibit to govern the above.

The above exhibit to be in single-comb observatory hives.

All queens must be shown with their own progeny.

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| Largest and best display of bees of various races, in observatory hives . . | $5.00 | $3.00 | $2.00 |
| Best 12 sections of light comb honey . | 3.00 | 2.00 | 1.00 |
| Best 12 sections of amber comb honey | 3.00 | 2.00 | 1.00 |
| Best and largest display of comb honey . | 5.00 | 3.00 | 2.00 |
| Best 12 jars of light extracted honey . | 3.00 | 2.00 | 1.00 |
| Best 12 jars of amber extracted honey . | 3.00 | 2.00 | 1.00 |
| Largest and best display of extr'd honey | 3.00 | 2.00 | 1.00 |
| Largest and most attractive display of bees, queens, honey, and bee-appliances . | 8.00 | 5.00 | 3.00 |
| Demonstration of live bees . . | 15.00 | 10.00 | 5.00 |

All meritorious exhibits pertaining to bees, not herein provided for, will receive special premiums. Entries close Sept. 8. Address

GEORGE H. YALE,
90 Simpson Ave, Wallingford, Ct.

A HANDY TOOL.

If you are interested in potato culture, as a good many of GLEANINGS' readers are, you will doubtless be interested in the advertisement of The Potato Implement Co., of Traverse City, Mich. We believe their digger is a very useful invention in connection with what is usually a very laborious job—digging potatoes by hand. The makers claim for it that it does not scar or crush the potatoes, and yet it finds every tuber in the row. The machine diggers are likely to fail in both particulars, so that there is economy in using the Acme hand digger. We believe the manufacturers are sincere in making the offer to refund promptly the money to all dissatisfied customers. They are certainly reliable or their advertisement would not appear here. Weighing the pros and cons of the question, we certainly think that any one of our readers will be perfectly safe in ordering one of these tools if he has any potatoes to dig.

MONEY IN SMALL FRUITS.

We are pleased to have again in our columns the usual fall announcement of W. N. Scarff, of New Carlisle, Ohio. He is one of the old reliable kind, and we are glad to see him successful. Mr. Scarff is himself a practical bee-keeper, and a farmer on a large scale, using 800 acres of valuable Ohio soil. He appeals very strongly to the small cultivator who desires to secure a large return from a small piece of land. To do this he recommends the culture of berries, which yield heavily and give large returns in money, but require much attention which the average farmer can not give. Probably nothing else can be suggested which will dovetail so well with bee-keeping, and we know that many are pursuing this plan. In most sections of this country the demand for berries is never fully satisfied, and hence we feel that Mr. Scarff is pursuing a safe course when he advises bee-keepers to engage in the culture of berries. From long experience he knows the varieties which are profitable, and his advice should certainly be valuable to the inexperienced.

STORRS AND HARRISON.

The above celebrated firm is one of the institutions of Ohio. It is known far and wide throughout America as a headquarters for good nursery stock such as trees, plants, bulbs, and seeds, and also the supplies connected therewith. They have been 54 years in business, and actually use 1200 acres of land in their nursery work at Painesville, Ohio. It is needless to say that we are proud of the fact that their usual fall announcement appears on p. 1088. They keep a full line of every thing pertaining to the orchard, vineyard, lawn, park, street, garden, and greenhouse. The senior member of this firm, Mr. A. I. Root, has bought considerable quantities of nursery stock from this firm in times past, and always with perfect satisfaction. Any one who has had much experience with nursery stock knows how important it is to deal with a good reliable firm. There are many of the other kind, hence the importance of the foregoing testimony.

The California Fruit Products Co., of Colton, Cal., will mail three colored souvenir post cards free to any one who will write them, and also to any friends whose names and addresses you may inclose.

# 20 AMERICAN GIRLS FREE

Country Girls, City Girls, Western, Southern, and Eastern Girls; Skating, Riding, and Bathing Girls, and many other views of the beautiful American Girl—**all free**; also a membership to the Post-card Exchange.

This famous set of souvenir post cards is considered the most popular set ever issued. Twenty different views of the beautiful Americnn Girl; all worth framing—the gem of a post-card collection. I want to place a complete set in the hands of **every American woman free.**

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In order to place *Up-to-date Farming* in your home I will send it to you for **three months for 10 cents**, and include, with my compliments, **a complete set of American Girl post cards.** Every woman should read the family and household pages of *Up-to-date Farming*; the boys will be interested in the stories and puzzles, while the men will read its agricultural and marketing features with much profit.

Remember, 20 souvenir post cards (American Girl set) and a three months' subscription to *Up-to-date Farming*, all for 10 cents (stamps or silver).

**Garrett Wall, Up-to-Date Farming, Indianapolis, Ind.**

# WHAT'S THE USE

## OF HAVING FINE HONEY IF IT IS IN POOR PACKAGES?

If you are among the fortunate ones who have secured a good crop of honey, surely you will not be so unbusinesslike as to sell it in second-hand or inferior cases. Your honey will sell far easier in nice new cases or tins. WE HAVE THEM. ∴ ∴ ∴ ∴

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*Syracuse*
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*New York*

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BEE-KEEPERS
*of* CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, "The best is cheapest."

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Deer Park, Toronto, Ontario, Canada
Canadian agents for The A. I. Root Co., Medina, O., U.S.A.

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Save Time
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by sending direct all your orders and correspondence to our exclusive agent for the European continent and its colonies. . .

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The A. I. Root Company

We will have an exhibit of "Root Quality" bee-supplies at the MICHIGAN STATE FAIR at DETROIT, Sept. 3d to 11th; and at the WEST MICHIGAN FAIR at GRAND RAPIDS, Sept. 14th to 18th. We cordially invite Gleanings readers to call on us, and make yourselves known. We are the authorized agents for Gleanings at both fairs.

We want to show you our goods and take your 1909 order there, giving you the advantage of the EARLY-ORDER CASH DISCOUNT. Ask us about it.

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LANSING, :: MICHIGAN

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This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

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**Dubois, .. Pennsylvania**

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# C. H. W. WEBER

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Fancy white clover, EXTRACTED HONEY. State how it is put up, and price expected delivered in Cincinnati.

# C. H. W. WEBER

Office and Salesroom, 2146-2148 Central Ave.
Warehouse, Freeman and Central Avenue.

CINCINNATI, .. .. .. OHIO

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

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VOL. XXXVI SEPTEMBER 1, 1908 NO. 17

## STRAY STRAWS

DR. C. C. MILLER

E. W. ALEXANDER, as one of the rank and file, let me salute you on your triumphant march to receive your crown of rejoicing. "Well done, good and faithful servant!"

EDITOR DIGGES made some experiments which showed that, when working on clover, the bee's load rarely exceeds $\frac{3}{10}$ of a grain of nectar, yielding from $\frac{3}{20}$ to $\frac{9}{40}$ of a grain of ripened honey. That means that the nectar is boiled down to ½ or ¾ of its original weight. The ripened honey averages ¾ grain per drop; but the bee must load up again and again to produce that drop.

THE REPORT of the United States Commissioner of Internal Revenue shows that, during the fiscal year ended June 30 last, there were distilled 119,808,402 gallons of spirits—a decrease, as compared with the previous year, of 14,333,672 gallons. There was paid to the government as revenue on whisky and other spirituous liquors, $147,550,281—a decrease of $15,767,038.

LOUIS SCHOLL reports, *A. B. J.*, 236, that he has this year harvested over 40,000 pounds of comb honey, "almost all by his wee little 6-feet-3 self." Good for Louis! [Considering the fact that the season has not been very good in Texas as a whole, makes the record of our 6-feet-3 all the better. This means that our Texas department will be all the richer for the experience which this big crop brought with it.—ED.]

D. M. MACDONALD, *Irish B. J.*, p. 33, rebels against the idea of having only a bee-space under bottom-bars. He says, "Here, the ¼-inch, or even the ⅜-inch space below frames is giving place to a full ½-inch. Bees respect all the three equally, and it is my belief that they would be as well satisfied with a full inch." Your head is level, my Scotch friend. Some of the spaces under my bottom-bars are ¾ and ⅞, and there is no trouble. Really, the ventilating space is 2 inches, that being the depth of the bottom-board; but an open rack within ⅞ of bottom-bars prevents building down. How much more than ⅞ the space might be I don't know; but if I live I'll find out.

MR. EDITOR, you say, p 927, that in baby nuclei, when the queen has filled all available cells she will stick two, three, or five eggs in a cell sure; but are they not all worker-cells? In the case I mentioned, there were five eggs in a *queen-cell*, and I think no worker-cell had more than one egg. Do you find in baby nuclei *queen-cells* with more than one egg, and no laying workers present? [No: now that we think of it, we have never noticed more than one egg in a queen-cell unless laying workers were present; that is to say, under normal conditions there is never more than one egg in a queen-cell, so far as our observation goes. The queen-cell in the nucleus to which you refer must be, therefore, quite an exception to this general rule.—ED.]

"SWEET CLOVER usually begins to yield nectar shortly after clover and basswood are out of bloom," p. 1010. Sweet clover must be slower with you than here, or else clover and basswood earlier quitters. White sweet clover opened six days before basswood opened here, this year. How long it opened before the close of white clover, I don't know yet—seven weeks at least. Yellow sweet clover was 23 days ahead of white sweet clover, and only seven days after white clover, in opening. [It is evident from what you write elsewhere in these Straws, and from what you have written at other times, that your clover and basswood flows begin and end much later than in our locality. It is not strange, then, that your early flow overlaps that from sweet clover.—ED.]

A SECTION of honey has been in our refrigerator six weeks. It looks just as dry and nice as when first put in. I wish you would try the same thing at Medina. Because a refrigerator is cool like a cellar, does it necessarily follow that a section in a refrigerator will become weepy in the same way it will in a cellar. [Some refrigerators afford a *dry* cold, while the average cellar furnishes a damp or wet cold. Then, too, in all refrigerators the temperature is colder than in any cellar. A dry continuous cold of, say, 40° F., or lower, in a refrigerator, will not make honey candy or become watery, while a variable temperature with more or less of dampness of 50 or 60 or even 70° F. will do much damage to comb honey. After all, a room with a dry hot atmosphere, with enough ventilation to carry off moisture, is a far better place for the storage of comb honey than any refrigerator.—ED.]

MR. EDITOR, you ask, p. 987, what my average yield for this year was. "Was"? Bless your heart, it's not a case of "was" but "will be." For a good bit of honey is yet on the hives, and the bees are still storing, although slowly. We had an immense clover flow, which continued till the clover was scorched by the drouth, no rain to speak of falling from July 17 till Aug. 11. Then a bounteous rain came, and to-day, Aug. 15, we are getting more. If clover revives, and if heartsease comes in sufficient quantity with its water-white honey, the average will be pretty heavy. I'll be glad to give it later. Just now there are piled up in the honey-room 12,100 finished sections, making an average of nearly 94 sections

per colony, so far. The best yielder has given, so far, 216 sections. It will have to go 84 sections better than that if it matches the champion of the year 1903. I'm a little afraid heartsease will not do much this year, for the drouth was not conducive to a good start.

I WONDER if one of the signs of queenlessness has ever appeared in print. Suppose you have a colony thought to be queenless to which you wish to introduce a queen. There is often a danger that, by some hook or crook, a virgin queen may be present, perhaps reared from a cell that has been missed, perhaps an interloper from elsewhere. If you find honey in pretty much all cells in the brood-nest not already filled with brood, you may feel fairly safe to introduce your queen. If, on the other hand, you find these cells empty, and polished so they shine, ten to one there's something in the hive that the bees respect as a queen. If you find honey in worker-cells, and drone-cells empty and shining, the bees are likely to have been queenless for some time, and perhaps laying workers are in contemplation. [You are orthodox in all you say. We use these signs in connection with other evidences that may or may not be present in determining the condition of the colony; but, strangely enough, very little, comparatively, has been made in print of the fact whether the worker-cells have been filled with honey or are empty and polished up clean. If polished, and no eggs are in them, it indicates that a virgin is present and will probably lay soon. Or the condition may show that a laying queen has just been let loose from a cage and will soon deposit eggs.—Ed.]

THE LAZY WAY of introducing queens mentioned on page 987 still proves successful, but beginners should be warned that it will do only with a strong colony, and in hot weather. A queen at the entrance of a nucleus, or even at the entrance of a strong colony in a cold spell, would be chilled. An illustration of the convenience of the plan comes very pat. After I had written the first part of this Straw it occurred to me that there were seven queens that had now been imprisoned three days at hive-entrances, and that it was time to let the bees at the candy. The whole job, from the time I left the house till I was back in, took just 15 minutes. As the day is rainy, no bees flying, to have opened up those seven hives, taking off and returning their supers, would have been something of an undertaking. [Introducing at the entrance may require more than hot weather or a strong colony, to be successful. If there is a dearth of honey the situation might be complicated. Elsewhere in these Straws you say that honey has been and still is coming in, or was at the time of your writing. Under such a condition a colony is very tractable, and almost any plan of introducing will work. We would not advise beginners, at least, to practice the "lazy way" after the honey-flow, with a colony weak or strong.—Ed.]

"WHEN the robbers are once trapped they should be taken to an isolated location or brimstoned. Having once acquired the stealing habit they will do tenfold more damage in a beeyard than they can ever do good." That, on p. 989, is in accordance with the general belief, "Once a robber, always a robber." There's something in it, but not nearly so much as I once believed. I suppose there are bees which have become so addicted to robbing that the best thing to do with them is to kill them. But the beginner should not get the idea that it is a wise thing to kill any bee he finds robbing. Any worker old enough to be a fielder will rob if conditions are right. But once robbing does not make an inveterate robber. Given the right chance when no honey is to be had in the field, and I suppose that any field bee in my possession would rob. But I doubt if a single bee of mine is such an inveterate robber that its death would be a gain. In the spring I've had more than one case of a weak queenless colony attacked by robbers. If I let it alone till all the honey is cleaned out, no harm will follow, and the robbers will live honest lives ever after—unless some fool bee-keeper puts temptation in their way. If I should fasten the robbers in the hive when it is filled with them, and should brimstone them, it would simply mean the practical loss of a colony of good bees. In harvest time, if a sudden break comes, from rain or otherwise, if there's any chance for it, a bad case of robbing will be started, and robbers will be trying all cracks all over the yard. Next day, with a renewed flow of nectar, honey may stand exposed by the hour, and not a robber trouble. The robbers of yesterday are no longer robbers, but honest bees. The great thing is to avoid offering temptation to steal in a time of scarcity. Same with folks. [What you say is true if a honey-flow is soon to come on. But after the flow, and there is a prospect of a long dearth, then the statement that "a bee once a robber always a robber" still holds good providing, also, there are hives to be opened often, or weak nuclei in the yard. Experience teaches us in our queen-rearing operations that a dead robber is worth much more dead than alive. For the beginner, at least, we still think that a robber-trap should be used for all seasons—especially if his yard is located near a highway.—Ed.]

GENERAL MANAGER FRANCE, in a circular of Aug. 10, quotes: "Prices asked for same, 15 cts. fancy comb retail; 12½ wholesale; car lots, 11 to 12; extracted fancy clover, 10 cts. retail; 8 wholesale; 7½ in car lots." I'm afraid, friend France, that this pronunciamento was not sufficiently considered. I don't believe conditions warrant any such tumble in prices. You've had a big crop. So have I. But "there are others." Those who have had failures are not blowing like you and me. Bro. Doolittle says basswood, their great reliance in that locality, was almost a total failure. But the fact is not advertised in big headlines. There's no bumper crop in California. When best comb is 17 in San Francisco, do you think it ought to be only 12½ in Chicago? Nor do honey-market reports in bee-journals support your figures. Look at GLEANINGS, page 976. Those who give quotations there are not bulling the market, for they are largely buyers. The average quotation for best comb is 14½, or 2 cts. above you. You see we all have a lot of confidence in you, and I'm afraid that some, trusting your figures, will get less for their honey than they are entitled to. [In our opinion Dr. Miller is right. Let the reader consult the honey market in this issue, as well as the reference on page 976. Apparently, conditions at present

warrant holding for better prices than those mentioned in the circular of Aug. 10. General Manager France is usually right; but in this case we believe he has made the figures too low.—ED.]

# EDITORIAL

By E. R. ROOT.

MR. LOUIS F. WAHL and bride, of Chili Center, N. Y., spent a day at "The Home of the Honey-bees" on their wedding-trip. Mr. Wahl has done considerable in the way of bottling honey, and he was once one of W. L. Coggshall's "lightning operators." Since he has taken unto himself a "better half" he will doubtless make things hum.

We wish the couple long life and happiness.

### OUR SPECIAL ISSUE.

As promised we take pleasure in presenting this our special issue for September, containing articles on preparing honey for market, including the general subject of bottling extracted, and scraping and grading comb honey, etc. The suggestions contained herein for disposing of the crop and preventing a glut at any one point should be given careful consideration. There are some articles on preparing for winter; why some bee-cellars do not give good results, etc., that will be seasonable.

### SELLING BY SAMPLE.

PERHAPS nothing is more exasperating to one than to buy a lot of honey, and then discover that the shipment is far below the quality of the sample. If he has paid cash in advance the matter is made more complicated. A controversy immediately ensues—if not an ugly quarrel. It is sometimes difficult to make an adjustment under such circumstances. Buyers should clearly specify that the goods are to be fully equal to sample or they will refuse to accept them. There is nothing like having a clean-cut understanding in black and white before the honey is delivered.

### THE PURE-FOOD LAW AND ITS RELATION TO HONEY LABELS.

THOSE who are doing a business of bottling honey, provided they bottle more than they produce, should avoid the use of the term "from the apiary of" and substitute therefor the terms "bottled by" or "packed by John Jones, of Honeyville, O." Some bottlers use the term "put up by;" but in the opinion of the Pure-food Commission this term would not pass muster. Nothing definite could be ascertained until a suit were tried and the matter finally settled by the courts. For that reason we advise the use of the terms "bottled by" or "packed by" as being safer.

### BOTTLING HONEY; A SCHEME TO PREVENT A GLUT ON THE MARKET AND AT THE SAME TIME HOLD UP PRICES.

NOW that the season is practically closed, it is generally admitted on all sides that there has been a good crop of white clover throughout most of the clover belt. Through some sections of it, of course, there has been little or no honey, but this does not alter the fact that a large crop has been secured. It would be folly to send all of this honey to the big markets, thus glutting them. With a little intelligent effort much can be done in the way of selling honey around home.

As mentioned elsewhere in this issue, Mr. E. E. Coveyou, Mr. Chalon Fowls, and some few others, are doing the producers a distinct service in that they not only sell their own honey locally, but are able to take a large amount from others, for which they also find a good market at good prices. But the trouble is, the number of honey-bottlers among bee-keepers is very small. They can not and do not pretend to take more than a small portion of the table extracted honey that is produced in this country, especially this year.

Mr. Coveyou, Mr. Fowls, Mr. Pouder, and the rest have done much in creating a local demand for extracted honey in small packages; and what *they* have done, others can do for their respective localities. It is highly important that this year there be more local sales to consumers direct and to the trade.

The article by Mr. Coveyou, in this journal, and in other papers, explains many secrets of the art of putting honey in small packages. Then there is a chapter or two in the A B C and X Y Z of Bee Culture, under the head of "Extracted Honey," sub-head of "Bottling Honey," that gives many important details on this important branch of our industry.

The point we wish to emphasize is this: Do not rush your honey to the large cities—at least, not after they are oversupplied. Study the art of bottling your extracted, and put up your comb honey in neat attractive cases. The sections should be nicely cleaned and scraped, and carefully graded. The poor ones containing uneven combs should be sold around home in the form of chunk honey.

Place your best goods on sale at your leading groceries, agreeing to take off their hands all that candies, and replace it, as does Mr. Fowls, with fresh goods. Try to make cash sales; but in case you fail to do this, get the grocer to take it on consignment. Charge him with so much honey as if you had sold it to him, and then give him credit for that which he does not sell, and which you will take off his hands.

In the country districts it may be advisable to sell comb honey in the bulk form at so much a pound or quart. Call on the farmer's wife and give her a free sample of your honey to taste; and, while you are about it, do not forget to treat the children. Sell for cash if you can; but if she has not any ready money, take eggs or butter if you can use them. Every opportunity should be made to prevent honey from glutting the big markets..

It may cost a little something to work up a trade, but it is worth going after.

It is very important that those who bottle honey, or sell it to the local trade, be careful that they do not overlap each other's territory. What is a fine business for one man is practically good for nothing for two. This country is so large there is no reason why bee-keepers can not spread out.

### HONEY-CROP CONDITIONS; WHY PRICES ON HONEY SHOULD BE STABLE; A LIGHT CROP IN COLORADO AND IN THE BUCKWHEAT REGIONS.

FURTHER reports confirm previous statements that this has been one of the heaviest seasons for clover honey that we have had in years; but, very fortunately for the honey market, there seems to have been a light crop in some important sections of Colorado—namely, at Berthoud, Fort Collins, and Loveland. The season has also been from light to poor in the vicinity of Montrose. The only good report that we have received from the State was from Olney. The western slope of Colorado, as reported in our previous issue, has also had a poor season. Another report, from a large buyer of alfalfa, says that there would at least be a shortage of 25 cars of Colorado comb honey. If true, this would mean that not much of this Mountain State's product will reach the East.

On top of this, in one of the most important districts of New York where buckwheat is produced by the carloads, it is reported that the outlook for this dark honey is very slim. There may not be more than a quarter of a crop. In this same section, also, the clover flow has been very light.

It would appear, then, that the bumper crop of white clover throughout the Northern States west of the Mississippi will not have very serious competition from buckwheat honey, from Colorado alfalfa, nor from Southern California sage.

The season has been good in some parts of Texas, and poor in others; but as the Lone Star State usually consumes what it produces, it will not this year, at least, have any effect on prices Northern States.

Taking every thing into consideration, it is our opinion that the market for clover honey should now be stable at least. There is no reason why it should go lower; but, on the contrary, we should expect it to be a trifle higher, although we do not advise bee-keepers to hold their crops and then rush them off to market at the close of the holidays when prices of honey usually take a slump. It would be too dangerous to hold for better prices.

Old Dame Nature seems to have a queer way of distributing her honey-flows. For example, if the crop has been heavy in Colorado it is likely to be light in the clover regions, and *vice versa*. It is well that this is so; for if the crop were heavy in every portion of the United States, prices would take an awful sag, and it is possible that we might not be able to get them up again to their former level.

There is another factor that should tend to stiffen the market. In a recent trip through Michigan we found the fruit crop had been very light, especially of peaches, and reports are not very flattering for other fruit sections.

There is still another factor. Times generally are improving. We notice by one of the lumberman's journals—an authority on the subject—that it is feared there will be a scarcity of cars, especially when the wheat crop begins to move. With the improvement of times, the scarcity of buckwheat, and of honey generally in the State of New York, the lightness of the Colorado crop, the failure of the season in Southern California, we may expect but very little competition for the big crop of Eastern clover.

We advise producers to make careful inquiries of the more distant markets, and be careful about shipping honey to the centers already congested, especially if prices are on the sag. Then, as much as possible, they should market around home. If these precautions are taken, the market will begin to stiffen.

We just received a report from the State of Washington, in which it is stated that there has been a good crop there; and one from the San Joaquin Valley, California, in which it is stated that the crop is going to prove to be a "bumper." But remember that the San Joaquin Valley is a comparatively small area, and hence its total output will not be very large. That portion of California seldom produces enough to shade prices in the East.

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### BEE-KEEPING IN THE HAWAIIAN ISLANDS; A VISIT FROM A RESIDENT BEE-KEEPER.

A FEW days ago we had the pleasure of a visit from Mr. James Ritter, or "Brother James," of Honolulu, who is making a visit to this country. He stopped off at Medina for a few hours. He is connected with one of the great educational institutions of Honolulu, the St. Louis College; is a bee-keeper, and one who seems to be well posted as to the development of bee-keeping in the Hawaiian group.

He reports that the industry is carried on very largely by syndicates who own colonies by the thousands. One company of Japanese, for example, owns 4000 colonies. The American Sugar Co. has about 12,000, and so on.

The Hawaiian bee-keeper finds a ready demand for his honey, both in this country and in Europe, especially for certain grades, which are quickly taken up by the baking business of the Pacific coast. On account of some of this honey being a mixture of a product from aphides, cane sap, and the nectar of flowers, the authorities at Washington have refused to allow it to come into this country as honey, but it may be sold as "honey-dew honey."

We had quite a quantity of it, but the bakers in our vicinity would have none of it; but we are informed that it is accepted very readily by the Pacific-coast bakers; in fact, they prefer it to any thing else.

But this is not the only honey that is produced there. At least 50 per cent of all the honey from the islands is mesquite, or, as it is called there, the algarroba. It will be remembered that this is a good honey in Texas; and, so far as we know, it is first class in Hawaii.

As the Hawaiian group consists of a number of small islands, large syndicates are able to control practically all of the bee-ranges. Whether this accounts for the fact that there are but few small bee-keepers, we do not know. Certain it is, these big concerns find the production of honey very profitable.

But let no American bee-keeper rush to Hawaii, as he will find a small chance to get a foothold there, probably. The cost of living is comparatively high, and the tenderfoot had better keep out.

It would appear that our bee-keeping cousins of the Pacific are probably the most extensive of any in the world. They are apparently up to date, using modern appliances, such as power honey-extractors and the like.

Dr. E. F. Phillips, of the Bureau of Entomology, Washington, D. C., has recently made a tour of these islands. We asked him to furnish us some articles for GLEANINGS. This he has promised to do, and we hope to have them ready to present some time this fall.

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### CHALON FOWLS, OF OBERLIN, OHIO; HIS POWER-DRIVEN EXTRACTOR, ETC.

OUR readers will remember Mr. Chalon Fowls, of Oberlin, Ohio, as one who does quite an extensive business in bottling extracted honey. He furnishes the local trade in his vicinity for miles around with extracted honey put up in tumblers and bottles. He is always careful to have thick well-ripened honey, mainly of his own production; heats it, and, while hot, bottles it, and then guarantees to take it off the grocer's hands if any of the bottles show any indications of candying. He makes it a business to go around and inspect his goods; and if in any case there are any that show signs of granulating he takes these away and exchanges them for fresh goods. In this way he has developed a fine trade — so large, in fact, that most years he is compelled to buy honey to supply the demand.

Mr. Fowls' family consists of himself and wife, two grown-up daughters, and a son eighteen years of age. Among them they take care of his business very nicely. They run a series of extracting-outyards in connection with the home yard. Like W. Z. Hutchinson, they have a reserve of combs, pile on the supers during the honey-flow, and at the close remove them after getting the bees out with the bee-escape.

Formerly he has been extracting at each of the outyards after the flow, having a two-frame extractor which he hauled around. But this year he purchased a four-frame power-driven extractor with a gasoline-engine, and his two girls are now doing all of his extracting at home. He and his son go to the outyards with a wagon, take off the filled supers that are above the bee-escape, load up, and drive home. The two girls in the mean time are extracting the shallow combs (for that is what Mr. Fowls uses) as fast as he brings them. With the power extractor they can do all the work. They start the engine and then commence uncapping. Two of them uncap most of the time, while one of them puts in the filled combs and removes the empty one and starts the extractor.

At the time we visited Mr. Fowls the weather was quite cool. Honey was very thick, and yet the extractor was throwing it out of the combs comparatively clean, for the engine does not tire out, and through the medium of the slipping belt the reel starts very gradually, so that the bulk of the honey is thrown out before the reel reaches its maximum speed. Then it makes a perfect whirr, and the honey, warm or cold, is bound to come out. The combs are next reversed, when the operation is repeated.

Mr. Fowls said to us that he had heard a good deal about the cleaner and more effective work done by power extractors; and from his preliminary tests he was almost prepared to believe that the extra amount of honey he saved by the more thorough extracting would pay for the extractor in a short time. This, of course, did not take account of the saving of labor, which is another item.

Ordinarily, producers extract honey as fast as the supers come off the hives, because the combs, being warm from the heat of the bees, extract easier and cleaner; but when one uses power to drive an extractor he can drive the reel so much more rapidly that he can surpass hand work. At all events, if one puts a bee-escape on a pile of supers at night, and it should be at all cool, the combs will be chilled before the next morning. It is an awful job to take the extracting-combs without a bee-escape, extract immediately, and put back the empty combs. The bees are smashed, and the operator, if it happens to be during the robbing season, must be armed with a bee-proof suit from head to foot, with trousers tucked in boots. There is more or less annoyance from colonies all stirred up, and at the end of the extracting the whole yard will be in an uproar. If the extracting is done during a heavy honey-flow there will be no robbers, but the work of the colonies will be more or less interrupted.

This plan requires fewer combs; for one who extracts after the honey-flow, at his leisure, must have a large supply of combs as well as storage room for them after the season is over.

Mr. Fowls has made quite a success of bee-keeping if we may judge by external evidence. He is what we might call a bee-keeping specialist, for he has no other business. Twenty-five years ago, when he began to keep bees, he bought a modest home on the outskirts of Oberlin, a college town, and lived in the old building until he accumulated enough money to build himself a fine house. It is a modern structure with hard-wood finish inside, and well appointed in every detail. He has given his two girls a college education, and they in the mean time have worked with their father during their summer vacations. The son is only eighteen, but appears to be well able to hold up his end of the job in extracting. All together, we felt that Mr. Fowls, having accomplished what he has, should be congratulated. Any father ought to be proud of girls who are not afraid of work nor too nice to go out into the extracting-house and get themselves messed up with honey; and when it comes to uncapping, we venture to say they will hold their own with any two men we have ever seen.

One of them, before we realized what she was doing, picked up a can of honey, weighing not less than 60 lbs., and carried it from one building to another. We remonstrated, telling her that she ought not to do that. "Oh, my!" she remarked, smiling, "I am used to that." Her father told me he had protested time and again, but it did not do any good.

We hope to present soon a picture of Mr. Fowls and his interesting family. Any bee-keeper who can give his children a college education, build a fine home, and at the same time educate the general public to the value of honey as a food, for miles and miles around, is to be congratulated. Some time we hope to introduce this family more formally to our readers.

# GLEANINGS FROM OUR EXCHANGES

By W. K. MORRISON

### FOUL BROOD IN IRELAND.

After much persistent hard work the bee-keepers of Ireland have succeeded in obtaining the passage of a foul-brood law by the British Parliament. This law would never have been enacted without the powerful backing of the Irish Department of Agriculture and the sympathetic interest of the Irish Nationalists in the House of Commons. Thus far the English bee-keepers have failed to secure such a law, though they certainly are in need of one as much as their Irish brethren! Hoorah for Ireland!

### DUAL QUEENS.

Among the delegates in attendance at the Franco-British conference of bee-keepers, none excited a livlier interest than Mr. F. R. Beuhne, President of the Victoria Apiarists' Association. In the discussion over Mr. Cowan's paper on the plural-queen system he was the only one present who could speak from practical experience on the value of more than one queen in a hive. He has practiced the dual plan for some years with success; that is to say, he has a young queen mated in a hive where there is a queen at least two years old. For a time mother and daughter get along well enough side by side; but after a while the old queen quietly disappears. He finds this an excellent method of rearing young queens and putting them to work "helping mamma" with her knitting until the latter ceases to exist.

### BEES IN THE IMPERIAL VALLEY, CAL.

The bee-keepers of the Imperial Valley are of the opinion that there are sufficient bees now scattered over the valley to gather up all the honey available. In 1907 only 1000 cases of honey were produced from 700 colonies. During the summer and fall of that year, however, 5000 colonies were shipped in from elsewhere. This year the honey crop is estimated at 4000 cases, and this, in the opinion of experts, is all the valley can accommodate unless the alfalfa crop is largely increased. The alfalfa-bloom louse is a serious pest which curtails the yield of nectar very much. This is a microscopic insect which eats the alfalfa-bloom and consumes the nectar at the same operation.

Thus far the Imperial Valley has marketed its honey in El Paso, Texas, with satisfactory results. They ship there in carloads, where it is again shipped in small lots.

### PARCELS POST THIS FALL.

It will do no harm to ask your Congressman when he comes around this fall seeking for votes how he stands on the parcels-post question. Don't let him put you off with an evasive answer. You can inform him the postoffice has all the machinery necessary for the inauguration of this great improvement just as soon as it gets the signal from Congress. The mail-wagons go out every morning with plenty of room inside for packages. It is the same with cars. Of course, something will be said about the retail country merchant being ruined; but the rule is now the greatest good to the greatest number. Both Bryan and Taft are known to favor parcels post; but there is no politics in this business in any event. The farmers are too slow as a rule in asking for what they desire and need. Whenever the "business" interests *demand* any thing they very speedily get it from Congress. They organize, and push things until the Congressmen are *compelled* to give them every thing they want. Any way, almost all the bee-keepers would be helped by the establishment of parcels post, and would like to see it come into use.

### HAY-CAPS, AGAIN.

The following from *Hoard's Dairyman* bears on a very interesting question to bee-keepers. The use of caps for curing clover hay is one of the best agricultural improvements of recent years. It is particularly useful in curing alfalfa, as it allows the farmer to let his crop grow to full bloom before cutting it. In localities where the ranchers cut the crop before it is in bloom the bee-keepers can, with the greatest confidence, recommend hay-caps. The crop is cured without losing the leaves and other delicate parts. This is the essential point.

In the *Dairyman* of the 7th is an editorial on curing alfalfa. As I wish next season to follow these directions, and I am in doubt about some points, please inform me first: What is the size of your hay-caps? I can not find any cotton cloth more than 36 inches wide, except double-width sheeting. Second, how long must the hay remain in the cock to go through the heating which you say it requires to cure properly, if weather is good? and should it be put up damp enough to change color in the curing process?

Wasco, Ill. N. H. W.

You will find a very full discussion on making alfalfa hay in our two last numbers. The hay-caps are made from A sheeting, 40 inches wide, but 36-inch cloth will answer. The time the hay must remain under cover will depend on the weather. It may require anywhere from one to three days. When the hay strongly twisted shows no sap it is ready for the mow. If properly cured in the cock it will remain a fresh green in the mow, and will not heat or change color.

### GLUCOSE AS A FOOD.

A friend in Nebraska has sent us a clipping from *Green's Fruit Grower*, which praises glucose highly as a food. Of course he expects us to refute the statements made therein. Briefly the case is thus: *Natural* glucose is a very fine food (honey is a natural glucose). It is found also in fruits, but in combination with something else. It is true, certain scientific chemists have praised artificial glucose, among them Dr. Wiley. He has changed his opinion, however, and so have others. Artificial glucose is made by the action of sulphuric, hydrochloric, or muriatic acid on starch. The action is far from being complete, and traces of these powerful acids are found in the glucose. Small as the quantities are, they are dangerous, as was amply proven by the Manchester case. Our glucose always contains chlorides. Students of digestion are agreed that these should not be there, even in very small amounts. It is true that glucose is used in making *cheap or inferior* preserves. For first-class goods, cane sugar is used. Let California preserve-makers use glucose and it will be only a question of time when their industry will be ruined. The ordinary "corn syrup" of the groceries contains about one-third part of cane syr-

up, which makes the glucose eatable, otherwise it would not sell at all. It would be better for the public if it were all cane syrup; and it ought to be remembered that the United States can produce vast quantities of cane syrup at a price not appreciably greater than that now paid for glucose. Dr. Wiley was hopeful of creating just such an industry, built up on honesty and fair dealing. Several large plants have been started lately in Louisiana to make a good syrup; but more would have been started had Dr. Wiley been allowed to have his own way in the glucose controversy. There is this to be said, however: The American people are rapidly becoming educated on the food question, and are more particular by far about their eating than they once were. The more particular they are, the better it will be for honey-producers.

### LAND FOR SETTLERS.

THE following accounts relate entirely to lands lying under an irrigating canal constructed by the United States government acting for the settlers. Further particulars can be obtained only from the Secretary of the Interior, Washington.

In connection with the Sacramento Valley irrigation project in California, 265,000 acres will be subject to selection and filing on and after Sept. 3, 1908. The lands lie in townships 12 to 15 north, ranges 6 to 10 west, Mount Diablo principal meridian.

At the Carlsbad, N. M., irrigating project, 106,000 acres will soon be subject to settlement and entry.

Nearly 59,000 acres will soon be open for settlement at Big Bend, Washington.

At the Sun River irrigation project in Montana, 45,000 acres will shortly be opened for homestead entry only.

Dates will soon be fixed for the opening to settlement of 128,000 acres of irrigation lands in connection with the Minidoka project in Idaho.

On and after Sept. 10, 1908, there will be open for settlement 12,000 acres on the Payette-Boise project in Idaho.

The Secretary of the Interior will shortly declare open for settlement 300,000 acres on the Lower Yellowstone project in Montana.

It may be added that the government has approximately 3000 farms elsewhere which it will give away on certain conditions. These are all on irrigation projects. As a rule, these homesteads are superior to those given away some years ago in the prairie States; and to men who understand their business they offer excellent opportunities. All of them are likely to be in the heart of a good bee-range.

### THE LORE OF THE HONEY-BEE.

Mr. Tichner Edwardes, author of "The Beemaster of Warrilow," has again appealed to the reading public of the English-speaking race with a new book bearing the above title. Without having seen it I can not express an opinion as to its merits or demerits; but Methuen & Co., the publishers, state that it is "a history of bees and their masters from the earliest times down to the present. The wonderful communal life within the hive is touched on in all its varying aspects, and the reader is introduced to a class of men from all ages, as quaintly original as their calling is inimitably picturesque. The book covers the whole field of ascertained facts in the natural history of the bee, as well as the romance of beemanship, past and present; and nothing better could be put in the hands of the beginner in apiculture, as well as those of the advanced student of what is probably the oldest human occupation under the sun."

# NOTES FROM CANADA

By R. F. HOLTERMANN.

Messrs. John Newton, Thamesford, Ont.; D. Chalmers, Musselburg, Ont., and Homer Burk, Highland Creek, Ont., have been appointed inspectors in Ontario in addition to the list recently given in GLEANINGS.

### THE EFFECT OF STORES IN THE HIVE UPON THE ENERGY OF THE BEES.

Perhaps it is not going too far to assert that, if the bees have not much stores in the hive, they are less active in gathering honey (I certainly believe they are less inclined to rear brood); but it is a new thought to me that the amount of stores in the hive would have any influence on the honey-gathering disposition of the bees. According to that, the disposition of a colony to gather honey would be reduced to a minimum.

### BUCKWHEAT-GROWING.

On p. 958 Mr. W. K. Morrison says, "Probably few bee-keepers are aware that there has been a serious decline in the production of buckwheat as a farm crop in America." This statement is followed by facts and figures. Probably that is why the prices obtained in Canada for buckwheat are so much higher in recent years, and it may be for this reason that the acreage in Ontario, at least, is on the increase. German buyers are anxious to buy buckwheat grain in Canada.

### SHADE FOR BEES.

In Stray Straws for Aug. 1, Dr. Miller writes, "When I look back I see the very best results from bees under apple-tree shade." That is certainly my experience. I like to have trees in an orchard. I like to have the bees shaded during the heat of the day, and I believe such shade has a cooling effect, even beyond the actual area of shade. Of course, I prefer a tree which breaks into leaf late in the spring, and I want light enough under the trees to produce healthy vegetation.

### VENTILATION TO REPRESS SWARMING.

The question of ventilation in the supers by other means than at the entrance of the hive has been discussed. I have a ¼-inch by 5-inch opening for ventilation in three-fourths of my extracting-supers, which can be closed by means of a slide. I find the ventilation given in this way is a great comfort to the bees during hot weather. During the time the bees are gathering surplus honey there is no great difficulty in keeping

up the temperature of a normal colony. I feel quite sure, backed up by examination, that the bees are sometimes driven out of portions of the hive and compelled to remain idle, owing to excessive heat or lack of ventilation in the hive. Shade and a *large* entrance have, of course, an effect similar to the super ventilation. However, I like to be able to use all in combination.

PRICES OF HONEY.

The "Honey Committee" has again done good work in recommending prices for honey. There is no doubt that the work of this committee is the most valuable apicultural work that has been done in Canada for years. Prices, after allowing for wholesale, retail, and jobbers' profits, the quantity sold, the distance from market, and the cost of the package which contains the honey, are something like uniform. Such results must, in the long run, be an advantage to buyer and seller alike. May the good work spread to the United States.

PREVENTING THE SPREAD OF FOUL BROOD.

Recently I saw James Armstrong at work—one of Ontario's foul-brood inspectors. He appeared to have a plentiful supply of toothpicks, and I suppose that, to obviate the possibility of carrying infection from cell to cell, he appeared to discard these very freely. Some time later I had dinner at the same hotel that Mr. Armstrong was patronizing, and upon leaving the office I saw him help himself to a very liberal supply of toothpicks—rather more, in fact, than I thought necessary for a mouth with an ordinary set of teeth. Upon reflection light dawned upon me, and I could see wisdom displayed in combination with economy.

COMB FOUNDATION IN SPLIT SECTIONS.

This year I have seen some results from putting a long strip of foundation into four sections split on three sides to receive it, the sections thus having no passageways between the wax and the wood unless the bees gnawed through the foundation. There is no doubt that such a section will ship well, because the comb is thoroughly attached on all four sides; but it seems to me that the bees are noticeably more likely to work on one side of a section independently of the other. This results in a considerable percentage of sections with one side built out and capped while the other side is left entirely untouched. There are, therefore, more cull sections under certain conditions; yet I am pleased in general with this way of putting foundation in sections.

THE SELECTION OF LARVÆ BY QUEENLESS COLONIES.

It is now about ten years since Dr. Miller and I at the National convention in Chicago mildly crossed swords on the question of the bees, when queenless, selecting larvæ for the purpose of raising another queen. I thought I had observed that queens reared under such conditions sometimes hatched prematurely and were much inferior. In GLEANINGS for July 15 Dr. Miller puts the question very fairly; and the evidence he brings forward to the effect that the bees do not select larvæ too old to develop good queens is very strong. Would it not be well to carry the experiment at Washington a little further, and give the time of hatching, and, as far as it can be judged, the merits of the early-hatched queens as compared with those hatched later, if there should be any material difference? Dr. Miller states rightly that the question is one of importance. I may be mistaken in my decision; and with the variety of work I have had to perform I may have come to a wrong conclusion.

DOES BUCKWHEAT YIELD NECTAR DURING THE CLOVER SEASON?

On page 236 of the *American Bee Journal*, Mr. J. L. Byers says: "Speaking of buckwheat, I am at a loss to know if the plant yields no honey early in the season, or whether the bees will not work on it when clover is in blossom. A large amount of buckwheat came up among the oats and other grain. One field of ten acres was literally white with the blossoms during the time clover was in blossom; yet, although we had a few mornings that one would think ideal for the buckwheat to secrete nectar, scarcely a bee could be found upon the blossoms." I have had some experience in a buckwheat and clover section, and I have had the experience of other bee-keepers similarly situated. We have often found that the bees worked on buckwheat during the clover season. In my estimation an ideal buckwheat morning would be an ideal clover morning. It seems to me that, when clover does not yield well, buckwheat may; or if clover is not very abundant the bees will work on buckwheat. I have also found Italian and Carniolan bees less likely to work on buckwheat when they can obtain white honey. This latter has been my experience again and again.

# GLEANINGS FROM THE PACIFIC COAST

By PROF. A. J. COOK.

SOME HONEY IN CALIFORNIA.

While the cool delightful spring was unfavorable to honey production in most parts of our State, yet in some of the inland canyons there has been a good honey crop. In one section near Santa Ana, the product has been measured by the carload. Could we have had in May and June the warmth that has come to us in July we should have had a tremendous production. It all depends on the weather. Warmth, no less than water, is imperatively needed.

PROPHECY FULFILLED.

This year has been very cool in most parts of our State. This has been so universal that in most parts of the State there will be a very light crop. In some interior valleys where warmth has prevailed, there has been harvested a fine crop.

In the Imperial country, as I learn, they have harvested honey by the carload, though the region is very new agriculturally and also apiculturally. I feel sure that these hot interior irri-

gated regions of our great West will prove banners for the bee-keeper.

BEES EARLY RISERS.

I have always been a very early riser, and at the present time I am often at work in my yard before it is light, that I may avoid the heat of the day, as the past month has been unusually warm in all Southern California. The house of my next neighbor, Mrs. Kinney, a short distance from my own, has had for years a flourishing colony of bees that go in and out close beside the great chimney on the south of the house. Every morning, before daylight, the bees are out in force, and one would almost think that a swarm was issuing. They are active all the day, but at no time are they anywhere nearly as busy as at this early morning hour. I am glad that the bees have learned the joy of outdoor life in the early hours of the morning before the sun has come with his blistering heat.

FERMENTATION OF HONEY; A NEW TROUBLE.

To-day comes a letter from Mr. Henry Perkins, of Calexico, a place to the very south end of the great Imperial Valley, which is burdened with a new complaint. He writes: "Can you give me a remedy for honey souring in the hive? This condition has developed in quite a number of the colonies in the past week. It begins with a few small air-bubbles in the cells, which increase in size and number until the cells are full, and a perceptible movement is obvious. This honey is very thin and sour, and the bees cease gathering and die off very rapidly. I notice that all honey is very thin, and ripens very slowly. The weather is exceptionally humid." Mr. Perkins wonders if the bees might not be fed syrup that contained some anti-ferment, in the open, and thus the fermentation be stayed. He naturally desires some speedy advice.

Since the researches of the great Pasteur, of France, we are entirely familiar with the cause and natural history of fermentation. All sugars, if very dilute when in solution, are the best pasturage for micro-organisms, and these bacteria are ever ready to take possession of such syrups. Vinegar is a result of just such action. Our unripe honey illustrates the same truth when it sours, as it is likely to do, in the presence of these ferment germs. The spores of these minute vegetable germs are always in the air; and if the weather is warm and close, then these germs thrive vigorously, and souring is always to be looked for. In the action of these germs, not only is acetic acid produced, but, as surely, carbon-dioxide gas. Barrels of unripe honey are likely to burst from this cause, as I once witnessed in the warehouse of our old friend Newman while I was visiting Chicago.

Heat, humidity, and thin nectar are then the sure re uisites of fermentation; and the fact of these conditions explains all, in the present instance, in Mr. Perkins' apiary.

AND YET A PUZZLE.

The strange thing is, why does not the heat of the hive ripen the honey, and thus make it no fit place for the bacteria? Can it be possible that the depressed basin, below the level of the sea, together with the inordinate humidity, prevents evaporation, and so the honey fails to ripen, and fermentation is the result? If this is the case we may hope that the humidity will be of short duration; and with the return of the usually dry atmosphere the honey will ripen, and the sour honey will be no more. Of course, such honey is not good food, and we can not wonder that the bees die. Would it not be wise to extract this honey as soon as noticed, and ripen it artificially, and so save the bees? This can be determined only by experiment. By using great care it could be heated enough to kill all the germs, and it might be safe to feed it back to the bees after fermentation has ceased. Surely here is a good chance for Mr. Perkins to try some research work on his own hook, which may be of use to him and his neighbor bee-keepers. I do not believe it would be possible to correct this by feeding medicated syrup. It would be nice work to gauge the germicide so as to cure and not kill.

I hope that we may hear from Dr. Phillips, Mr. Dadant, and others in this matter. Has it been experienced before in other sections and in other apiaries? how long did it continue? was there any cure discovered? Surely these are timely and pertinent questions.

THE IMPERIAL VALLEY FOR BEE-KEEPERS.

It will be remembered that I have spoken in praise of the regions of Imperial and Coachella for apiculture. These are in the depressed valley where the great Salton Sea now holds the fort, and will till it all evaporates, which will take some years. I think this region very favorable for bee-keepers, as there are many of the best of our honey-plants grown in increasingly large quantities, such as alfalfa, melons, asparagus, and fruits of all kinds. Again, this region would be an arid desert, as it was only a few years ago, except for water and irrigation, and so the abundant water from the Colorado for Imperial Valley, and from artesian wells in the Coachella Valley, must always be used, and so there will always be the vigorous vegetation which is a *sine qua non* for nectar secretion. Again, the weather is always warm and almost always dry—that is, the moisture content of the air is very slight, and so the flowers will not hold back the nectar as they are wont to do in the cool seasons that come to all parts of our country. So, like parts of Colorado, Arizona, Utah, Nevada, and the San Joaquin Valley, of our own State, we may expect a certain honey production, or more certain than in any other part of the world where these conditions do not prevail.

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We are glad to be able to announce that there is likely to be a State organization of bee-keepers in Mississippi. Mr. H. E. Blakeslee, Commissioner of the Department of Agriculture and Commerce, Jackson, Miss., is making an effort to get the names and addresses of all the bee-keepers in that State, of which he has at the present time about a thousand. A meeting will be held in Jackson at 10 A.M. on Monday, Nov. 2, for the purpose of perfecting the organization.

# CONVERSATIONS WITH DOOLITTLE

WINTER PREPARATIONS.

"I was told the other day that you believe that September is the month in which to prepare bees for winter, if the best results are to be secured the next season. This was something quite new to me, so I have come to have a talk with you. It is so different from what I have been practicing that I had my doubts in regard to it."

"Well, Mr. Grant, I believe that the most of our bee-keepers wait until it is too late in making any needed preparations for winter. Wintering is one of the great problems in the northern portions of the United States; but there are some things regarding the wintering of bees which are applicable to all portions of North America, if not to the whole world."

"But you would not recommend such a thing as cellar wintering, as you practice it, to our friends in the South, would you?"

"No. In fact, this early preparation we are to talk about will have very little to do with where the bees are to be wintered, but, rather, about the preparation of the colonies. One of the old veteran bee-keepers of the time when I first started in apiculture said, in a convention which I attended, that the time to begin preparations for the honey-flow is the season before. Now, we shall have to modify this but little to have it apply to the preparation of colonies for wintering, for, surely, such preparations place the bees in the best possible condition to be in readiness for the flow of nectar when it comes the next season. All of the old stereotyped advice of the past has had to do with the wintering problem along the line of whether the hives should be packed or unpacked; whether the bees should have ventilation at the top or the bottom of their hives; whether there should be much moisture in the cellar or great dryness; whether the cellar should have sub-earth ventilation or ventilation by means of a tall chimney; whether the colonies have sufficient honey, or stores of sugar syrup with no pollen, etc. But little stress is laid upon other conditions such as age of the bees, the age of queens and their general good qualities, the proper spacing of the combs, etc. Sufficient stores, also, should be included as one of the necessary preparations to be made at this time of the year."

"Then you think that September is the time to do these things?"

"Yes, or earlier. As a rule, wintering preparations are deferred until late in the fall, when it is too late to cure any defects that may be discovered in the general condition of the colony, except, perhaps, the giving of stores where colonies are found wanting. I believe it to be a fact that, if a colony is provided with a vigorous queen, plenty of bees of suitable ages, and ample stores within easy reach, the other so-called essentials may be in a measure disregarded in almost any locality except where winter holds supreme for five or six months without giving the bees one single chance of flight."

"When should this preparatory work begin?"

"You can not set any day of the year, but it should begin immediately after the close of the honey harvest, and continued, if necessary, and, whenever the weather is favorable, well into the first week or two in October. I would first requeen, with the best stock in the apiary, all colonies whose work had shown during the season that their queen was not of the very best order; and I would not allow prolificness in the production of bees to be the only essential to go by either. Together with prolificness and great honey-gathering qualities should go perfect comb-building in the sections, white capping of the combs, little inclination to build brace-comb from the surface of the combs in the sections to the separators, and the bees should not daub every thing over with propolis."

"Do you expect to get a bee perfect in all of these respects?"

"It may not be possible to reach perfection in all of these things; but unless we set our ideal high we shall be drifting toward a lower level all the while. I know that, with such high ideals before us, very many of our best queen-breeders have bees to-day which would have been called *perfect* by those of half a century ago; and if we improve in proportion for the next half-century, those who are on the stage of action at that time will have bees which we would now pronounce perfect. Occasionally there will be a colony headed by a queen whose bees are inclined to store the larger part of the honey in the brood-combs, or, in other words, they will gorge the brood-nest with honey, so that late in the season there is little room available to raise young bees. The old bees soon die off, and spring finds the colony heavy with honey, but so reduced in bees that half of the harvest is past before the colony can be gotten into shape to work in the sections. This condition can be remedied now with but little work—first by changing the queen for one of the young ones from the best stock; and, second, by removing two or three of the frames of solid honey and inserting in their places frames of empty worker comb. A little of the honey at the lower side of the remaining frames should be uncapped to give the queen a chance, which she will not be slow to improve, as she is young and vigorous. If this is done the last of August or the very first of September, two sets of bees will be reared and a suitable force provided whose period of life will be extended far into the spring. I have known such bees to live and do good work well into the latter part of June, and always until the colony becomes strong enough to take advantage of the flow of nectar from white clover. All colonies deficient in stores should be fed, rather than wait till so late that they will not properly surround the brood or clustering-nest with well-ripened food. If done thus early in the season, the feeding will not only provide the necessary stores for winter, but stimulate, to the rearing of a little extra brood, the bees from which will help to carry the colony into the next spring in perfect order."

"But all of this will require a lot of work?"

"Not so much as you think, for the little attention at this time to these details will lay the foundation for a good crop the following season, and is really work which pays fully as well as if not better than any thing else which we do throughout the whole year."

# GENERAL CORRESPONDENCE

## CLEANING COMB HONEY.

### How to Make a Table for the Purpose, and How to Avoid Scattering Bee-glue where it does Not Belong; Plain Sections Best for Scraping.

BY J. E. CRANE.

I said to my helper a few days ago that I was expecting to write an article for GLEANINGS on cleaning comb honey. "Well," said he, "there ain't nothing to do in cleaning honey but just to scrape off the propolis. That is all there is to it."

It seemed a good deal so to me; but when I remembered the slow sticky job of years ago, and the cleaner and more rapid way we now do it, it looked as though there might be something said that would be of *some* value, at least to beginners.

First, we want a suitable bench or table. The one described in the A B C and X Y Z of Bee Culture seems sadly defective, as it makes the operator stand on his feet, which alone would tire me without doing much work. A table that one can sit down at seems to me more desirable.

One of the best I have ever seen was described in GLEANINGS, I think, by Mr. P. H. Elwood, of Starkville, N. Y., a few years ago. I made one somewhat after his description, and it is about as follows:

Make a table of planed boards, 3½ ft. long by 2½ wide, with legs short enough so that, when you sit in a chair, the top of the table will come just above your knees. Around the top, nail a four-inch board for a rim which will extend three inches above the upper surface of the table. Two strips, one inch by ⅞ inch, and the length of the table, are to be nailed six inches each side of the middle of the table. Now get two aprons of denim or other strong cloth, made so one end can slip over your neck, like the leather apron of a blacksmith, with the lower ends tacked to the end of the table. Now place a super of sections on the two cleats which support it one inch above the table, and with the apron over your neck, a sharp knife, and your sleeves rolled up, you are ready for business.

The apron and table catch nearly all the propolis, and the cleats hold the super out of the way. It is not necessary to rest the section on the table, but hold it in one hand and your knife in the other, and then you can make the propolis fly. I like a good heavy jack-knife for this work, and it should be of the best steel, and kept sharp to do the best work. The propolis scrapes off better in cool weather than when it is hot, and after the sections have been off the hives a few weeks than when first taken off; but as we can not always wait we find that a little dish of water on the table, to dip our knife into frequently, will help much in keeping the propolis from sticking to it.

Before sitting to the table to work I take five supers, and with an old steel caseknife I scrape the top of the sections clean, and then scrape the bottom of the super free of wax and propolis; and as the sections are cleaned they are placed in clean supers. After the sections are removed from a super the entire super is cleaned of propolis. I have seen sections cleaned and then returned to a super to be again stuck up before using. Some weigh and pack the honey as cleaned; but I prefer to put the sections back in supers by themselves and the separators in other supers by themselves.

#### GRADING AS WE CLEAN.

If we can, it is well to sort as we clean, placing the best grade alone in the same supers, seconds by themselves, and the very light ones in supers to go to the extractor. Another grade should be made if necessary.

All combs containing cells of pollen, not covered by honey, or containing cells of brood, should be put in a super or supers by themselves, as worms, or the larvæ of the wax-moth, are almost sure to develop in them and ruin them unless watched; and when a few sections have worms just beginning on them, place in a stone crock and on top of them a dish into which pour a teaspoonful of carbon bisulphide and cover tight for twelve hours, after which they may be set aside with safety until you get ready to dispose of them as you think best.

#### THE WORK OF DIFFERENT COLONIES IN THE SUPERS.

In cleaning ten or twenty thousand sections we are sure to find some imperfect ones, and others that have brace-combs so attached as to make them surely leak when detached from separators, and there are many others that have been set to dripping by careless handling. For these I have two tin traps or pans, 18×24 inches, and 1½ inches deep, set on a table. Over these I stretch galvanized wire screen on which I place any sections that drip, until they have run dry, when they may be cleaned of honey and used or sent to the extractor.

One of the most difficult things in cleaning honey is to keep propolis in its place. With some help it will get all over the floor and over your honey-house, out on the walk, into the kitchen of your house, and even into your parlor, and you wonder where it all came from. Even with the greatest care it will be well, when you hear the dinner-bell, to scrape your feet carefully or change your shoes, or the good wife may meet you with a frown instead of a smile.

Heavy paper laid on the floor before beginning to clean honey is a great help in cleaning up when through, for you have only to take up the papers and burn them, and your floor is about as clean as when you began.

At its best, cleaning sections is apt to be somewhat monotonous. It is better to work at it by the job rather than by the day. A watch on the table beside or in front of you is sometimes helpful; and if you can clean 120 an hour you can at least clean 1000 a day; and if you have only 12,000 to clean you know that two good hands should go through it in a week.

There is a way by which the monotony of cleaning honey may be largely done away with providing the honey is of your own production and from your own bees, and you do all the work yourself. Just mark on each super as you take it off, the number of the hive, and whether it is

first, second, or third super. Then as you clean each you know just where it came from. Keep a record of your hives near you also for reference if desired.

Now notice the constant variation in the combs built by different colonies. Here is one where the combs are of snowy whiteness, almost every one filled perfectly, so you will prize very highly the colony that produced it; and, if possessed of other good qualities, it may be just such a one as you may wish to rear queens from next spring.

The very next super may be filled with combs with more or less pollen in them. What is the cause of this? Were the bees queenless while filling the super, or was it because of a slovenly way of scattering pollen through their hive? A glance at the record will show. If they had a queen she should be blacklisted. Here is another with various irregularities, with some of the combs twisted and attached to separators and plenty of brace-comb.

We soon find another with thin lean combs, some of them hardly finished, but, oh my! how every section and separator is stuck up with propolis! It takes twice as long to clean such sections, and, when finished, they do not look well. Evidently the bees of the colony that produced it were not lazy, but their industry was misdirected. Better place the queen of that colony on the black list to be removed at the earliest opportunity. After finding half a dozen supers fairly satisfactory we find one with more or less brood in the central combs. Why is it there? Was the brood-chamber crowded with honey or was it owing to a lack of honey when the combs were built, or an unusually prolific queen?

Here is another style of sections we are pretty sure to come across. They are well filled, well capped over, but those cappings are badly stained or discolored with dark wax or propolis, or what not. Shall we place the queen of such a colony on the black list too, whose workers do not do just such work as pleases us? It grieves me that we must visit the misdeeds of the children on the innocent queen mothers. Well, we need not blacklist the queen whose workers stain their combs badly, for I have found a way by which it can be largely prevented.

We may think of a large pile of supers of honey to be cleaned, not as a great job of disagreeable sticky work, but, if properly numbered, as a great volume, each super a page, giving us the history and character of each colony so far as it relates to storing surplus honey. To me the opening of this volume, and reading it page by page, is a great source of pleasure as well as instruction. I am usually glad, though, when I am through.

I have said nothing about a cleaning-machine, as I know little that can be said for them. I find I can clean from 100 to 120 per hour, although the weather has been intensely hot, and the sections just removed from the hives, and I doubt if a machine could do more.

I believe the use of plain sections, perhaps, simplifies and helps the rapid cleaning of sections more than any other one thing; and if there was nothing else to be said in their favor this alone should be sufficient to make them popular.

Middlebury, Vt.

[We understand from the description that the super is placed in the middle of the table while an operator sits at either end. Some prefer to stand up a part of the time at least; and if the table were made just right for standing, chairs could still be used if extensions were nailed on the legs.

Mr. Crane does not say just how he uses the scraping-knife. We infer that he makes a sort of sweeping motion toward the table, causing the particles of propolis to fly in that direction.

We suggest that our correspondent have some nice photographs showing the table, the operators at work, and the manner of holding the section in one hand, and the use of the knife in the other.

We would hold this article for the photos, but the subject matter is so seasonable that we have thought best to publish it at once and the photos afterward.—ED.]

## MILKWEED AS A HONEY-YIELDER.

### Is the Plant Detrimental to the Bees?

[The following note was received by Professor Surface, who, thinking that it might be of interest to our readers, sent it on to GLEANINGS, together with his answer.—ED.]

*Prof. H. A. Surface—dear Sir:*—Watch closely the honey from milkweed. Last year it yielded a good crop of honey. Locality may make some difference, but it is valuable here as a honey-plant. L. B. WHITNEY.

Covington, Pa., June 24.

[Replying to the above, Prof. Surface says:]

*Mr. L. B. Whitney—dear Sir:*—I appreciate your communication upon this subject, and would call your attention to the fact that milkweed is very objectionable as a honey-producing plant for the reason that the pollen-bearing blooms of the plant pull off and stick to the legs of the bees and disable them, and cause the others in the hives to throw them out, and they are thus killed in great numbers. If you will look closely at bees that have been getting honey from milkweed you will find little yellow appendages on their legs. These are parts of the flower known as anthers, or pollen-sacks; and as they stick so closely as to disable the bees they eventually cause the death of the honey-gatherer. Thus the value of milkweed as a honey-producer is to be more than questioned, and I would recommend mowing it down as a matter of preservation of the bees. Whether all species of milkweed have the power of injuring bees by the pollen-sacks adhering to the legs or not, I do not know; but it is true of the low kind with pink flowers which especially grows in swamps.

H. A. SURFACE,
*Economic Zoologist.*

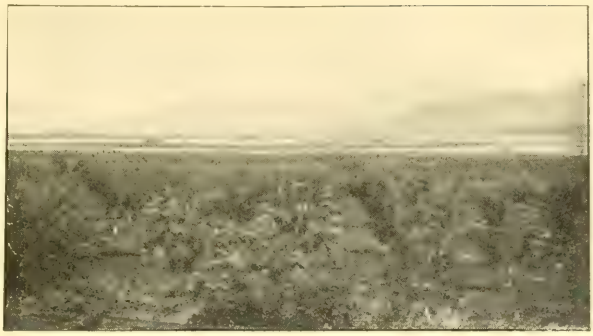
Harrisburg, Pa., June 26, 1908.

[At the convention of the Northern Michigan Bee-keepers' Association, held last April, one of the members mentioned having secured a fine crop of honey from the milkweed. He reported the flavor as being pretty strong at first, but it became milder until it was but little stronger than white-clover honey. The color was so light that he received 1½ cents more per pound for it.—ED.]

## THE TROUBLES OF AN AMATEUR BEE-KEEPER.

### A Fresh Start with Bees.

BY F. DUNDAS TODD.



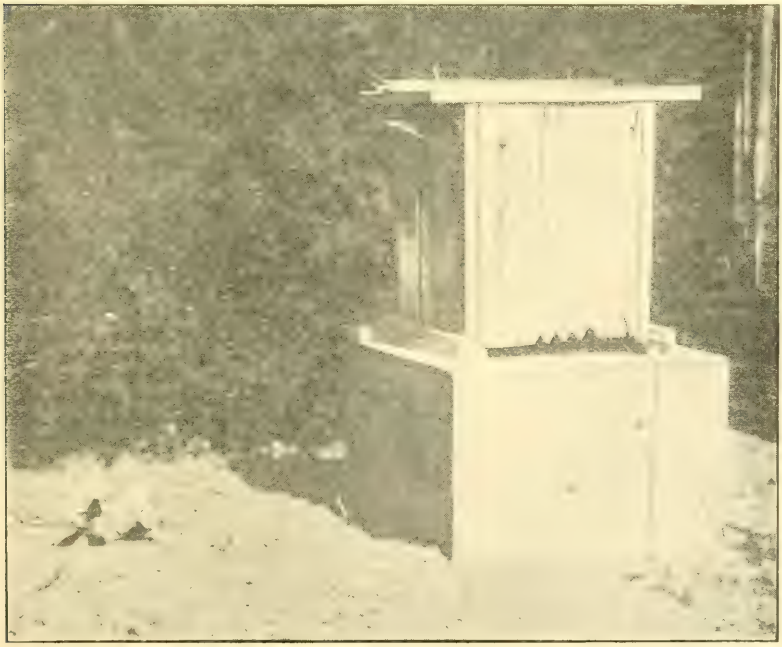
AN ORCHARD SCENE IN SOUTHERN OREGON.
Note the bee-hives under the trees.

The middle of August found me in Southern Oregon; and before I had moved into my new home I had bought a "stand" of bees—not a hive, but simply a box made out of 12-inch lumber about 14 inches high. I ought to have photographed it as I first saw it standing on a huge drygoods-box and surmounted with a double-tier section-super that overlapped it everywhere. Bees were flying out and in of all sides of the box, as these had conveniently cracked from top to bottom. Examination showed a hole an inch in diameter at the top of the hive, and through this the owner expected the bees to enter the super and lay up a store of sweetness for him. Because they would not, and as he was going to move, he would sell for a dollar, and I handed him the money.

Now, I ought to be able to tell how simply and perfectly I transferred that box hive to my own yard; but instead I must confess I acted like the veriest greenhorn, and made a mess of it that was humiliating. The trouble was, I had no stand, so I wanted the drygoods-box too. So one night I took four fair-sized nails, a hammer, some mosquito-netting, and a wheelbarrow, and started to fetch that box hive. With the netting I wrapped the hive as it stood, covering all the entrances and exits, then proceeded to toenail the hive to the box. Then my boy and I lifted the drygoods-box and hive on to the barrow. Grasping the handles of the latter I started for home; but before I had moved a foot the wheel struck a snag; the nails gave way, and that confounded box hive turned several somersaults over the wheel. The bees may have been startled. I certainly was. A hasty examination with the lantern showed the hive on the ground upside down, with thousands of bees running all over it. Prompt action seemed a necessity, so I dumped the drygoods-box on the ground, grabbed the hive, landed it right side up on its old stand, and then skipped to a certainly safe distance. I carried a few troubles away in my fingers, just as souvenirs of the occasion.

Next night I acted sensibly. I spread a large square of two-fold mosquito-netting on the big box, lifted the hive into the center of it, gathered the slack up round the sides and tied safely with a string. Now I could handle the box of tricks without anxiety. The engraving shows what it looked like in my own yard. I felt I would have no troubles over this hive until spring, as bees in this valley get no winter protection whatever.

However, trouble followed me on the old schedule, but with a new variation—it always does act that



THE TODD APIARY, MEDFORD, OREGON, AS IT WAS IN OCTOBER, 1907.

way. One day I saw a worm of some kind lying in front of the entrance, and I wondered what it was. Once more to the books, and I began to suspect the beeswax moth. Enquiry soon let me know that this insect was exceedingly prevalent in this region; in fact, it seemed to have headquarters here. What was to be done about it? I decided to transfer to a frame hive, but I did not have one beside me; so, having lots of leisure on my hands, I proceeded to make up a couple in a crude way according to the style used by Mr. Hand, in whose articles I had become intensely interested, and made the transfer Nov. 6. Rather late, you will say; but let me assure you the sun was shining brightly, and the thermometer registered 65 degrees in the shade. At date of writing, a month later, the bees seem to be all right, so I have no real material troubles on hand just at present that I know of; but I am struggling very bravely with other men's ideas and the conditions in this valley so as to head off trouble in the spring, when I purpose endeavoring to smash all records for building up increase. Of course, I shall probably fail, but will have lots of fun trying.

I wish somebody would tell me the kind of bees I have. They are not Italians, and I don't think they are Germans. Imagine an interval of 30 minutes to have passed since I wrote the last sentence. I have just returned from visiting a couple of my neighbors' yards, where I have inspected the color of the bees. I found one hive where the bees were very black, but most others very closely resembled mine. Just fancy I am, as a bee-keeper, in the same class as Dr. Miller, for my apiary is stocked with hybrid bees. Of course, he has about 300 hives while I have only about half of one; but in my early youth I was taught that the size of the offense did not count so very much—it was the quality.

My bees seem to be more gentle than those of the doctor, but all the same I will Italianize in the spring, because, if they develop the demonical traits that are characteristic of those in Marengo I should never be able to attain the sunny countenance for which the oldest, yet youngest, bee-keeper in America is famous. And since there will be no female restraining influence in my bee-yard my language might become more picturesque than it is now when my sweet pets get their innings, and score both hits and bases.

Last night I dreamed a wondrous dream. Somewhere I was traveling in a train, and I got into conversation with the conductor. Our subject was bees. He told me the only place in Oregon to keep bees was near Mt. Hood, and that he had one hive there that gave him 4000 pounds of honey each season. I felt sorry I ever woke up. Wouldn't you, too?

Medford, Oregon.

A NEW SHIPPING-CASE WITH SLIDING COVER AND CUSHION PAPER TO PREVENT THE BREAKING OF SECTIONS.

## A NEW STYLE OF SLIDING-COVER SHIPPING-CASE.

BY E. R. ROOT.

Every now and then there has been a call for a shipping-case with a sliding cover so that the case may be opened, a section or two taken out, and the case instantly closed. The trouble with the ordinary case with the nailed cover is that it is not easy to open for the purpose of inspection. When it is put on the counter to retail from, the nails must all be drawn and the cover laid on top. This has its objections, because the cover gets pushed aside, flies and ants get inside, the sections become soiled, and the public does not want them. To make a sliding cover in the ordinary way requires projections that will split off in shipping. It is important to have the covers so that the top surface of the case may be perfectly smooth, so that, when the cases are piled one

on top of another, there will be no danger of knocking off the projections.

The accompanying illustration is a form that has been suggested by some of our own men, and we believe it very nearly overcomes, if not quite, all the objections that might be made against a case of this kind. The sketch in the upper corner shows how the cover is held in place.

The question might arise, "Why not make the end pieces a little deeper, and grooved out at the top edge so that the whole end will be solid instead of nailing on extra cleats?" First it would increase the cost of the end boards, and, worse yet, there would be danger of splitting off at the grooves; and, second, if the cases were nailed up carelessly the cover might fit badly, and then it would stick. By having the beveled cleats made separate, and held in place by means of nails, we retain all the advantages of the old cover that was nailed on, and yet have a cover that will slide on and off easily. Even if the cover should stick the nails could be drawn as in the old style.

The new case should be nailed up as before, and the two holding cleats and the cover should be put in place. One of the cleats should then be nailed squarely in position. The cover should be pushed toward the nailed cleat, when the other one should be put in place. If it be not crowded too tightly against the cover there will be no sticking nor pinching; indeed, there can't be any.

It will be noted that corrugated or cushion paper has been substituted for the no-drip cleats. Experience shows that many bee-keepers are careless in placing these cleats. A large number don't know what they are for. Sometimes they put them *on top*, and sometimes they leave them out altogether.

The trade is working over more and more to this paper, for all experience shows that honey ships better on it. Its use is obvious, and it can not be put in wrong. It is the same paper that is used around bottles of medicine and all other fragile objects. If it is a good thing to protect glass, it goes without saying that it will prevent a great amount of breakage of combs in shipping-cases.

This kind of corrugated paper was suggested by Mr. J. E. Crane and others some two years ago, and since that time it has been coming more and more into use. Of course, corrugated paper would have to be used in the paper trays to hold any honey that might drip.

We have subjected a case having corrugated paper containing sections, and a case of the same lot of sections having no-drip cleats, to all kinds of rough-and-tumble bumping and dropping. The former stood the treatment much better than the latter. We believe the use of this cushion paper will save a lot of broken comb honey, some unsatisfactory adjustments with the railroad companies, and some bad feeling between the producer and the commission man.

We made up a number of these cases, and sent them out to commission men and honey-dealers in order to get their opinion of the case, and the following are some of their replies:

We are this day in receipt of your letter of the 14th inst. and sample honey-case, with stated contents. The entire package is very pleasing to the eye; and if the cover will work on all cases as on this sample it is certainly a most helpful device. One nail half an inch in length would be quite sufficient to hold the cover in place on the smaller-sized case; ⅜ inch might be sufficient.

As to using the corrugated paper in place of the no-drip cleats, we do not care to give an opinion aside from the fact that it is worth trying. It would have the advantage of not shifting in the case, and any one could be trusted to insert it who could be trusted to do any thing about crating honey.

Chicago, Ill. R. A. BURNETT & CO.

We consider this case far superior to the others, for the simple reason that it will take less time to open it up by simply pulling out the one nail and sliding the cover off, and the same may be said as to closing it again, instead of driving in six or eight nails. One stroke with the hammer will perfect the job here, therefore we think that, as you can furnish this crate at no higher cost than others now in use, bee-keepers should take hold of this and adopt it immediately.

In regard to corrugated paper for the bottom of the crates instead of no-drip cleats, I beg to say that quite a number of prominent bee-keepers have been using it right along. The no-drip cleats would work all right if they were nailed to the bottom of the crate. Most bee-keepers seem to forget this, simply laying them in loose, and then, while the honey is in transit, these narrow pieces of wood slip, and we have found them at times to be all at one end of the crate, thus causing some of the sections of the honey to break down. Even at a slight additional cost we should think the corrugated paper far superior to the no-drip cleats on account of less work, and also on account of not taking any risk of having the combs broken down.

New York, N. Y. HILDRETH & SEGELKEN.

I like the slide part, but I object to corrugated boards, because, to my notion, there is an inconvenience when honey is broken. In packing you would either have to have corrugated boards or strips. If you have no-drip cases, if nailed tight they can easily be washed out. I may be a little wrong, but this is my experience with corrugated boards. C. H. W. WEBER.

Cincinnati, Ohio.

Yours is at hand in reference to new style of shipping-case. The case was received yesterday. We have looked it over, and think it will be received by grocerymen, and others retailing the honey, as an improvement. The sliding cover will be used to keep the honey covered up and away from flies and dust. The other cover would not be used this way as much, as it would be knocked or brushed off from the top, and no time would be taken to replace it. F. A. SALISBURY.

Syracuse, N. Y.

Your letter along with sample of shipping-case is at hand. I am delighted to see the neat appearance, and heartily endorse the improvement of making the cover in one piece with a slide. I would also recommend, beyond question, the corrugated paper, as it is desirable in every way. WM. A. SELSER.

Philadelphia, Pa., July 17.

Your circular letter in regard to the improved shipping-case is received; also the sample case. I would say that I have always been an advocate of corrugated paper for shipping-cases, instead of the no-drip sticks. They are more easily put in place, and, as you say, form a cushion for the sections to rest on. That is no small item. The cover is a step in the right direction — something to retail from, and have a cover that can be put on and taken off at each sale, so there will be "no flies on it."

Remus, Mich., July 21. E. D. TOWNSEND.

The new shipping-case with sliding cover is at hand, and I have examined it very carefully. I am delighted with it, and I think it certainly will take well with the bee-men. As to the corrugated bottoms, I have felt that we were behind the times in not adopting it long ago. I have had honey arrive here in much better shape where the corrugated paper was used. My wishes would be, the sliding cover, corrugated bottoms, and then crate in smaller lots so they can be handled to better advantage; and if the cost increases, I am sure it will be met all right.

Indianapolis, Ind., July 15. WALTER S. POUDER.

## BEE-KEEPING IN AUSTRALIA

### An Interview with the President of the Victoria Apicultural Association.

*Continued from last issue.*

"We have read something about your pollen-famines in Australia; do we understand that your bees die for want of pollen at certain seasons?"

"Yes. Breeding, even in mid-summer, comes sometimes to a complete standstill, owing to a scarcity of pollen. We sometimes have periods in mid-summer when there will be nothing but

eggs in the brood-combs although there may be plenty of honey."

"Do we infer that these eggs do not mature into larvæ for want of pollen?"

"I am of the opinion that eggs are being continually laid to a limited extent, and the older ones being removed by the bees, instead of being supplied with larval food which they can not procure."

"Why do you not feed rye or bean meal, or some of the other artificial substitutes?"

"We have tried all the known substitutes on a large scale; and although we could get a great amount of brood, we could never get a good strong force of field bees, or at any rate no satisfactory yield of honey with bees reared with artificial food. The bees fell away, were short-lived, and consequently they were unable to gather much honey."

F. R. BEUHNE.

"Then you find, do you, that natural pollen furnishes you a stronger and longer-lived bee than any artificial substitute?"

"Yes. But some seasons even the natural pollen appears to be abnormal or deficient in protein; and the bees, in consequence, are short-lived. If this deficient or poor pollen is stored in autumn it means short-lived bees that are reared on it in the fall and in the spring, with the result that the whole colony dwindles to nothing, at a time when it ought to get stronger every day. On one occasion I lost 200 colonies out of 215 from this cause."

"It is possible that this may explain why we bee-keepers in America have severe cases of spring dwindling, even when weather conditions are apparently favorable. While we do not know that we have pollen-famines the same as you have, yet we probably have a scarcity of good pollen or a quantity of poor pollen. I suppose you are prepared to substantiate every statement you have made above?"

"Yes, I am prepared to do so, with some reservations on scientific points. Your readers would be greatly interested in an address delivered by Dr. Thomas Cherry, who is an eminent bacteriologist, and at present Director of the Department of Agriculture of Victoria, Australia."

"How do you prove that the bees in the cases mentioned were short-lived?"

"I tested this point by exposing bees in large queen-cages to the night air, using six cages from a dwindling apiary, and six others from an apiary at a distance, which was in a normal condition."

"Have you ever had your pollen analyzed?"

"Yes; and I have with me reports of analyses of Australian pollen which I intend to submit to Dr. Phillips for comparison with the analyses of American samples."

### THE TWO-QUEEN SYSTEM.

"Mr. Beuhne, have you ever tried raising brood from two queens in one colony?"

"I have."

"Can you keep two queens in a colony without the use of perforated zinc — one queen on either side of it?"

"Yes, I have done so for years."

"How do you do it?"

"I have no difficulty in keeping two queens in any one hive on the same combs provided that one of them is at least two years old."

"Suppose the other queen was also two years old."

"My experience proves that, after a queen has attained a certain age, beginning when about two and a half years old, she is not considered as a rival by any other queen introduced or raised in the hive."

"We may assume from this, then, that two queens can live peaceably in a hive, whether one or both are raised there or not, providing that one of them has arrived at or has nearly reached the supersedure age. Is that correct?"

"Yes, I believe so."

"Do I understand you, Mr. Beuhne, further, that, at the time mentioned, two queens may be be used in a hive, provided both of them are properly introduced, and providing, also, that one of them is not less than two and a half years old?"

"Yes, I believe so, excepting during a honey-famine; and during the winter months the older one will disappear."

"Well, now, Mr. Beuhne, are there any conditions at any time when, in your judgment, it is an advantage to have more than one mother to a colony for the purpose of rearing brood?"

"I have experimented along this line ever since 1893, and have come to the conclusion that there is no practical gain in bees or honey by having two queens in a hive. Early in the spring, spare queens are rarely on hand; and even if such should be the case, a queen can usually lay more eggs at this time of the year than the workers can attend to—the trouble being, not the lack of eggs, but lack of worker forces to take care of them."

"Do you ever consider it an advantage to have a certain number of colonies supplied with two queens to supply certain colonies with only one

F. R. BEUHNE WATCHING THE FLIGHT OF BEES AT A HIVE IN THE HOME YARD IN MEDINA.

queen that may unexpectedly become queenless?"

"Yes. The two-queen system is very useful in such cases; but the principal use to which I put it, and which I consider very important, is the raising and mating of young queens in strong colonies with an old queen, the young laying queen being removed whenever required, and a queen-cell being inserted to repeat the operation; but a virgin should not be in such a hive till at least a week after the removal of the young laying queen. This is very important. The same method may be practiced in nuclei. An old queen continues to supply the eggs for brood while queen-raising is going on."

"We make that a practice in our queen-rearing operations every season. In fact, supersedure colonies are at a premium with us for rearing a large number of fine cells, containing larvæ from our breeder. A queen just beginning to fail is worth more to us for cell-building than ayoung vigorous one that can take care of the needs of a colony without a prospect of another coming on."

"Here too. There has been in my locality a demand for even three-year-old queens, several bee-keepers having obtained such from my apiary for the purpose of introducing them to strong colonies in which to raise queens under the superseding impulse, as in the other case a week being allowed for the bees to become aware of the change in queens."

"How do you succeed, Mr. Beuhne, in getting early drones from a select breeder in sufficient numbers so that all young queens in the early spring will mate with these selected drones?"

"The only satisfactory way I know of is to introduce those queens, from which we desire to raise drones, to strong colonies of black bees during the winter, having supplied such colonies with the necessary drone comb in the right position in the hive. As black bees will breed earlier in the spring than Italians, we obtain our choice drones much earlier than would be possible with even stimulative feeding."

"We find that our Caucasians will breed a hundred drones to the Italians one. Whether the Caucasians would be the equal of the black bees we could not say; but we believe that your suggestion of putting choice Italian breeders into stocks of bees of strains that will rear more drones than Italians, and earlier than Italians, is a good one. Now, Mr. Beuhne, it has been observed by bee-keepers of both continents and both hemispheres, that, where Italians largely predominate through selection in breeding, if the bees are left to themselves, and if there is some black blood in the locality, all the bees in that locality will sooner or later degenerate back into hybrids

or blacks. Do you account for this by the tendency in the blacks to rear drones in larger numbers, and earlier?"

"Yes, I do. In addition, we must bear in mind that blacks are usually allowed their own sweet will in the way of building drone comb. There is also no check on the age of queens. Under these conditions, and the well-known fact that black bees can raise brood at a lower temperature, it is but natural that the race of bees in a given district should gravitate toward the black race. There is another thing in this connection; and that is, that the black bees (and that would include the drones), being less susceptible to cold, would be out in the air more than the yellow bees."

"I notice by the last issue of the *Australian Bee-keeper* (March 15) some illustrations showing the gearless honey-extractor that you are using at your yards—that is to say, you employ two pulleys and a round leather belt, the driving pulley being considerably larger than the driven ones. What advantage has this over the method of using such gears rather than a positive drive that can not slip?"

"I use the belt-driven gear owing to the liability of cog gear to fracture when driven at such a high rate of speed as is required to extract our thick honey, which, as you may know, runs 12 lbs. to the gallon. The slipping is reduced to a minimum by having the large pulley fixed in such a way that it may be lowered at any time to increase the tension of the belt. A little slipping at the beginning, when first started, I consider an advantage, as it will prevent the breaking of new combs. One great advantage of the belt gear is that it is almost noiseless."

"Do you use a flat or a round belt? and if the latter, what is the size of it?"

"I use a round belt ⅜ inch in diameter, such as is used for power-driven sewing-machines."

"How many colonies have you?"

"I have at present 300."

"How far apart are your yards?"

"Four miles and a half in a straight line."

"What are your main sources of honey?"

"Exclusively eucalypts, with the exception of a few plants and shrubs in early spring."

"How does honey from eucalyptus compare with American or European honey?"

"In color it varies to about the same extent. It is of a different flavor, but of a greater density; and I should think, therefore, it would be very useful for manufacturing purposes."

"Have you many unoccupied ranges in Australia not too remote from a market?"

"That is a matter of opinion. All the best bee territory within thirty or forty miles of a railway is pretty well stocked now, but there are immense tracts of native forest yet untouched on account of the distance from railroads."

"Can you estimate approximately the amount of honey that is annually produced in Australia?"

"For the State of Victoria, during the season of 1906 and '7 the number of hives of all kinds was 48,000; and the yield of honey was 3,000,000 lbs., besides 46,000 lbs. of wax. This makes an average of a little over 62 lbs. of honey to the hive."

"What would be your average, Mr. Beuhne, per colony, one year with another?"

"My own average for ten years is slightly over 100 lbs.; but mine is by no means one of the best districts."

## BOTTLING AND PREPARING HONEY FOR MARKET.

BY E. E. COVEYOU.

[The writer of this article, Mr. E. E. Coveyou, who produced 25,000 lbs. of honey this year, is one of the most extensive bottlers of honey in the United States. He has every thing worked down to a fine system to save labor. He has built up a large trade and a big business. His scheme of "rolling" the labels on the bottles and tumblers without touching them is quite unique. The whole article, in fact, is deserving of a careful reading, for he seems to be full of the "tricks of the trade." The best part of it, he is willing to give them to the public.—ED.]

We have always bottled our entire crop, and bought considerable each season. We also make our hives and shipping-cases; and in order to find time to care for our bees we must have some quick method of performing all of the operations connected with the business, and each year we adopt new ways and means of saving time and labor, and giving better results.

### UNPACKING THE GLASSES AND PREPARING FOR WASHING.

Practically all of our tumblers come in barrels, while our jars are in cases. We can save considerable as we make our own cases; but we would advise any one not in position to make them to buy all reshipping-cases.

To do faster and easier work we have 200 trays holding four dozen tumblers each. These are made in the following manner: The sides are of wood 3½ by ⅞ inch. The bottoms are made of galvanized screen, and are held on by means of ½ by ⅞ inch strips. Similar strips are nailed across the bottom every 6 inches to support the screens. The tumblers and glasses are unpacked and placed in these trays. By the way, the trays are provided with hand-holes in the sides and ends, and, with the bottles, they are lowered into the water in the washing-tank, when immediately the glasses are all out of the trays and in the water in less time than it takes to tell it. They are washed, placed back in the trays, and allowed to drain for a few minutes; then they are placed one on top of another on a drier which is heated by steam-pipes. The hot air ascends through the piles of trays, and the moisture is thus carried off.

### LABELING.

Now for the labeling. The first thing is the table. It is a board two feet long and 18 inches wide covered with oilcloth. The table-top itself is pivoted on a shaft, so that it can revolve the same as a piano-stool, only it does not rise or lower except by a set-screw which is conveniently located for adjusting to a height suitable for those doing the labeling.

The labels are piled in bunches of about 500 each. One end of each bunch (the end further away) is pasted the same as a writing-pad. (It would be well to put a piece of mosquito-netting on the ends before or when pasting, as this holds the labels together better should the paste become brittle.)

We now paste from four to six pads of these

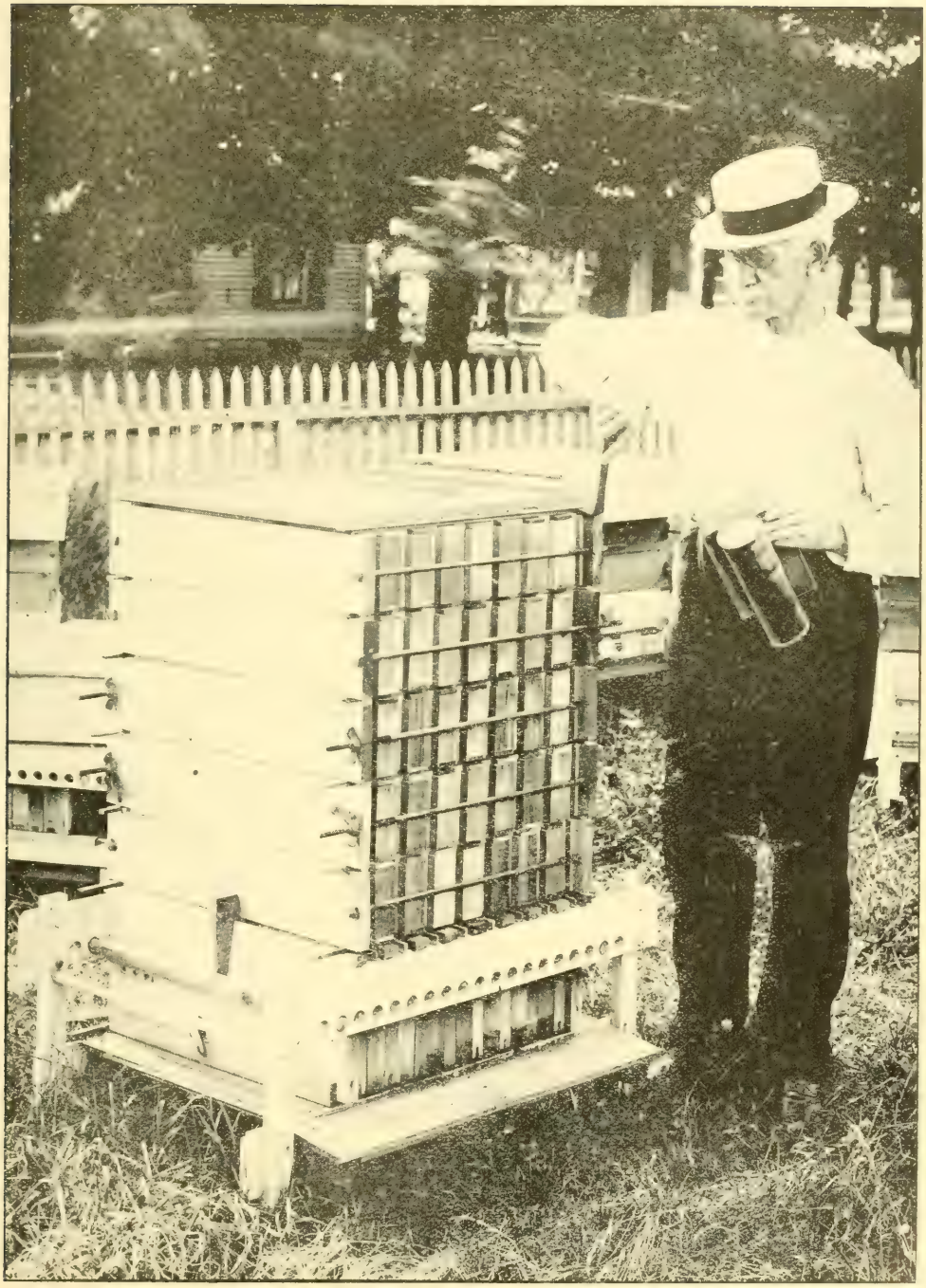


FIG. 1.—MR. ASPINWALL OPENING ONE OF HIS NON-SWARMING SKY-SCRAPERS.

When I visited Mr. Aspinwall I asked him to stand in front of one of the hives in order that our readers might see not only the hive but the inventor as well. He protested somewhat but finally consented, and here he is. He never uses a bee-veil, and says it is not necessary with his hives, because he does not smash any bees, and, what is more, there is no need of it. He has just removed the telescoping cover, and is now proceeding to pry up his honey-board.—ED.

EBRITO'S HONEYSUCKLE ARBOR FOR SHADING THE APIARY. THE HIVES FACE OUT, LEAVING AN AISLE PRACTICALLY FREE FROM BEES.

FIG. 3.—HOW MR. ASPINWALL PUTS ON SUPERS WITHOUT KILLING BEES.

The supers consist mainly of side panels and rods at the ends to produce compression on the panels and section-holders or wide frames. Between each two section-holders is a slatted dummy which at the same time answers the purpose of a fence or ladderway up between the rows of sections. The wide frames have top and bottom bars containing sections with full sheet of foundation, no bottom starters. By carefully examining the illustrations one will see side rails or bee-space strips that are nailed on the side panels. In putting on a super the bees are blown down through the sections with smoke, when the upper side is slid on endwise, riding on two side rails as a sort of railway track. For the next operation see Fig. 4.

he has not yet launched his hive on the public. He desires to test it still further, and then when he does offer it for sale he will leave it without change.

I may say that, while I was at his place, the weather was extremely warm, the thermometer at one time going up to 95 in the shade. Even in the evening it was insufferably hot; but neither in the afternoon nor evening were the bees clustered out in front of the hives. They were all inside, giving off that contented hum that indicates prosperity and that all is well. In some cases Mr. Aspinwall had put two colonies together as one. Then those great barn-like affairs, with their supers, would stand up almost shoulder-high.

At the time of our visit Mr. Aspinwall had secured already something like 2400 lbs. of fine comb honey in plain sections from 23 colonies; and to-day, July 22, I am in receipt of a letter from him saying that the 2400 lbs. had reached 3000, and he hopes to increase this amount very materially before the crop is all in for the season.

There has been no clustering out at any time, nor any swarming, except in one case where he inadvertently violated his own teachings and practices. As the cause was easily ascertainable he feels that the one swarm did not in any way disprove his theory concerning non-swarming.

Mr. Aspinwall has originated a number of useful devices and kinks which I hope to speak of at some future time.

The subjoined illustrations give a general view of the Aspinwall hive and system of manipulation. The double-page picture shows the sky-scrapers, nearly all of which contain sections fully capped over. Mr. A. had deferred taking off the honey because he wished me to see the hives just as they were. He was expecting to take off the filled supers the next day, and put on empty supers, as the bees were still working.

The note of explanation under each engraving will show the detail of management. In order to get the exact construction of the hive itself, one is referred to Gleanings for Nov. 15, last year, page 1441.

In closing, let me make it very clear that *this hive is not for sale yet, and will not be until its inventor has fully perfected it in all its details.*

## SELLING HONEY, AND THE VALUE OF COMPETITION.

### Some Bright Sayings from One Who Has been There.

BY WALTER S. POUDER.

A very large crop of finest quality of honey has been secured this year, and the demand has never been better. The bee-keeper is not a master of his art till he has learned to market his crop successfully, and I fear that quite a few have overlooked the possibilities of establishing a home market, for everybody nowadays is willing to buy a pail or case of honey, especially if he can secure it from the man behind the bees. When the people once learn where a good article can be secured they will not only call for the goods but they will tell their friends and neighbors about it One very important detail is to have the goods always on hand ready to supply those who call; and as honey is in demand the year round it is never necessary to sacrifice the price to hurry off the crop as soon as harvested. Many bee-keepers have a demand for honey which exceeds their supply, and are buying good honey in the open market with which to supply their patrons, and such men are a great benefit to the fraternity because they aid in relieving an overstocked market.

FIG. 5.—HOW MR. ASPINWALL SLIPS THE BEE-SPACING STRIP IN THE END WITHOUT KILLING BEES.

By referring to Fig. 3 one will see that the spaces between the sides of the supers are closed by means of strips of wood nailed on to the side panels, and which at the same time answer the purpose of a sort of railway track on which the supers may be slid on and off. When one super is clear over, the other spaces at the ends are closed up with an end strip or stop. If there were any bees in the way they would be pushed out.

The bee-keeper is the best-qualified man in all the world to act as a honey-salesman, because he is prepared at all times to meet any argument that may be brought before him. If he is steady, and adheres strictly to handling best grades of honey, his business opportunity is almost unlimited. When business begins to come his way, about the first thing to worry him will be the discovery of a competitor in his field. This, however, should not worry him at all; for the more the business is agitated the greater will be the demand; and any successful business must have its competition and its imitators. Why, even our wiener-wurst peddler on the street corner, a man with a heavy bass voice, discovered a competitor across the street with almost no voice at all, and every time the strong man shouted "Wiener-wurst, red hot," the weak man with the tenor voice would cry out, "Same here!"

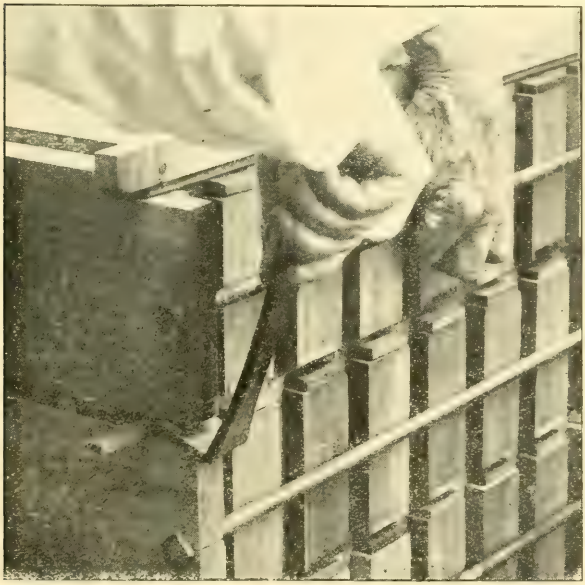


FIG. 4.—MANNER OF PRYING THE ASPINWALL SUPERS APART.

Mr. Aspinwall uses a hive-tool of his own invention which is very similar to the Root steel tool. The end is bent over in the shape of a hoe, and sharpened to a scraping edge. In separating the supers Mr. Aspinwall uses the tool in the manner here shown. The open spaces in the panels make this particularly easy.

This is a great country, and there is plenty of room for all; but if your competitor tries to increase his profits by putting out inferior honey, or if he spends his time in trying to build up his goods by belittling yours, he is simply uncoiling a rope with which to hang himself.

In looking over the past it can be seen that the most successful honey-salesmen are those who sell direct to consumers. Selling bottled honey to the grocery trade seems to be a side line that has fallen into the hands of supply-dealers. Whether a bottler of honey can pay traveling expenses and hotel bills, and handle

only the one line, remains yet to be successfully demonstrated. Successful bottlers of honey are aided largely by jobbing houses, such as wholesale grocers, where traveling men carry a large variety of samples.

Within the last decade I have seen a number of bottlers of honey apparently establish a large and successful business, but there seemed to be a turning-point where the business died down as fast as it had built up. The reason was that they attempted to increase their profits by decreasing the quality, and the public will not stand it. When bottlers begin putting up honey that is unfit for table use they are doing a great injury to the business, and yet it seems that the temptation is almost irresistible with many, and the successful bottlers of honey can be counted on the fingers of one hand to-day.

Consumers are willing to try a new brand of honey; and if it is good, and has merit, they will call for more; if inferior, they are not likely to want any more honey at all.

Indianapolis, Ind., July 28.

[If one does only a honey-bottling business and buys all his honey, the chances are he will fail; but if he is a bee-keeper and produces a large part of the honey he bottles, he will have a fair chance of success, providing, of course, he is something of a salesman and is careful to get no bad accounts. Our correspondent has given some very helpful hints from a ripe experience. Some of his sayings are bright and pithy, to say the least. —ED.]

## SELLING HONEY IN MASON JARS.

### How to Retail Honey in Cities; a Form of Advertising where the Results are Immediate.

BY H. H. ROOT.

On page 562, May 1, Mr. M. D. Tyler, of Seville, Ohio, was referred to as a veteran honey-salesman, and he is indeed a veteran, for his experience began more than half a century ago. The secret of his success is his natural ability to win sales. He says, "I never saw a thing yet that I couldn't sell." Any man can sell any thing to a purchaser who is eager to buy; but it takes a good salesman and a good talker to sell an article where it is not wanted. Mr. Tyler will make a man who thought he did not like honey wonder how he ever got along without it.

If a bee-keeper sells his honey to grocers, he will be very shortsighted indeed if he turns around and peddles more honey among the grocers' own customers; but there are many who do their own retailing in order to get a better price. After a retail business is established, much less "talking" is required to keep it going; but a glimpse of some of Mr. Tyler's methods may help some one to make a start.

In the first place, all of the extracted honey is put up in one-quart Mason jars, and sold for 50 cents each. This makes the selling price practically 15 cents a pounds, allowing 5 cents for the jar. For extracted honey, that is, of course, very good; but it must be remembered that the traveling expenses must be deducted, so that the amount finally received would not be so much more than a good average price. If a customer wishes a quantity of honey he is given eleven quarts for $5.00.

In the wagon shown in the engraving Mr. Tyler travels and carries his honey. He has recently purchased a new wagon that is larger than this first one, though made on the same plan. The carrying-box is divided into an upper and lower part, the floor of the latter being movable to make it more convenient to reach the jars. The upper half is divided into rows to prevent breakage.

Mr. Tyler visits all of the neighboring towns and cities, but makes no effort to sell in the country, for he has found that the little he could dispose of in that way would not pay him for the longer time taken. Neither does he try to sell any honey at the houses in the towns and cities. When asked why, he said, "Well, it takes the women folks so long to decide whether they want

M. D. TYLER, OF SEVILLE, OHIO, A BORN HONEY-SALESMAN.

any; and if they do buy some, they take only one jar, and then send me down town to their husbands for the money, so I just go to the men in the first place. I like to deal with them better, anyway."

He stops at every shop and store, with the exception, possibly, of the groceries, and begins to talk whenever he can get a crowd around him, for he has found that he invariably makes sales when he can get into an argument. He explains how the honey is extracted, tells about the bees, and gets his hearers so interested that they soon begin to want some honey. When one sale is made, others follow quickly. He says that he talks fifteen minutes sometimes before trying to

sell any, and then gives every one as much as he wants to eat. After that, some one buys a jar, and all the rest do the same. In one shop in Akron he recently sold 22 jars, and in a large dry-goods-store near by, 24. On that trip he sold 1300 pounds in about three days. It is seldom that a store is entered where no one wants to buy. The bankers and merchants are always good customers. At one time he disposed of twelve jars in a police station. On the next trip every one is glad to see him, for all want more honey. On being asked how much honey he sold in a season he said that it would average about five tons. It is only recently, however, that he has been making a business of selling on a large scale.

TYLER'S WAGON FOR RETAILING HONEY.

Not every producer can sell honey profitably. One without the natural ability to make sales might go over the same territory, and not sell enough to pay the traveling expenses. Mr. Tyler simply shows what can be done along the line of retailing honey in cities. It can not be doubted that the grocers are slighted; but at the same time, in too many instances, the grocers make but meager efforts to advertise or sell the honey which they have in stock. It is possible to stir up the honey trade by the methods here outlined, and, by referring all further inquiries to the grocer, get his co-operation.

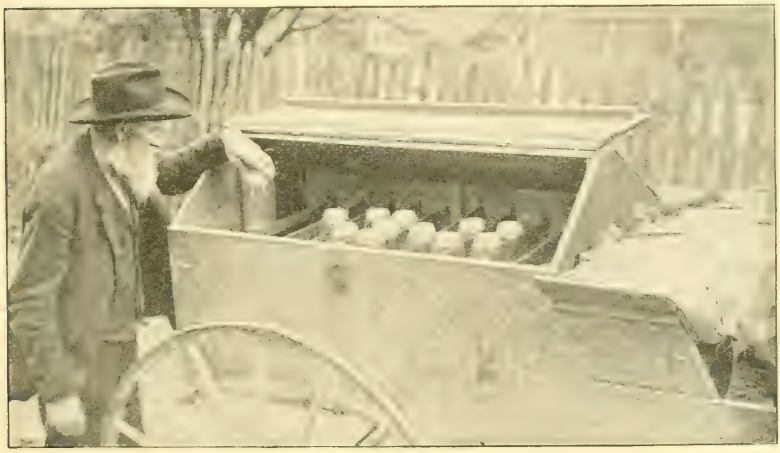
## PACKING COMB HONEY.

### A Moisture-proof Honey-carton; How to Pack the Sections so that they are Free from Dust and Flies.

BY H. F. MELLEN.

We believe that the public has a right to the very best honey in the market. Comb honey is a luxury first; but it becomes a necessity when an appetite has been cultivated for a first-class article.

No honey, however fine when taken from the hive, can be called first class after being tumbled around in an unprotected condition for several months; and the only way to protect it properly is to seal each comb in an individual carton. All honey, but comb honey especially, is greatly injured in both flavor



TYLER'S WAGON FOR RETAILING HONEY.

and body, by the absorption of moisture from the air; hence a wrapper of paraffine paper is necessary.

There is no more reason why a grocer should show a comb of honey to his customer than that he should open canned goods, break eggs, or tear open the soap-wrappers or raisins carton to exhibit the contents to an intending purchaser. The name upon the goods should be a guarantee to both the grocer and customer.

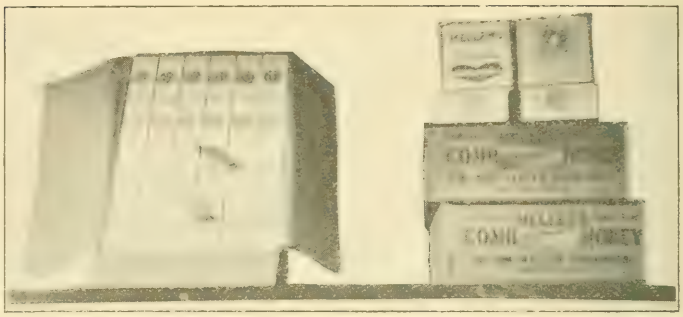


FIG. 2.—COMB HONEY IN CARTONS PACKED IN SHIPPING-CASES.

The grocer handling our honey last season found no trouble in disposing of it without allowing customers to inspect it, and he summed up the matter pretty fully by saying, "I don't care a fig whether the people can see the goods; what I want is an article that, when eaten, sends a customer back for more." If a dealer has once had *first-class* goods put up in an attractive way by the apiarist, little trouble will be experienced in inducing him to buy again. *Inferior* goods, though put up in the finest style, not only injure others but surely ruin the producer.

The accompanying photos show our honey and cartons in the several acts of packing. Fig. 1 shows some of the cartons in the flat, leaning against the wall on the shelf. Just below, and to the front, are the forms upon which they are made up. On the form to the right (shown at the left of the picture) is a lead weight placed upon a carton just pasted, to hold it in place while setting This weight is moved to the other form when the second carton is ready, and the first carton is then thrown to the packer. Library paste is used, which sets as fast as the cartons can be folded. To the right can be seen a couple of sections, one about to be wrapped in paraffine paper, and the other wrapped and ready to slip into a carton. The cartons containing honey ready to be sealed and placed in the case are shown at the right.

Fig. 2 shows a case of honey packed ready for the cover, and also a couple of cases with some packed cartons of honey on top.

There are many good features of this package. First, its moisture-proof paraffine inner wrapper; second, the plain marking of the grade of each package upon the top, which is done with small rubber stamp, thus—"Fancy Amber," "Fancy White," "A 1 Amber," etc. Upon the bottom of each carton is stamped the private mark of the individual packer, so that the dealer can fix the blame, if any. Third, the neat protecting carton, which seals and protects the honey, not only from moisture but from flies, dust, and germs, and the desecrating hands of all clumsy handlers. These features are set forth to the customer in a neat little paragraph upon the sides of the cartons.

Acton, Cal.

[Canned goods, soap, etc., are uniform as to quality and quantity, and there is nothing gained by examining each package. *If honey is properly graded* a customer would not need to see each section before buying. But as honey does vary, especially from one grade to another, there may be some excuse for showing it. Fancy white comb honey sells itself.—Ed.]

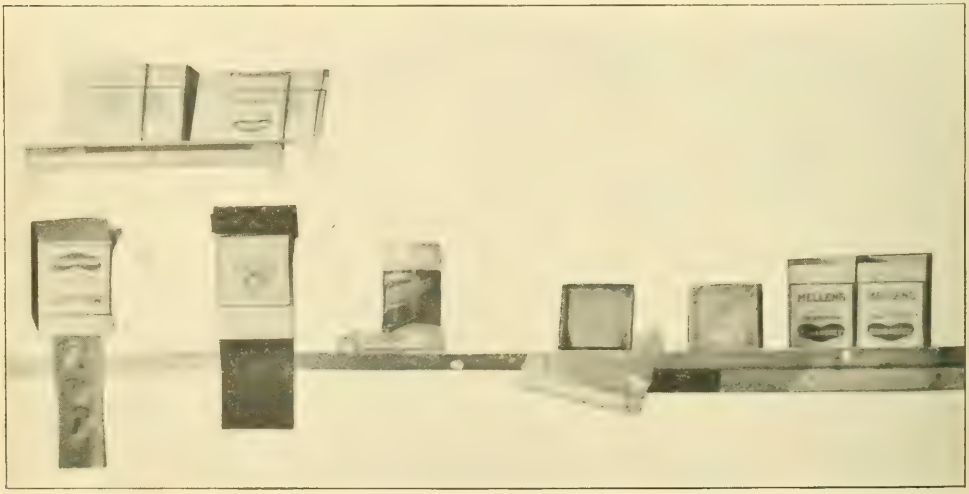


FIG. 1.—MELLEN'S METHOD OF FOLDING CARTONS AND WRAPPING SECTIONS IN PARAFFINE PAPER.

## PREPARING COMB HONEY FOR MARKET.

### The Importance of Scraping Sections and Sandpapering Shipping-cases; Some Wholesome Advice from One who has Had a Large Experience.

BY DR. C. C. MILLER.

When a nice section of honey lies on a plate on the table, what does it matter what kind of case contained it when it stood in the grocery? Does the eater stop to inquire whether the wooden section tnat contained the comb was neat and clean, or whether it was well covered with bee-glue? Of course not. But because it makes no difference after it's on the table, don't you fool yourself into thinking it makes no difference before it gets there.

Suppose two cases of honey stand side by side in a grocery. One of the cases shows signs of travel and previous use, and even in its palmiest days it was never a very neat affair. The other is neat and clean—same difference in sections. Those in the one case have been nicely cleaned of all glue; in the other case, the sections are just as the bees left them, and are plentifully daubed with glue. The average customer, upon being told that there is a difference of 2 cents per section in the price, nothing being said about comparative quality, will very likely elect to pay the extra 2 cents. If the grocer says, "The honey itself is just as good in one case as in the other," some will choose the honey at the lower price; but some will say, "It may be so, but every thing about this case looks so neat and dainty that it must be a little cleaner than the other, and likely just a little better." But the grocer himself is likely to be impressed with the opinion that there is really greater value in one case than the other, and that opinion affects him, both in buying and selling, and so from first to last this case of honey, "just as good as the other," is handicapped by its appearance.

Even if the difference be only a cent a pound, it will cost you only a fraction of a cent to have the better class, and the remaining fraction of a cent makes quite a tidy sum when your crop is large. Besides, if the outside appearance in the grocery is inviting, many will be tempted to buy who would be repelled by something less attractive.

You can save a little on shipping-cases by having a narrower strip of glass, but it is poor economy. Either on the grocer's counter or piled up in the wholesale room, the more glass the finer the honey looks. But there is no advantage in having glass on two sides, as only one side can be seen at a time.

To a bee-keeper there is nothing repulsive in the appearace of bee-glue, but to the average consumer there is; so, don't send any bee-glue to market. Your supers may be of such character that the section is mostly covered, but hardly entirely; and wherever the bees have a chance they are likely to squeeze in at least some glue—the later in the season, the more glue. Perhaps your supers allow the bees free access to tops, or to both tops and bottoms. In that case make a wholesale job. Wedge the sections into a frame a little less in depth than the depth of the sections. Take a cabinet scraper and give the surface a good scraping. Then take No. 2 sandpaper and sandpaper down till the whole surface of the wood is entirely new and clean. Wonderful what a change you can make! The superful of sections, while you are doing this work, should be standing on a board as large as or a little larger than the size of your super. When you have finished cleaning that surface, lay a similar board on top; turn the whole business upside down, and clean the other side. Then with a caseknife kept pretty sharp clean off the edges of each section, resting the section on a block perhaps the size of a section.

Don't lose money by false grading. Let the sections that are next the glass in the shipping-case be a fair sample of the whole case. But you are allowed to put the best side out of the sections that are next the glass, just as the best side of a section will be uppermost on the table.

If your bees have stored first-class honey you may as well have every thing in first-class shape and get first-class prices. Keep that up for a few years, and you will have no trouble in finding a market, perhaps getting into that class whose honey is sold before it is taken from the hives.

Marengo, Ill.

[Here is some good wholesome advice, and we hope the small producer, at least, will cut it out, even if he does mutilate his journal, and paste it in his hat or on his honey-house door.

It is a lamentable fact, and almost an outrage, that so much comb honey goes on the market without either scraping or grading, and in cases that are either soiled or homemade. Oh the penny-wise-and-pound-foolish policies we see among some bee-keepers! Why do they hold their noses on the grindstone? Why do they throw away dollars and dollars when a few cents' worth of time would save them? If they would heed this good advice of Dr. Miller, they could save a fine profit which they now lose. As it is, they bring down the prices of all honey.

In talking with a honey-dealer the other day we asked him what percentage of the honey came in scraped and graded. His answer was, after some little reflection, "Sixty per cent of the fancy and only about 20 per cent of the No. 1." Just think of it, brother bee-keepers! Do you belong to the class of the 80 per cent who think it does not pay to scrape and grade your honey before shipping to market? And you who propose to put up a fancy article, do you belong to the 40 per cent who neither scrape nor grade?

You may say that a "fancy" honey is a graded product. It ought to be, surely; but in the goods marked "fancy," the dealers tell us they often find No. 1 and 2, all in the same case. Such shiftlessness, or, perhaps, we better say *dishonesty*, is enough to make one cry if it would do any good.

It is assumed, of course, that the readers of bee-journals do not belong to the class who do not scrape or grade their honey; and the unfortunate thing about it is that our scolding does not hit them. Those people can not afford to take a bee-journal, and have not time to fix up their honey so as to make it sell—"any old case will do;" and if the sections were on the hive last season, all covered with stain and propolis, "they

are good enough" for this year. It is these same people who will cobble up a shipping-case of their own, out of drygoods-boxes. Oh, no! they can not afford to send away and get good cases; but they can afford to lose several cents per pound on their honey. No, they will sell at any old price simply because they are not keeping posted as to the markets.

We have almost a mind to have this article of Dr. Miller's set up in the form of a leaflet, and send it out with each package of sections and shipping-cases. Shall we do it?—ED.]

## GRADING AND PACKING COMB HONEY.

### The Importance of Having all Honey a Little Above Grade; How to Tell Whether the Grading is Properly Done.

BY WESLEY FOSTER.

The honey-producer who is going to make a success of his business in the future will be imbued with the spirit of mutual benefit. He will be filled with the knowledge and feeling that he is giving more value than he is paid for. It may be foolish to put No. 1 honey on the market as No. 2, but that is a deal more honorable than to have the honey always just a little below grade. Why not have comb honey just a little above grade, so the buyer will be sure to get the honey *at grade*, for honey does drip and deteriorate somewhat in shipping?

When every case of No. 1 white and No. 1 light-amber comb honey is as even in quality and as neatly put up as a box of bon-bons, don't you think the honey-producer will be recognized as a person of quality? The quality bee-keeper makes kindling-wood of his leaky covers and uses the gunny sacks for smoker fuel instead of for blankets on his supers; neither does he allow the mice to scallop his sections.

The grading-rules do not forbid putting a section gnawed by mice in a No. 1 or No. 2 case; but it is not good practice. The rules can not mention every catastrophe that would bar a section from the given grade. I would not care to buy a box of crackers with a mouse-hole in one corner. The rules do not forbid a section with a part broken off or an imperfectly folded section, or one diamond-shaped; but if the grader is not a conscience-juggler he will at least bar these from the No. 1 grades. His judgment will decide whether sections of this class should be No. 2 or culls.

At a bee convention, when the subject of grading comb honey was under discussion, I saw illustrated just how a No. 1 section should look to come well within the grade, and just where the dividing line between No. 1 and No. 2 is. One bee-keeper who had difficulty in distinguishing between a slight and a pronounced tinge in comb color, and manifested an unwillingness to try to see the difference in light amber and white in the color of the honey, asked an experienced bee-keeper and shipper of comb honey what rules he followed. He said he put himself in the buyer's place and then followed the rules, pushing the faculty of fine discrimination to the limit. One can soon find out whether he has been using fine discrimination by going to a pile of honey if he has some from the best to the poorest, and picking out combs of the whitest honey, then slightly amber, light amber, and amber of a pronounced color. If he can mark these and then mix them up and separate them the second time, and get them into the same arrangement as at first, he may be sure he has the discriminating faculty. The greatest trouble comes with me when trying to tell slightly amber from light amber.

Now, many get the color of the honey and the color of the cappings mixed; or, rather, they do not discriminate. Cappings may be white over an amber honey, or they may be dark over a white honey.

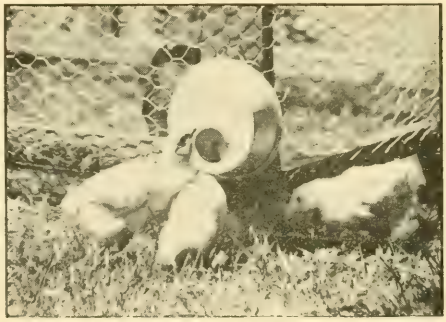
The committee on grading-rules for the Colorado State Bee-keepers' Association, when they came to describing the color limits for cappings to No. 1 light amber, first wrote it this way: "Comb and cappings white to grayish or light-brown tinge;" but upon consideration they changed it to read, "White to off color, but not dark." The reason for changing was that some would construe that light-brown tinge to include dark cappings, which would not come up to the name of light-amber comb honey. Now get this firmly fixed in your mind. You must, to do the best grading, carry these two items in mind—color of comb and cappings, and color of honey. They must not be mixed in the grader's mind. He must look for color of honey and color of comb in each section.

No. 1 white comb honey. The honey must be white or *slightly amber*, while the comb and cappings must be white with no slightly any thing to it.

As for No. 1 light-amber comb honey, the honey may be white or light amber, while the comb and cappings may be from white to off color, but not dark.

The grader who discriminates the slightly amber honey of the No. 1 white grade from the light-amber honey of the No. 1 light-amber grade is getting his work down to an art. The line between white comb and cappings of the No. 1 white and the "white to off color, but not dark" of the No. 1 light amber is not so difficult.

Some disagree as to where off color runs into dark which should



WATERING-DEVICE FOR LITTLE CHICKS.
*See Poultry Department.*

go into No. 2 grade. The ideas of grayish to a light-brown tinge may help some here. Remember, though, a light-brown tinge is not light brown, for a light brown on a comb of honey is dark.

When ready to start packing comb honey, I get a boy to nail the cases so they do not lie around more than a day or so to gather dust and fly-specks. Nails for the drip-sticks are not as satisfactory as a little thick honey. The nails will sometimes come through. In packing, the cases are set on a bench so the top of the cases comes to the top of the table on which the honey is piled.

The scrapers have the scraping-box on the opposite side of the table from the grader, so there is no danger of scrapings getting into the cases of honey. The grade is marked on the case before the cover is nailed on, and before the honey gets to the pile. A plane is kept close by to plane off any extra wood from either the bottom or cover of the case.

In piling the honey in the storage-room it is best to pile the face out, so if any flies get in the cases they can be let out by pulling a nail and sliding the glass. And then I like to look my honey in the face several times before selling. The time spent in admiring a pile of white comb honey is not wasted—it's a very profitable task; 'twill keep one always on the alert for better methods in producing a *de luxe* article.

The recommendation supplementing the Colorado State Bee-keepers' Association grading-rules embody some of my ideas on grading and packing comb honey, as I was one of the committee; and what the committee says I should like to add to this article.

### REMOVING AND HANDLING FILLED SUPERS.

Comb honey should be taken off as soon as completely capped; no more smoke than necessary should be used, and the smoker kept well filled with fuel so no ashes will blow out and spot the cappings. If finished supers are stored in the honey-house, one or several sheets of newspaper should be used between supers to catch any possible drip and keep out dust and ants.

### NAILING AND MARKING CASES.

Cases should be well nailed with cement-coated nails, and glasses perfectly clean. If edges of covers and bottoms project they should be planed off; if this is not done, many boards will split in shipping. The whitest and smoothest boards should be reserved for covers, and the others used for bottoms. The paper tray in the bottom should be evenly folded, and drip-sticks secured in their proper places by the use of a little glue or thick honey on their under side. Nail cover on firmly when the case is filled. The mark of the grade of honey should be put into both hand-holes of the case: × stands for No. 1 white; one dash for No. 1 light amber; two dashes for No. 2. The marking of filled cases should be done before they go to the storage-pile. Second-hand cases should be used only for the casing of cull honey—never for the shipping-grades.

### CLEANING AND CASING HONEY.

This work must be done in a well-lighted place, and a large bench or table provided for it. The shipping-cases to receive the honey should be placed so as to face the packer, and should be arranged so no propolis from scraping will fly into them. It is desirable to have several cases for each grade on the bench, so that honey of the same shade and finish may go in the same case. A definite place should always be used for each grade, to avoid errors in casing.

An accurate spring scale should be handy to weigh doubtful sections.

The practice of piling honey on the bench before casing is not recommended, as honey is more subject to injury, and time is lost in casing. It is desirable that the packer have a copy of the grading-rules hung up before him for ready reference; and where this work is entrusted to others, the apiarist should provide specimen sections representing the poorest of each respective grade, and give strict orders that any thing inferior to these samples must go in the next grade below.

The face of each case should be of uniform color and finish, and truly represent the contents of the case.

Cull honey is composed of the following:

Honey in badly stained sections caused by leaky covers.

Honey that shows signs of granulation. Sections that are leaking, or whose cappings are injured.

Sections that are fairly well capped, but have more than 25 open cells.

Sections that are capped, but weigh less than 12 ounces.

All cull honey should be marketed around home, or rendered.

### HAULING OF COMB HONEY.

The proper time to haul and ship comb honey is while the weather is still warm, therefore no time should be lost in getting the crop ready. In hauling by wagon it is desirable to provide springs for the wagon-bed; and if these can not be had, a layer of three or four inches of straw should be used in the wagon. On top of this should be spread a canvas or large wagon-cover, in such a way that, after the wagon is fully loaded, the canvas will fold over the top of the load, thoroughly protecting the honey from dust or a possible shower.

The bed of a regular farm-wagon will take 98 cases of honey. A good steady team and careful driver are required to haul comb honey safely.

Boulder, Colo.

[In a letter in connection with this article Mr. Foster explains that all his packing is done according to the rules of the Colorado State Bee-keepers' Association. He believes that those rules are valuable, especially if the time and thought of experts are worth any thing. He says, "We have fought and jawed and voted in committee and on the floor of the convention over these rules."—ED.]

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### A WARNING.

UNDER the national pure-food law, perhaps we may remind some producers that they are rendering themselves liable to Uncle Sam if they sell amber honey for white clover, or, in fact, misrepresent the source of any honey on an interstate deal.

## SPACING BROOD-FRAMES WIDER APART FOR WINTER.

BY E. N. WOODWARD.

I am not aware that I have ever read or seen an article in any of the bee-magazines on this subject. If the question has been a topic of discussion, and if bee-keepers, accordingly, have adopted 1⅜ spacing as being at all times correct, then I think it would be well to reopen the question for further consideration.

The severe losses during the winter and spring, with now and then an exception, prove that the successful wintering of bees is still one of the most important questions. If I were to look over the back numbers of the different bee-magazines and quote from editorials or from different contributors on the subject, a large percentage of loss would be shown even among those who claim to be expert in the general management of bees. If I were to report from my own locality (Southern Michigan) I would say that ten per cent loss is not a high estimate, as it averages from year to year. The question presents itself, then, "How can this severe winter loss be avoided?"

I am writing this from an outdoor-wintering standpoint, and I wish to say that, according to my experience, we are spacing our frames too closely for the successful wintering of bees in this northern climate, so I am trying to work out the solution along lines that are more practical and which are more in harmony with the general law of all insect life.

Every one will agree with me when I say that an isolated bee is of no account. It is equally true that a thin spreading of bees sandwiched in between two closely spaced frames are of very little account. To confine them thus for a long time, with a winter temperature outside, deprives them of their vitality and their moving power. It is not giving them a "square deal." Martyrs they are to our misconception of what is essential to their comfort and to their very existence. I hold that each separate sectional cluster between the frames should be strong enough to maintain and impart a sufficient degree of warmth and vital force to make this cluster a community of itself. This enables them to cover their brood and build up stronger in the spring, and the trouble of spring dwindling is not even thought of.

Now, to carry out this community law I propose to space my frames not less than 1½ inches from center. In other words, I space equally the eight frames in the standard eight-frame hive with no dummy. To my mind it is clear that bees will winter in a more natural and healthy condition if they are given even this extra room to cluster in larger bulk. This larger cluster closely packed enables them to hold their normal temperature, and gives them the power to generate and impart one to another their collected store of animal heat and health-giving odor, even to the outside limit of the hive; and thus they live and thrive the entire winter and spring.

I have no word to say against cellar wintering. I prefer to winter my bees in outdoor winter cases; and, if properly packed, I have no anxiety in regard to them. However cold it may be when the opening bud and the warm sun shall tell us that spring has come, I expect them all to respond to the roll-call. I have not adopted this plan or come to these conclusions without a reason.

My neighbor across the way is a bee-keeper in a small way, and packs his bees in winter cases following my plan, and they are sure to come out bright and healthy in the spring. His Hoffman frames have become so thoroughly propolized and enlarged that seven of them will nearly fill his eight-frame hive, and they go into winter quarters in this spread condition. When I used to space my frames more closely and lose more or less of them during the winter and spring, his would come out bright and strong.

Another bee-man near me, so-called, makes his own frames out of common lath pieces, and spaces them 1¾ inches. He has no protection whatever. The northwest wind sweeps along the hillside with a temperature often below zero, yet his winter losses are not worth counting. Now, if spreading the brood-frames is not the secret of this uniformly good wintering, will some wise bee-keeper stand up and enlighten us on this most important question?

Hillsdale, Mich.

[Some fifteen or twenty years ago it was the common practice to spread the frames toward the approach of winter for the outdoor colonies, as it was argued that the bees needed more clustering room between the frames. In short, precisely the same arguments were advanced that you present. Finally some began to say that there was no advantage—that just as good results would be secured with the summer spacing of 1⅜ inches from center to center. Gradually nearly every one, including ourselves, left the same spacing the year round. We tried both ways—about 15 years with the wider spacing for winter, and for the last 20 years we have been using the summer spacing. There has been no appreciable difference in the results, so we concluded that there was nothing gained, and, if we are correct, that was the conclusion arrived at by nearly every one. The point is, there is *practically* no difference between 1⅜ and 1½ inches that you advocate. Or, to put it another way, the difference is too small to affect the actual result. The difference to which you refer must be due to some other cause.—ED.

## A PLEA FOR BETTER QUEENS.

BY J. E. HAND.

I noticed in GLEANINGS for Oct. 15, 1907, that Dr. Miller quotes Rev. Mr. Luger, *Deutsche Bienenzucht*, as saying that "the masterpiece of bee culture is *not* wintering nor yet springing, but queen culture." Now, that strikes me as being about the most common-sense statement that I have heard for a long time; and while the editor's remark, that one is about as important as the other, seems quite reasonable, yet when we consider what the queen is to a colony of bees, and how much is written upon subjects of comparatively minor importance, and how *little* is written upon the subject of queen culture, we can not but acknowledge the wisdom of our German

brother's statement. The queen is the very mainspring of the existence of a colony of bees; and, aside from this, the exact relation of the queen to successful comb-honey production is not generally understood, even by so-called expert honey-producers. Therefore the subject of queen culture is of vastly more importance to the honey-producer at *this* time than all other subjects combined. It is a fact greatly to be deplored that this most important branch of apiculture is the most neglected of all; and it is no less true that most of the so-called improved methods of modern queen-rearing in vogue in this country at the present time (some of them even claiming to be scientific works) are the bane of modern apiculture, and a direct menace to the interests of our beloved pursuit, bee-keeping. It is a deplorable fact that at least half the queens that are reared by these alleged scientific methods are actually not worth the time required to pinch their heads. What the bee-keepers of this country need to-day is a better knowledge of the true relation of the queen to successful apiculture. There is something of vastly more importance, especially to the producer of comb honey, than merely having any old queen in each colony of bees; for if the queen lags or fails to do *her* duty during the honey-flow, the bees will quickly take advantage of the fact to fill the brood-chamber with honey, to the utter neglect of the supers; while with a vigorous and prolific queen the brood-chamber would have been held for brood, and practically all the honey would be forced into the sections.

For many years bee-keepers have wondered why it was that certain colonies in the apiary would far outstrip others of equal strength, and which, so far as *they* could see, were in as good condition to store honey as were the others. This condition of things has become so common in our present loose methods of allowing the bees to re-queen themselves at the expense of the honey crop that some of our best bee-keepers of to-day count upon having ten to fifteen per cent of their colonies practically unproductive; and, judging by my experience along this line in the production of comb honey, the per cent of unproductive colonies would be much greater than the above. With proper attention to the *queen* part of apiculture there is no more excuse for the up-to-date progressive honey-producer to allow a part of his *apiary* to become unproductive than there is for the farmer to allow a part of his farm to become unproductive through neglect and failure to attend to his business.

One noticeable feature about the writings of those bee-keepers who advocate the wasteful, shipshod, unbusinesslike methods above mentioned is that they never attempt to explain *why* it is necessary to keep a lot of no-account colonies; and we must, therefore, conclude that there is no *cause* for such a condition, and attribute it to *luck*. Well, I should think it would be mighty hard luck for the bee-keeper who would tolerate such a condition in his apiary. What the bee-keeper and the farmer of to-day need is not more bees and more land and shipshod go-as-you-please methods, but a better knowledge of how to secure best results from what they now have; and when they have brought their present farm or apiary up to its highest state of productiveness, then, and not before, is the time to invest in more bees and more land.

It is about time some of the old threadbare theories were exploded, and that bee-keeping as a pursuit should take advanced ground.

I shall have more to say upon the subject of queen-rearing and queen introduction and manipulation; and in conclusion I wish to join hands with our German brothers in the statement that queen culture and a better understanding of the true relation of the queen to successful comb-honey production are the *sine qua non* in successful bee-keeping.

If I am not mistaken, it was W. Z. Hutchinson who, several years ago, made the remark that, other things being equal, one queen is as good as another; and that statement has been sticking in my crop ever since, and somehow it still refuses to go down; but I hardly think Mr. H. would consider the statement as orthodox at the present time.

Nov. 24, 1907.

[The statement that "it is no less true that most of the so-called improved methods of modern queen-rearing in vogue in this country at the present time, some of them even claiming to be scientific works, are the bane of modern bee culture, and a direct menace to the interests of our beloved pursuit," is, it seems to us, wide of the truth. We will admit that but little progress has been made in the improvement of stock; but that half the queens reared "by the aid of scientific methods are actually not worth the time required to pinch their heads off" is both unjust and severe. Doolittle's book is named "Scientific Queen-rearing;" and if ever a writer made a plea for stronger and better queens it is Doolittle. It is he who placed strong emphasis on the rearing of queens at a time when bees would feed the cells most lavishly; and yet, according to the author of the above, this book seems to be principally singled out. We will admit that a lot of poor queens are sent out; but they do not come from our best dealers who have had years of practical experience. We have too much confidence in the ability of our old queen-breeders to think otherwise; but our correspondent, for all his strictures on American queen-rearing, makes a good point when he discusses the true relation of queens to successful bee culture; and we commend that portion of his article, at least, to the careful consideration of our bee-keepers who keep bees because of the bread and butter they can and do earn.—Ed.]

## WAX-RENDERING.

### How to Convert a Steam Wax-press into a Superior Hot-water Press.

BY F. W. LESSER.

For several years I have been using a Root steam wax-press as a hot-water press, and have been very much pleased with the results, both in the amount of wax secured and the speed with which it was obtained. I frequently render 100 lbs. and over in a day from old combs. To convert the steam-press into a hot-water press, all that is necessary to do is to solder a piece of tin over

the place for putting in water, and provide a tight-fitting cork for the outlet. Or a gate or valve can be soldered on.

To make the press several times the capacity of the one-cheese press, about eight division-boards are needed between the different cheeses, as six or eight cheeses are pressed at one operation. These boards should be nearly as large in diameter as the inside of the press (discard the wire-cloth basket, as it will tear the bags), and made of ⅜-inch wood with ⅜-inch-square slats nailed on one side ½ inch apart, and these covered with ¼-inch-mesh galvanized wire cloth. Eight burlap bags one foot wide and 18 inches long are also needed.

In operating I use an old cook-stove in the cellar. This is large enough to hold both the press and a large wash-boiler in which the combs are melted. A hot fire is needed, and the refuse pressed. Slumgum, when a little dried, together with wood, makes a hot fire.

To fill the press, first put in a division-board (a plain board will do for the bottom of the press); then a bag of melted comb; then a division-board, slat side *down*, and so on until the press is full, when pressure is applied, a little at a time, until the next batch is ready, and until you have applied all the pressure you think it is safe to subject the press to. If necessary, pour in hot water enough to bring the wax above the top cheese, where it can be easily dipped off with a ladle.

In filling the bags with the melted glumgum, hook one side over the projection on the top edge of the press. In this way it is easily held open and the slumgum dipped in. Four to six quarts is about the right quantity for a cheese. Then it is let down in the press, and the top given a twist.

When it is thought that the refuse has been pressed sufficiently, all the wax is dipped off the top and the water drawn off into a tub. Then the screw is released and the cheeses taken out and emptied for the next lot. A bent wire hook is used to get the cheeses out of the press.

You will be surprised at the very small amount of wax (if any) you will be able to discover in the refuse; and the quality is all right too. I have gotten out many thousands of pounds in this way, and have had no complaints.

If one thinks more wax can be obtained by the so-called washing process than by continuous pressure, it is easily done by simply releasing the screw a few minutes and then applying pressure again. But I have not been able to get any more wax in this way. Possibly the thin cheeses account for this.

I have tried pressure on a larger and smaller scale, both hot and cold, but this press and method suit me best. For amount of wax secured, and ease of operation, I do not believe an open press can compare with it.

Several years ago I used the Root press in this manner with steam instead of hot water. This was a very good way, but did not give quite as much wax as with hot water.

Syracuse, N. Y.

[Our correspondent does not say whether he ever tried pressing the refuse a second time in the same manner to see how much more wax could be obtained. We have rendered a good deal of wax by this method, using the steam-press as a hot-water press; but our opinion was that, if the hot-water plan were to be used, a can larger in diameter in proportion to the height should be used in order to permit of a greater heating surface. It is practically impossible to see wax in refuse that may contain as much as 10 to 15 per cent; and the only way to be sure that there is not too much waste is to repeat the whole process on the refuse.—Ed.]

## WHY THE BEES DIED.

### Poor Results from Cellar Wintering.

BY COLUMBUS CONGER.

I very much wish to know what is wrong with my bee-cellar. It is of stone, 7 ft. high, 14×18 feet in size, built into a bank on the west side, which comes nearly to the top of the wall, with a little of the bank on the north and south, and a double door on the east, which is the only place where I could have the door. The floor of the cellar is cement. The first winter I had for ventilation one 5-inch tile built into the wall on the south end, and a 3-inch tile on the north end, about 12 or 14 inches from the top of the wall. I put 60 colonies of bees in the cellar, and nearly all died.

Early in March I had to set them out, for they were all moldy and wet, and were dying every day, some of starvation, but more of the dampness, so I concluded they would be better off out than in, even if it were too early. I had only 14 colonies left for the summer harvest.

I concluded that the ventilation was at fault, so last fall I put a ventilator in the middle of the cellar, made of dimension boards 10×12 inches, which comes to the bottom of the cellar and up through the honey-house, which is above the cellar, with a single floor between. The ventilator extends about two feet above the honey-house roof, and the opening in the cellar is at the bottom near the floor. Then the tile on the north end I filled up, and in the one on the south I inserted a pipe with an elbow, which lets the cold air in near the floor also. I put about the same number of bees in the cellar last fall, with about the same results. I had to set them out earlier than I wished to this spring, because they were molding and dying. Most of them had honey in the hives, but the combs are covered with mold. They were in good condition when placed in the cellar. The bees were placed in the cellar with the hive-covers removed, and were covered with a wire screen, and quilts for each hive. Now, I should like to have some one tell me just what is wrong, and what would be the best and cheapest way to fix this cellar. I have thought of building a room over the door on the east side, in which I could have a stove, and heat and ventilate it that way. Is this advisable?

The temperature of this cellar has been about 30° all winter. I think it is too cold, but I do not know how to alter it.

Glenbeulah, Wis., March 26.

[It is very clear where your trouble lies. Your cellar is altogether too cold and damp. With a

temperature of 30° all winter it is no wonder that your bees die. It will be very easy to modify this difficulty by putting a small stove in the cellar or in an outside vestibule, as you suggest, the heat to go from the vestibule into the cellar. This would serve to raise the temperature, and at the same time remove the surplus moisture. An excess of dampness, with a temperature below 40, is very fatal. There should be a fire in the stove during the coldest part of the winter, or whenever the temperature goes below 45. Even if the fire be continued only two or three hours, raising the temperature say to 50 or nearly 60, and it then goes out, and the temperature drops to 42 or 43, no harm will be done. The moisture will be taken care of, and the bees will be kept clean and sweet.

The great trouble with many bee-cellars is that they are too warm because not sufficiently underground some parts of the winter, and altogether too cold at other times. Bee-keepers need not be afraid of using stoves, providing they do not get the temperature too high, as ordinarily it should not go above 50 nor below 40; 45 is the most desirable point. Some cellars filled with bees will maintain that temperature throughout the winter; and where that can be done, no stove and but very little ventilation will be required, as the bees are in a state of semi-hibernation when respiration is very much subdued.—ED.]

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### DISPENSING WITH SEPARATORS.

In the new A B C book, p. 118, you ask the question, "Why not dispense with separators altogether?" and then you answer, "We can, by using narrow sections." Now, in dispensing with separators what kind of section frames or containers shall we use? Shall they be plain ones, and placed wide enough apart to leave a bee-space, or shall they have the usual bee-space cut out and use open sections to match? It seems to me sections as narrow as 1⅜ with openings for beeways would be impracticable. Another thing, I should like a section that would hold a full pound, and for that reason would prefer a 4×5 section 1½ inches wide. But would that be as desirable as the narrower section, in our effort to get rid of the separator? It does seem to me that, if we can succeed in doing away with the separator, a long stride will have been made in simplifying honey-making. The modern bee-hive is entirely too complicated, and has a great deal too many loose parts or pieces.

Whitehall, Ill. A. W. FOSEMAN.

[To do away with separators would require the same spacing from center to center as our brood-combs. This would mean beeway sections open on all four sides, 1⅜ in. thick, or plain sections ⅞ in. thick. Obviously, the former would be more suitable—or, rather, they would not look so thin when filled as the others.

As to containers, section-holders, or wide frames, could be used. Full sheets of foundation—the "thin," not the extra-thin—should be used, as there should be no buckling nor stretching. The foundation should be well fastened, and the hive plumb from side to side, providing, of course, sections were parallel with the sides. It would not be practicable to make a 1⅜-thick beeway section hold a pound, as it would be too large; and a ⅞-inch plain section would look more out of proportion yet.

A 4×5 plain section 1½ in. thick could not be used without separators or fences.—ED.]

### SHORT-LIVED QUEENS; HONEY CANDIED HARD IN THE HIVES.

We are located at the foot of the Big Horn Mountain, and have about 300 colonies in eight and ten frame L. hives. They are in fine condition, needing only sunshine. Our pasture includes the numerous wild flowers, together with dandelion, white and crimson clover, alfalfa, and the famous sweet clover. Bees do exceedingly well.

I should like the advice of your contributors in overcoming a trouble that we have. Our queens seem very short-lived, for they die leaving the hive full of stores. This may occur at any time of the year. Our honey also granulates in the hive. At this date we have several thousand pounds in the hives that is as hard and dry as granulated sugar. FRANK JONES.

Buffalo, Wyo., June 7.

[We should be glad to have any subscriber in the vicinity, or like environment, who can offer an explanation, let us hear from him. The difficulties mentioned must be due to some special local conditions, and we will not attempt to answer it at this time.—ED.]

### HIVE-LIFTING DEVICES; SHALLOW HIVES NOT ADAPTED FOR BEGINNERS; WAX-RENDERING.

In an editorial I notice what is said about hive-lifting devices. This is what I wanted badly the last two months. You see I kept the bees from swarming by adding shallow extracting-supers till about June 25, and kept adding them till I had them 30 in. high. Toward the last, just before shaking, it was a task to get an empty shallow super just over the brood-nest. I had to call help the last time.

After shaking the bees out in shallow hives and arranging for comb honey I took all that was on the stands of seven colonies and piled them all on three stands. This made them quite high. To get at the lower supers would have been too much work, and a hive-lifting device would have come in nicely to handle them. If you get up something in this line I want one. You may say Salisbury wants every thing new to try, like the N super and Aspinwall hive. Really I enjoy these new things.

On page 878 I notice E. F. Atwater advises against the use of divisible hives. He voices my sentiments exactly when he advocates cautioning beginners against their use. These hives can be used only by experts in the business. Pollen will be found in the sections unless perforated zinc is used in *plain sheets.* The plain sheets will help very much to keep out the pollen. The best hive for beginners is, according to my notion, the regular Dovetailed hive.

On page 887 an article on wax-rendering attracted my attention, and I wish to agree with Mr. Byer in regard to the unheated and heated wax-presses. His conclusion recommending the use of the unheated press is in line with my ideas. The footnote of editor is also entirely correct.

Syracuse, N. Y. F. A. SALISBURY.

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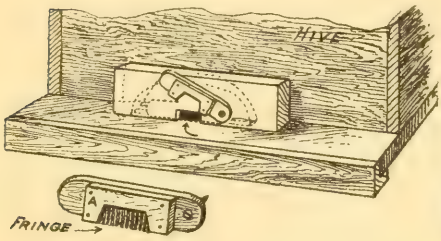
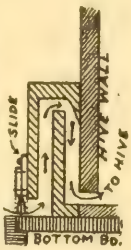



VESTIBULED AND PROTECTED ENTRANCES.

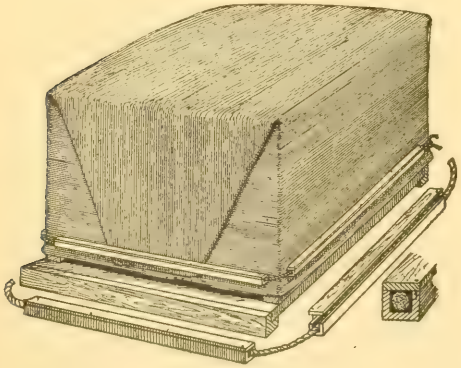
This is a very important branch of our pursuit, especially during the cold spring days. The chaff and double-walled hive with wide-open entrance is to me like building a warm house but leaving the door open. Bees need some ventilation; but very little is necessary in cold days. I am wintering some with an entrance the size of a leadpencil.

I send you one of my windbreak entrances. The bees, to go in or out, must pass up and down over. As you will see, this prevents the wind from blowing right into the hive. In connection you will also find an automatic closing entrance in the form of a button which may be swung up back out of the way in warm weather. The bees must learn to crowd their way through it, which they will do if the threads are not made too thick.

FASTENING PAPER AROUND THE HIVE.

In the Nov. 15th issue of GLEANINGS, p. 1436, we find directions for fastening the paper around the hive with a cord. It is not possible that the cord can hold the paper as close to the sides of a hive as a cleat would, but the nailing of the cleats would be objectionable. The two plans may be combined by running a cord through the center of the square cleats, and tied at the corner of the hive. The cleats should be one or two inches shorter than the length of the sides of the hives; that is, if the hive is 20 ×14, the pieces or cleats should be 18 and 12 inches respectively.

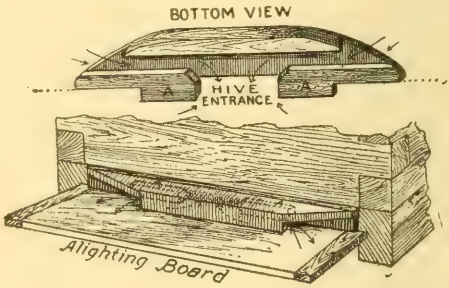
Oswego, N. Y. F. H. CYRENIUS.



THE CYRENIUS METHOD OF FASTENING PAPER AROUND THE HIVE.

[Last spring we made up some entrance-stops like those shown in the drawing; but our apiarist, Mr. Bain, was not sure they were a real benefit. The bees acted confused. This may have been, and probably was, due to the fact that the stops were put on *after* the bees had had several flights, and to a certain extent had become accustomed to the entrance as it was all winter. The putting on of these new appliances may have confused them to their hurt. Possibly if they had been put on the November previous the results might have been more positive.

Here is another sample of an entrance-stop or windbreak on the same plan as yours, except that it lies horizontally, thus enabling the bees to carry out their dead more easily. In the type you show, this would be rendered more difficult. —ED.]

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CHICKENS EAT DRONES.

I have been reading on p. 1505, of the Dec. 1st number concerning drone bees and chickens.

For a number of years I kept Black Minorca fowls. The bees used to sting them badly — so much so that when the fowls wished to cross the yard they did it by running; but the past two years I have kept Rose Comb White Leghorns. I made the change, as the Minorcas suffered so by having their combs frozen in winter. That stopped the egg production. I am pleased that I made the change; but what amused me in 1906 was that the young fowls were very fond of drones; and to catch them (the drones) on the fly, leaving or returning to the hives, the chicks would approach at the side of the hive and snap up the drones so quickly that it was quite amusing. The young fowls of 1907 have the same trick. I have seen them snap up 10 or 12 in a few minutes. I think the difference in color between black and white is the cause of the bees acting so differently with these fowls.

Woodstock, Ont. J. B. HALL.

# OUR HOMES

By A. I. Root

What God hath joined together, let not man put asunder.—MATT. 19:6.

This growing business in the way of divorces has worried and troubled me for a long time back. I am sure it is the result of misapprehension and misunderstanding; and it is Satan himself, the arch enemy of mankind, who is fostering and encouraging this uneasiness and discouragement between man and wife. This whole great world of people does not seem to realize or recognize the sacredness and the solemn responsibility that rests on the marriage ceremony. As it looks to me, there are three great events in every human life. The first is life itself, or we may call it birth—coming into this world of ours. The next great event, or perhaps the other great event, is death—the taking leave of this world and the closing up of human life. Now, we have but little to do with the matter of birth. Somebody has said we were not consulted in regard to the time or place and other circumstances. We have something to do with death, it is true; but most of us are powerless when we come to die, and, in fact, are almost as helpless as when we were born. But the third great and important event is, in my judgment, marriage. It should be regarded by both man and woman as the most sacred and solemn event that happens to them between *life* and *death*. Perhaps they do not always look at it in that way; but it is the planning and arranging for giving other human beings a glimpse of human life, through them.

A few days ago somebody sent me a little book, the title of which was, "How to Care for a Wife." All things considered, I do not know that I would want to recommend the book, especially for general reading. But there were some very good things in it. One especially was an earnest exhortation to all young people approaching maturity to consider marriage in the way I have been urging, as a sacred and solemn undertaking; that in choosing a partner for life each one should carefully consider the building-up of a home and rearing children who will be a credit to humanity and to our nation. While Mrs. Root and I were reading and discussing it, one of our daughters and her husband, and one or more of the young prattlers of their home, came in. I read an extract from the book, and asked the two young parents how many young people in contemplating marriage, or, say, during their courtship, look at the matter in that solemn and methodical way. Mr. Boyden burst out into a laugh and said, "There is not one couple in ten thousand that ever think of such things." I looked up at Mrs. Root and said, "Sue, when you and I were spending so much time together, say a year or two before our marriage, how much of an idea had we in our heads about rearing a family in the fear of God?" She laughed at the idea almost as loudly as did Mr. Boyden, and declared that she never gave even a thought to the responsibility of rearing a family. Perhaps neither one of us was ready just then for any such problem; but the dear Savior led us and taught us, and prepared us for the task, all in his own good time, as the little strangers came into our home, sometimes a little faster than we two had planned to have them come. My attention has been called to this whole matter by an article in the *Ladies' Home Journal* for August. The title of the article is, "Why I Would Not Marry My Husband Again." Mrs. Root read a part of it to me just as I was getting ready to go to sleep; but before she got very far I raised up in bed and said with vehemence, "Sue, that article should never have been written. The *Ladies' Home Journal* made a mistake and a blunder in giving place to it. It is treason against all humanity. No wife and no husband should ever let the thought enter the head or consider for a *moment* such a question." Mrs. Root smiled a little at my vehemence, and a little later gave me a big smile that gave my heart a thrill when she asked very quietly, "Would *you*, my husband, choose the same wife if *you* had your life to live over again?"

She knew, bless her dear heart, what the answer would be, when I replied, before she had hardly finished her question, "Yes, to be *sure* I would. You know, dear old comrade and partner, that I would not trade you off for any other woman or for *all* the other women the world has to offer." Perhaps it was my turn to turn around and ask her the same question; but I knew what the answer would be, without asking. May God be praised that Satan with all his machinery and band of helpers has no power to shake or weaken in the least our love and trust in each other. But, dear friends, as I look out on the world and remember the experience of years past, I again still feel sorry that this question has ever come up. I can remember too many cases where the husband and wife did not seem to be greatly attached to each other. Some of them did not get the one they wanted, and some of them finally took up somebody else because they could not do any better. This latter course is all right. I believe in people getting married, even if they do not succeed in getting just the companion they wanted. Often death takes the loved one away. Shall the other go through life single, out of respect to the memory of the departed one? Not so. God sent us into this world to help the world along; and no person can really be in the harness, and be one of the world's efficient workers, until that person is married and has children. If God does not see fit to send the children, then let them take some of the children who have no father or mother and bring them up in the fear of the Lord.

What would you think of the woman who would go through life comparing her own husband with other men to his disadvantage, and saying to herself, "Now, if *that* man had been my husband I might have had some chance to amount to something. As it is, what is the use?"

Some women do have such thoughts in their mind. I have seen some so foolish that they even talked it to their neighbors. I know some wives have great trials, but so have some men; but let them remember the words of our text, and let them strive to be loyal to God and loyal to the companion God has given them. Perhaps some of you may say, "God did not do the giving. It was my own blundering when I made

the choice." That does not make any difference, my friend. You once stood up before one of God's ministering servants and took the most solemn oath ever assumed in all your life to "love, cherish, and protect." I do not know just the words you used, but doubtless you remember them. These words and this oath were not taken before the court of men. It was before the great Father above, who created us in his own image. Let me beg of you, dear friends, to believe I am speaking the truth when I declare it was the most solemn and sacred promise you ever gave to *anybody* in your life; and your happiness here on earth and in the world to come depends on how faithfully you keep this promise. For the sake of the children, the fruit of your union, if for nothing else, remember that sacred obligation and be faithful to it to the last.

Ernest and our good pastor both laughed at the idea that I objected to even the discussion of this matter as it is discussed in the *Home Journal*. They suggested that a woman may not have written it; but I claim that it is *poison* all the same, and I *am* sorry it ever came up. It is true there are some good lessons suggested in it. For instance, this husband under discussion used tobacco, and I want to make an extract from what his wife says about it:

> I am perfectly willing that my husband should smoke, but in some degree of moderation. Instead of that he smokes inordinately—it is cigar after cigar, pipe after pipe, until the room is so charged with smoke that I simply can not breathe. It is not the smoke I object to so much, I think, as the absolute lack of consideration for me on his part—his unwillingness to curb a growing selfish habit in the slightest degree. His lips and his mustache invariably reek with the fumes of tobacco, and he knows that I kiss him mechanically. Why do I kiss him at all? I know no better answer to this than that he is all I have. Even with all his lacks and with a realization of all his sins against me, I am glad, I suppose, that he kisses me at all.

Now, the above is a big clip at the tobacco habit. It seems to me the man who loves his wife, especially if he is a Christian man, would give up the habit for his wife's sake if for nothing else. But suppose he does not give it up—suppose he keeps right on; is his wife excusable for saying if she had it to do over again she would marry somebody else? She is not excusable. Even the tobacco habit, much as I dislike it, is not a sufficient reason for divorce*, nor for the mother to let even the *thought* enter her mind for an instant, that, if she had her life to live over again, she would marry somebody else. It is infidelity to the marriage vow and the marriage obligation. It is opening the door to Satan and letting him come in with other suggestions; and when he once gets a hold of a human heart there is no letting up, and finally comes separation, perhaps divorce, and oftentimes murder. How many times we have read in the papers where some man and woman have connived together to poison or put out of the way the obstacle (in the way of *husband* or *wife*) whose presence, let us say, prevents Satan from carrying out his plans!

Some years ago, in these very Home papers, I quoted the old proverb that "love will not go where it is sent," and I declared with all the vehemence I could muster that the saying was one of Satan's falsehoods. Love *will* go "where it is sent." The man or woman who has been persuaded by the Devil (for he is the one who does all this kind of work) that she does not like or love her lawful companion, can, if he or she so decides, turn about and love the one he or she is in duty bound before God *to* love and cherish. Dear friends, I have had some experience along this line during the years God has permitted me to live. While Mrs. Root has one of the gentlest and most lovable dispositions in the world, she has also, when circumstances bring it out, about as stubborn a disposition as any of us. Were it not so, she would not have brought up her five children and made them "toe the mark" as she has done. Well, years ago, when we did not know each other as we do now, especially before I became a Christian, there were some clashings. I remember a time when I had been praying most earnestly in regard to some differences between us; but I asked the Lord to help me, and he did lead me. The outcome of it was a complete surrender. Probably a surrender on both sides—I can not exactly remember, but she said something like this: "Dear husband, when you love me and treat me with the kindness and consideration you have shown of late, I feel as if I could go through fire and water to do any thing you wish to have me do." Then in a little while this love and kindness are reciprocated in a way that made me think, if I did not say it out loud, "Bless the dear little woman! If I too would not go through fire and water to please *her*, I should be most heartily ashamed of myself."

Just a word more in regard to this matter of love that will not go where it is sent. Dime novels and some silly poems tell us about people who have been "true to the last." Because they could not have the one they wanted they went through life on the mourners' bench. I told you about Dick Bassett up on the island near our northern home. His girl would not have him, and so he went off and lived all alone on the island for *eight years*, just for spite. Finally she relented and went to live with him on the island. When he finally got the girl his fond ambition had pictured all those eight years, according to the dime novels they ought to have lived in blissful happiness evermore; but, if I remember correctly, she very soon declared she was not going to be cooped up on that island for him or anybody else. Then they tried living on the mainland, and finally decided they could not live together comfortably anywhere. Perhaps another divorce ensued—I do not remember.

Now I hope a couple of good friends of mine will excuse me if I mention a little romance that came under my observation. May be I do not know all about it, but I guess I have the main part of it about correct.

Some fifty years ago a boy and girl who were going to school together became acquainted, and were finally engaged to be married. I think some of the parents objected because the children were too young. As usual, they had a disagreement after a time, and each one was too proud to relent, and so they separated. The young man went to a distant State, and was gone quite a spell. But after a time he felt that perhaps he was to blame, and he came back to that country

*Much as I dislike and deplore the use of tobacco I am not sure but that, in the sight of God, this woman is more to blame than her poor husband. I mean that she is to blame for deliberately summing up his shortcomings. If Mrs. Root should set seriously about it, and make a business of compiling a list of my faults and failings, knowing me, as she does, better than anybody else in the world, I should fear for the result.

schoolhouse; but the girl had gone, nobody knew where. Perhaps she covered up her tracks for spite. He did not succeed in finding her. Perhaps he thought she might let him know where she was. Time passed, and he married somebody else in a distant land, and she also married somebody else. Both of them brought up a family; but, if I am correct about it, each of them kept looking back to that boyhood and girlhood courtship, and perhaps thought how much happier they would have been had things turned out otherwise. Now, this was all wrong. It is as wicked for the father and mother of a family to look back in that way as it was for Lot's wife to disobey Jehovah's command by "looking back." When we are once married, especially after we have had children, it is in one sense a *crime* to look back. It is treason to the partner to whom you have promised to be true. Well, now for the rest of my romance. Forty years have passed. The man lost his wife, and later the girl (or elderly woman) lost her husband. Although more than a thousand miles apart they two found out about it, corresponded, and then got together and were married. After all the years and some "heart-breaking anguish" (I wonder if I am putting it too strong) they talked over their old misunderstandings, begged each other's pardon, and stood together hand in hand. It looked as if both had become young again. I ventured a little caution. I said, in substance, "My friends, I am rejoiced to see you two happily united; but may I suggest to each one of you that you are now old people? You have both lived to see a good share of human life. You have settled down into ways and notions that are not easy to break or overcome. It will not be so easy for you to learn new things now as when you were boy and girl in that old schoolhouse. May God watch over you both, and bless and guide you."

The man had a home, and owned property in Arizona. He had lived there a great part of his life. The new wife was accustomed to a cold climate, where she had lived all of her life. When I asked how they were going to manage things she said to me, and perhaps partly in pleasantry, that, "for the sake of being with *him*, she was willing to go to the ends of the earth," etc. Well, she tried it for a little time in Arizona, where the temperature is often 110 to 112 degrees in the shade; but as she is a rather large heavy woman the desert heat seemed to be rather depressing on the romance of their honeymoon. Then he, like a good husband, came back and tried one winter in the cold climate of the North. But I fear that the zero temperature was as severe on *his* romantic ideas of early life as the desert heat was on hers; and just at present there is more than a thousand miles between them. I do not mean that there has been any *disagreement* between the two. God forbid! but when they two came to take a sensible view, as all people ought to be able to do at their age, it seemed more convenient for them to live apart than to live together.

Now, the moral I would draw from this, and from all other events of a similar nature, is that young people and sometimes middle-aged (and may be elderly ones) get a foolish notion into their heads that they "can not live" unless they can live togther. Then they soon get *another* equally foolish notion, that "they can not *live*" unless they are *separated*. A great part of this is imagination. Love *will* go where it is sent. It is your duty to love, cherish, and protect your mother as long as she lives; and this is true, even though she should not happen to be one of the most lovable mothers in the world. The same is true with the father, and with the children. God gave us our fathers and mothers, and to some he gave children. We can not escape the responsibility that God has laid upon us; and when two parties are united in the holy bonds of marriage, it should be recognized in the same way. "What God hath joined together, let not man put asunder." In conclusion I wish to make a clipping from an article in the *Medina Gazette*, being one of a series written for that paper by my good friend W. P. Root, who is just now taking down these words:

In the consideration of divorce there is one factor I have not yet alluded to; and that is, that matrimonial dividend known as the family baby. If there is one thing that should cause parents to overlook the shortcomings and misdemeanors of each other it is the helpless babe in the crib, smiling as it recognizes its father as he returns home, and then bestowing another smile, equally pleasant, on the mother who has watched it all day. If that infant has a right to its two eyes and its two feet it has an equal right to its two parents; and when I say parents I do not mean simply bearers or breeders, as the word primarily meant, but two guardians who will so nurture it as to develop the good and suppress the evil—or, rather, turn all the child's faculties into a good channel; for what are called bad traits are simply good ones perverted.

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# HIGH-PRESSURE GARDENING

By A. I. Root

A STORY WITH A MORAL—DOES IT HIT YOU?

Mr. Calvert, my son-in-law, recently purchased a piece of land adjoining his home. This land had been cropped to death without proper manuring, especially at the back end of the lot; but we planted in it some field corn in order to get a start and work it up. A few days ago I was looking it over, and talking with a man after he had cultivated and hoed it. I said:

"Why, look here, Mr. Weibly, what does this mean? Here are two spots of magnificent-looking corn away ahead of all the rest. What is the reason—how does it happen?"

"Why, Mr. Root, that is where I put two wheelbarrowloads of manure that I got out of Mr. Calvert's poultry-house, and spread it around on top of the ground; and with the cultivating and hoeing, and the plenty of rain we have had, it has just rotted and is working down to the roots of the corn."

It was indeed an astonishing object-lesson, and shows that manure from the poultry-house, if properly applied, is no small asset to the business, besides the eggs and fowls for meat.

A few days later, when our folks went down to cut our beautiful piece of timothy, grown on the Clark system, I was much astonished to find two spots near Mr. Boyden's residence (another son-in-law), where there was no timothy nor any thing else. The heads of timothy around these spots were almost as high as my head. While I

was looking at the team I carelessly stepped in one of these spots, and soiled my shoes with an awful-smelling stuff that looked something like tar after it has been running out in the sun. This was not one of my "pleasant surprises" like the other. It was a rather *unpleasaut* surprise. I called out again to Mr. Weiblv, and said:

"Mr. W., what does this mean? What is this stuff, any way, that I have just stepped into?"

"Why, Mr. Root, I think it must be where somebody has emptied a load of poultry manure that he cleaned out of Mr. Boyden's poultry-house."

"Do you know who it was that dumped a wheelbarrow load of manure all down in one spot like this?"

"No, I do not know who did it. I suppose Mr. Boyden told one of the men to clean out the poultry-house, and did not tell him where to put it; so he just put it over on to your meadow and dumped it all in a heap, or, rather, two heaps."

Now, friends, here is a big moral. If I am correct, the trade unions undertake to pay all sorts of workmen the same wages, or something like it, and there are some who think that those who work on a *farm* should all have the same pay. The man who spread the poultry-manure on the corn ground, and worked it in, even if he was *not* told so to do, should surely have better pay than the other one who just tipped his wheelbarrow over and spilled the strong valuable manure where it killed the timothy and every thing else. This strong manure was greatly needed on the garden, that was much nearer to the poultry-house, than the timothy-field. But if he decided to put it out on the grass land, why in the world did he not scatter it around, or, better still, hunt up a place where the ground looked poor.

Now, there are just such people in this world who are looking for a job. I think that in both cases the owners of the poultry-houses were to blame for not explaining further what the man should do with the scrapings from the roosts. Perhaps Mr. Calvert did explain—I do not know. Mr. Calvert and Mr. Boyden are both exceedingly busy men. Very often they hardly have time to give directions to the man who does outdoor work. Come to think, that is generally *my* job, and I ought to have looked after both of these men. But suppose the owner of the poultry-house did *not* stop to direct what should be done with the accumulations from the poultry-houses that had been left altogether too long. The man who carefully put it where it was needed, and did good, even if he was not told, generally speaking would be worth twice as much as the one who obeyed orders and dumped the contents in "any old place" in order to get it out of sight.

There, I almost forgot the moral to my story. I guess it will be something like this: When you set a man to clean out a poultry-house, be sure to tell him what to do with the contents—to spread them out over the ground where compost is needed and where it will do the most good. And, by the way, I do not believe I would let it accumulate until there is even *one* wheelbarrow-ful. Years ago we made a manure-shed according to T. B. Terry's plan; in fact, he planned it out for us; but the men who have the care of our team never liked it, and said it was in their way; it got hot, and burned in spite of all the water they put on it; and so they have, for some years past, wheeled it out under an apple-tree. Just lately I succeeded in getting them to take it from the stables direct to the manure-spreader. When it gets full it is hauled out on the meadows. Now, the *Ohio Farmer* has recently had an article wherein the writer said manure taken right from the stables and put on to the fields with a spreader is worth *six times* as much as it is where piled outdoors and allowed to be leached by the rains until it rots. It seems that six times must be an exaggeration, but it may not be, after all. It is certainly a great saving of labor to take manure right from the stables to the manure-spreader, all under cover. Now, I am satisfied that there will be a great gain in handling poultry manure in something the same way. Perhaps a small manure-spreader, made for this purpose for establishments where poultry is kept by the hundreds, might be a paying investment. In Florida our poultry roosts up in the pine-trees; but even then the manure should be carefully scraped up, say before each heavy rain, or as near to it as you can manage it. If you do not do it, it will kill the tree and spoil the ground in time for any sort of vegetation. Mr. Weibly, whom I have before quoted, assures me he has known of apple-trees being killed outright, and others nearly killed by having a poultry-house under the tree year after year. I suppose it works in the same way that those wheelbarrow loads did that killed out the timothy where they were dumped.

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### A NEW KIND OF WHEAT THAT BEARS HEADS OF GRAIN AS LARGE AS EARS OF CORN, OR SOMETHING LIKE IT.

I was astonished (and pained) to find the following, given in the reading-columns of the *Manatee River Journal*, Florida. I clipped it out and sent it to our Ohio Experiment Station.

MIRACLE WHEAT; NEW VARIETY PRODUCED YIELDING 277 BUSHELS OF GRAIN TO THE ACRE.

Wheat with stalks like sugar cane and yielding 277 bushels of highly nutritious kernels to the acre has been produced as a result of experiments made in Idaho by Allen Adams, of Minneapolis.

The new wheat has been named "Alaska" because of its hardiness. It is either spring or winter wheat, just as the farmer desires to sow. It is so sturdy that storms that ruin other stock affect its giant stems but little, and the heads remain upright through ordinary hailstorms.

The yield shows that Adams has been able to obtain an increase of 222 fold. One head of the giant wheat was planted in the fall of 1904. The seeds from that head were planted the next year, and seven pounds of seeds obtained. This was sown in the spring of 1906, and from the seven pounds were harvested 1554 pounds that fall. In the fall of the same year he sowed it as winter wheat, but conditions were adverse. Almost all the "blue stem" and "club" were destroyed, and only a third of the crop of experimental wheat came to maturity, yet there was a yield of 50,000 pounds. A heavy hailstorm in July was the cause of the ruined wheat crop, which left scarcely any of the ordinary wheat standing.

Further experiments brought forth a yield of 277 bushels to an acre. The Idaho College of Agriculture has made a laboratory test of the wheat and reports the grain plump and sound, and that it should make better bread than does the ordinary wheat.—*Beloit Free Press.*

Here is what Professor Williams says in regard to it:

*Dear Sir:*—Prof. Green's secretary hands me your letter of the 11th inst. regarding the Miracle wheat, otherwise known as Alaska. We have received a number of inquiries within the last week or two regarding this wonder; but our knowledge of it dates back no further. On the face of it, it is, of course, a fraud of the rankest kind. Wheats that do well west of the Mississippi have never given satisfaction here; but it is open to doubt, of course, whether the Alaska gives satisfaction anywhere. I shall make

an earnest attempt to get hold of enough of it to test thoroughly among our some hundred varieties, but at present I do not know where to lay hands upon it. If you had not asked for the return of the clipping I should have liked to send it to the Idaho experiment station and note what they have to say in regard to it. Perhaps you will do so and let me know. The station is located at Moscow, Idaho. C. G. WILLIAMS.

Wooster, Ohio, Aug. 13.

Of course we returned the clipping at once; and when our experiment stations get hold of some of the seed we shall all be happy—yes, even if we should not get *quite* 277 bushels to the acre. I give place to the whole matter here so that no one who reads GLEANINGS may be swindled by paying a great price for this new seed wheat.

*Later.*—We clip the following from the *Kansas Farmer:*

EX-GOVERNOR GLICK ON "ALASKA" WHEAT.

*Editor Kansas Farmer:*—I am pleased to see the *Kansas Farmer* expose that "Alaska" wheat scheme that certain parties are trying to work off on the farmers. This is an old fake that was worked off on the farmers of Ohio over sixty years ago. It was sold to them under the name of "Egyptian" wheat of wonderful prolificacy. Wonderful stories were told of the immense crops it would produce, and bearing three to seven heads to the stalk. Many farmers bought the wheat and sowed it, but it proved to be worthless in Ohio. If the soil and climate of that State would not produce it, I do not think Kansas soil would do any better for it.

The second sowing seemed to end its vitality. I never saw over three or four heads on a stalk, and very few of them.

My father bought enough of this wheat to sow a half-acre, and two years' trial proved it to be worthless in Ohio, and I never knew a farmer to sow it after the second trial. If any Kansas farmer pays $5 a pound for it he can join the procession of the crowd that invested in the coreless and seedless apple.

Atchison County. G. W. GLICK.

# POULTRY DEPARTMENT

HOPPER FEEDING AND AUTOMATIC WATERING FOR POULTRY, ETC.

On page 848 I gave you quite a description of this, and I now give you some views of it. See cut on page 1074.

You will notice my invention is not particularly different from the great variety of atmospheric watering-devices, except that it can be hung up on the wall out of the way, and the chickens can not get on top of it nor into it. As they grow in size it can easily be hung a little higher up on a suitable nail. Since we have had such warm weather I find the devices I have been sending out are so soon emptied, especially when the fowls get to be half grown, or larger, that something larger is needed. In fact, we have them made of the largest size of wash-basin to be found in the tin-shop. Well, another thing has come to pass. During the dry weather the bees from our apiary of several hundred hives discovered the "chick-waterer" is a very handy place for them also to get water. The result is just now that the bees empty the little utensil once a day or oftener; and this has suggested to me that, by using a syrup instead of water, the little pan would make quite a handy bee-feeder. Just drive a nail in one side of the hive and there you have it. If you feed very heavily, however, the bees might build comb at each side of the feeder.

WATERING-DEVICE.

To go back to watering chickens, however, as my flock of 75 or 80 are now mostly half grown, it takes quite a lot of water during an August day; and the very best arrangement I have ever found yet is to have running water, or, what amounts to the same thing, dripping water. Have a pipe run into the poultry-yard, with a valve on it so you can set it so the water will drip just fast enough to keep up the supply for the fowls, and have a little dish running over more or less. If you have a supply of water from the regular waterworks, or from an elevated tank for the purpose, the arrangement is then automatic. A good deal has been said about scalding and thoroughly cleaning the drinking-utensils; but where your watering-dish is all the time running over I feel quite sure that no such scalding is needed. It should be high enough up so the chickens can not scratch filth into it; and on this account a separate watering-place had better be arranged for the little chicks. Have a wire-cloth pen around it with openings just large enough to let the little ones in and out; and this same wire-cloth inclosure should also contain chick feed and wheat, where the little chicks can always get in and help themselves; and have this inclosure large enough so that the larger fowls can not by any possibility reach in and nag the little fellows when they help themselves to feed and drink. And this latter remark reminds me of a letter I have just received. It reads:

I see in the last *Practical Farmer* something about your "hopper-feed" chickens. I should like to know how your hoppers are made, both for young chickens and fowls or older chickens. I have made several kinds of hoppers, and they are not satisfactory at all. They let the food down all right, but the chickens either pull the food out with their bills or scratch it out with their feet, thus wasting it.

I like dry feeding very well; so I wish you would kindly inform me about this; and, also, if it isn't any trouble, draw an outline and give dimensions of the hopper you use, both for young and old chickens. W. C. MERRILL.

Pocomoke City, Md.

HOW TO MAKE A HOPPER FEEDER FOR HOPPER FEEDING CHICKENS.

Friend M., this opens up a question that has been a good deal discussed, and on which I have experimented quite a little. In a large chicken-range near Tampa, Fla., I found they used boxes of different sizes, procured at the grocery, to hold the dry mash, and, to keep the chickens from getting in, a piece of wire-cloth netting of about one-inch mesh is dropped loosely in the box. I used this quite successfully while in Florida. It is true the chickens can not scratch out the feed, but they can get in and stand in it. To prevent this, and also to keep out of the rain, we want some sort of cover, just high enough so the hens can reach up under. Each cover should be supported on a little post nailed in each corner of the box, and it should be removable to facilitate replenishing the feed. Now, this is all right so far as preventing waste, making the chickens eat it all up, and keeping out of the rain are concerned. But there is another trouble. Where you undertake to give your chickens grain enough to last them a whole week you will be sure to harbor rats and mice sooner or later. I am glad to say there are no mice in Florida—at least I never heard of any. Probably they will get around after a while, however; and I know of only one

way to circumvent rats and mice in hopper feeding, and that is to have your grain in some receptacle made of tin or sheet iron that is tall enough so they can not climb up or jump up the sides. A barrel would not answer, because rats and mice can climb up on the wooden hoops. Something like an extractor-can seems to answer the purpose. I do not know but an energetic rat might jump up and so get inside; but if rats did get in they would have a "picnic" in getting out again, and I do not know but it would be a good plan to use a can of such height, even if an occasional rat did get in. Then you can get a stick and give him such a scaring before you kill him that he would drive all the other rats out of the neighborhood. There is no better remedy for rats than to get a good lusty rat well cornered and make him squeal till the rest of the rats can hear him. Where a rat can not get in, of course mice will make no trouble.

We are now coming pretty close to the matter of poultry food. A great many, even farmers, are now buying mixed feed made of all sorts of grain, and this answers tiptop—very likely better than any one kind of grain alone; but, my good friends, if you will examine any of the much advertised mixed foods on the market, including ever so many brands of baby-chick food, you will find it costs quite a little more to feed your poultry that way than if you purchased the very best kind of corn, wheat, or oats, or whatever you may use. These grains in the market are sold on a very small margin, because everybody knows what a farmer gets for his crops; but where you buy a *mixture* specially put up, especially if they put in some meat scraps, grit, etc., you can not tell any thing about how much profit the mixer gets. And now here is another point: I believe our experiment stations have decided that fowls do better where they can *choose* their own "balanced ration" than where somebody mixes it for them. I would suggest that you have, say, four of the tin cans I have mentioned. Get your tinner to make them of the very cheapest brand of tin he can get. Sometimes the tinner has rusty sheets that are not fit for regular work. These will answer all right, and for corn I would have them about as large as a common barrel; for wheat, one-half or two-thirds size; but have it tall enough to keep out rats; oats, the same size as for wheat; for buckwheat, one-fourth the capacity of the largest. Now, I like better to have a receptacle for *each kind* of grain instead of putting a mixture of all in one can only. And, by the way, these deep cans make the nicest kind of hens' nests. What boy is there who can not remember finding a hen's nest in a barrel, say a barrel half full of corn, oats, or wheat?

There is just one objection to this sort of hopper. The fowls will sometimes make it foul while eating. My experience is, however, that they do not do it very often. These feed-cans must, of course, be kept under shelter. I would want a little shelter, even in Florida, when heavy storms come up. As a rule, your hens' *nests* should also be under shelter. If you are going to get the top notch for your eggs, they should be gathered several times a day, and no rain should ever be allowed to touch them.

Now, if somebody can improve on what I have outlined for a method of hopper feeding—one that prevents waste, and *absolutely* heads off rats and mice, I should be glad to receive his suggestions.*

# HEALTH NOTES

ANOTHER TESTIMONIAL FOR T. B. TERRY AND HIS TEACHINGS.

I have taken the liberty of clipping the following from a private letter from the father of our business manager, J. T. Calvert. It indicates, as you will notice, that Terry's teachings apply away up in northern Canada as well as throughout the United States.

Perhaps I should explain to you that Mr. Robert G. Calvert, another son of the writer, has just informed me that for many years his father drank tea and coffee, mostly tea, at every meal, and followed the very common (but exceedingly unwholesome) practice of taking a little sip of tea or coffee with almost every mouthful of food. You will notice by his letter that he has broken square off from this way of taking his meals. Mr. Calvert is 76 years old. And now with this preface I give you this extract from his letter:

My health was never better. I am following T. B. Terry's advice on health notes in the *Practical Farmer*. I drink about two quarts of water daily between meals, and drink nothing at my meals, and chew food well. I eat no more than three or four kinds of food at a meal; stomach and bowels are in good order.

Reaboro, Ont., Aug. 10. JOHN CALVERT.

# TEMPERANCE

"WHEN THE PARTY GOES WRONG."

That man is a dangerous citizen who so far mistakes means for ends as to become servile in his devotion to his party, and afraid to leave it when the party goes wrong.—

*Theodore Roosevelt.*

May the Lord be praised that we have a President who has grace and courage enough to stand out fearlessly and courageously aud give utterance to a sentiment like the above.

VOTING FOR GOOD MEN.

I want to express a hearty amen to the following, which we clip from the *National Prohibitionist* of July 9:

In the General Conference at Baltimore, Md., on the twenty-fifth day of May just past, the Methodist Episcopal Church said:

"We record our deliberate judgment that no candidate for any office, which in any way may have to do with the liquor-traffic, has a right to expect, nor ought he to receive, the support of Christian men so long as he stands committed to the liquor interests or refuses to put himself in an attitude of open hostility to the saloon."

May God be praised for the Methodist Church; and may her people continue to grow in grace and increase in numbers.

* After the above was in type it occurred to me that the arrangement I made to head off rats and mice would not stop the English sparrow and other birds from helping themselves *ad libitum*. At present I know of no way to head off the birds but to have the grain upstairs in the little poultry-house pictured on p. 638, May 15. With the wire screen overhead so the birds can not get through, it traps them every time—that is, if they get in where the chickens do, and find their way upstairs. After they have been caught a few times in this way, so far as my experience is concerned they are effectually cured of meddling with the wheat. Somebody suggests that the amount of grain the birds get is only trifling; but it is something more than a trifle in our locality.

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**JOHN M. STAHL,** Dept. G, **QUINCY, ILL.**

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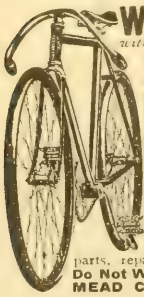
**SAVE HALF YOUR FUEL** or give you double the amount of heat from the same fuel, if you will give it a trial, or we will refund the money paid for it. Write for Booklet on heating homes.

**ROCHESTER RADIATOR CO.**
**50 Furnace St., Rochester, N.Y.**

**Prices from $2 to $12**
**For hard or Soft Coal wood or gas**
**Fits any Stove or Furnace**



## WE SHIP ON APPROVAL

*without a cent deposit*, prepay the freight and allow **10 DAYS FREE TRIAL.**

**IT ONLY COSTS** one cent to learn our *unheard of prices* and *marvelous offers* on highest grade 1909 model bicycles.

**FACTORY PRICES** *Do not buy* a bicycle or a pair of tires from *anyone* at *any price* until you write for our large **Art Catalog** and learn our *wonderful proposition* on first sample bicycle going to your town.

**RIDER AGENTS** everywhere are making big money exhibiting and selling our bicycles. **We Sell** cheaper than any other factory. **Tires, Coaster-Brakes,** single wheels, parts, repairs and sundries at *half usual prices.* **Do Not Wait;** write *today* for our *special offer.*

**MEAD CYCLE CO., Dept S 113, CHICAGO**

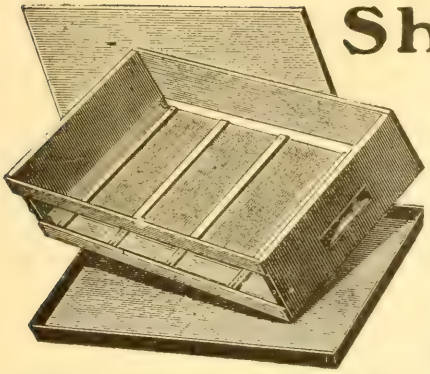
## Watch Fob Free

YOUR CHOICE OF CANDIDATES

## BRYAN OR TAFT

Handsomest Campaign Badge you have ever seen. You may have it FREE with our compliments. This fob is made of a fine grade of seal grained Russia leather, nickeled buckle, beautiful mother-of-pearl shield, containing a photo of your favorite candidate, either Bryan or Taft. It is guaranteed to be just as we describe it and you will be proud to wear it. We are giving away these handsome fobs to get acquainted with you and to get you acquainted with our splendid and instructive farm paper, "FARM AND STOCK," an up-to-date magazine devoted mainly to corn and live stock. The Watch Fob and a three months' trial subscription given you absolutely free on receipt of 10 cents in coin or stamps to pay for mailing. We will also send you our liberal proposition whereby you can secure other handsome premiums free by giving away several of these fobs to your neighbors. You are sure to be delighted with both fob and paper, so send 10c at once while they last to

**FARM AND STOCK**
**Box 307, St. Joseph, Missouri**



# Shipping-cases

for any number or size of sections desired. These cases are made of fine white basswood, and the workmanship is first class. Owing to the shortage in the honey crop last year we have a good stock on hand and can make immediate shipment.

Twelve-inch case, with follower, to hold 24; or eight-inch case, with follower, to hold twelve beeway sections, shipped when no size is mentioned. All cases single tier unless otherwise ordered.

## Honey-packages in Tin.

Standard packages for storing and shipping extracted honey. Less chance for leakage or taint from wood; being square they economize space. Five-gallon cans boxed two or one in a box; gallon cans 10, ½-gallon cans 12 to box. Five ½-gallon cans not boxed if desired. Prices on application for any quantity.

Place your order now; prices and prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY COMPANY**
**123 Nicollet Island, Minneapolis, Minn.**

---

**1884** **1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . .

**J. M. Jenkins**
**Wetumpka, : : Alabama**

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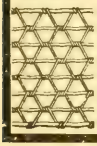
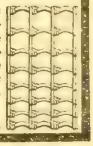
# COIL SPRING FENCE



Made of high carbon Steel Wire Horse-high, Bull-strong, Chicken-tight. **Sold direct to the Farmer at lowest manufacturers prices on 30 Days Free Trial,** freight prepaid. 100 page Catalogue and price-list free.

**KITSELMAN BROS.,**
**Box 21 MUNCIE, IND.**



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# T. B. TERRY'S HEALTH HINTS

published only in The Practical Farmer each week, have been the means of saving lives and thousands have been helped to enjoy life more than they have ever done before. Send **Twenty-five Cents** to The Practical Farmer, Philadelphia, Pa., and read Mr. Terry's Health Hints **thirteen weeks on trial.** You will be surprised to find how simple a matter it is to get well and strong and keep so. The latest and best that can be given you, together with strong editorials on Agriculture, Live Stock, Gardening, Home Life, etc. A high class weekly, well worth the subscription price of $1.00 per year. Address

**THE PRACTICAL FARMER**
**P. O. Box 1317 PHILADELPHIA, PA.**

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**DON'T WORRY OVER MONEY MATTERS** but send for sample copy of Inland Poultry Journal and let us tell you how to make money out of poultry. Two full pages in colors, reproductions from oil paintings that cost us $1000.00. They are FREE.

**Inland Poultry Journal Company**
**15 Cord Building, - Indianapolis, Ind.**

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# HONEY-JARS

## from New York City

We consider the No. 25 jar with solid metal cap and waxed liner the best jar made for honey.

Gross crates . . . . $5.00; 5 gross, $4.75 per gross.
12-oz. screw-cap jar . . 4.50; 2 gross, 8.25 per gross.
1-lb. sq. jar with cork . 5.00;
Italian queen . . . . 1.00. Catalog free.

Apiaries, Glen Cove, L. I.

**I. J. STRINGHAM 105 Park Place, New York**

---

# NOW IS THE TIME

to buy your queens for fall increase. I can mail promptly young vigorous queens —Italian, Carniolan, Banat, and golden. Prices, untested, 75 cts.; $8.00 per dozen; tested, $1.25 each; $12.00 per dozen.

Circular free.

**Grant Anderson, Sabinal, Tex.**

---

# ITALIAN QUEENS

Large prolific queens of the Moore strain. Nice to handle, and good workers. Untested, 60c; 6 for $3.25; doz., $6.00, now going by return mail. **S. F. TREGO, Swedona, Ill.**

---

FOR SALE.—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

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# PATENTS.

**Twenty-five Years' Practice.**

## CHARLES J. WILLIAMSON,

**Second Nat'l Bank Bldg., Washington, D. C.**

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

---

**20 American Girl** postcards, and membership to our post-card exchange, also 3 mo. subscription to our paper—all for 10c. Up-to-Date Farming, Dept. P, Indianapolis, Ind.

UDO TOEPPERWEIN W. M. MAYFIELD

# THE BEE-KEEPERS' Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND
**AN IMMENSE STOCK OF HONEY-CANS**
(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

| | |
|---|---|
| 12-in. 4-row shipping-cases with 3-in. glass | $17.00 per 100 |
| 9¼-in. 4-row shipping-cases with 3-in. glass | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass | 9.35 per 100 |
| 6¼-in. 3-row shipping-cases with 3-in. glass | 9.80 per 100 |
| 7⅛-in. 3 row shipping-cases with 3-in. glass | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 25 cts. cash; in trade, 28 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**TOEPPERWEIN & MAYFIELD**
1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

## "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

*Cash or goods for wax at all times.*

**George E. Hilton**

**Fremont, . . Michigan**

# NEW GOODS! BIG STOCK!

**New Warehouse Root's Goods**
**Prompt Shipment Low Freight**

**EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.**

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**

**241 BULL ST. SAVANNAH, GA.**

# WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

A FULL LINE OF

## Shipping-cases,

**Honey-extractors,**

**and all other seasonable goods now on hand.**

We are also prepared to supply goods for next season's use at special discounts.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

**JOS. NYSEWANDER**

**565-7.W.7th St., Des Moines, Ia.**

# North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK,** and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write. . . . . .

**TEXAS SEED AND FLORAL COMPANY**

**Dallas, : : : Texas**

# HIGHLAND FARM QUEENS

are the result of years of careful selection and judicious breeding from the best honey-gathering strains of superior long-tongue red-clover Italians in America and Italy. Highland Farm methods will produce perfectly developed, long-lived, and prolific queens. If you want bees that will winter well, build up rapidly in the spring, and roll in the honey, Highland Farm queens will produce them. We are now sending queens of this celebrated strain by return mail at the following prices:

| | 1 | 6 | 12 |
|---|---|---|---|
| Select untested queens | $ .75 | $4.00 | $ 7.50 |
| Tested queens | 1.25 | 6.00 | 10.00 |
| Select tested queens | 1.50 | 8.00 | 15.00 |

Safe delivery and satisfaction guaranteed. Send for queen circular—it tells why Highland Farm queens are superior to others.
Address all orders to

**J. E. HAND, BIRMINGHAM, ERIE COUNTY, OHIO.**

# ITALIAN QUEENS

And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $ 75 | $4 00 | $ 7 00 |
| Tested queens | 1 00 | 5 00 | 9 00 |
| Select tested queens | 1 50 | 8 00 | 15 00 |
| Breeders | 3 00 | 15 00 | |
| Straight five-band breeders | 5 00 | | |
| Two-comb nuclei, no queen | 2 25 | 12 00 | 22 00 |
| Three-comb nuclei, no queen | 3 25 | 18 00 | 32 00 |
| Full colonies on eight frames | 5 00 | 25 00 | |

**All queens now go by return mail.** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

**QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.**

**GOLDEN-ALL-OVER and RED-CLOVER**

# ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1 00 | $5.00 | $9 00 |
| Select untested | 1 25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.
Positively all orders filled in rotation.

**Wm. A. Shuff, 4426 Osage Ave., Philadelphia Pa**

**CARNIOLAN, BANAT, AND CAUCASIAN QUEENS**

Home-bred, $1.00 each; five at 80c each; Imported, $4.00 each.

**FRANK BENTON, - Box 17, - WASHINGTON, D. C.**

# ITALIAN QUEENS

Fine young prolific 3 and 5 banded Italian queen, untested, only 75c; extra-fine queen $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J. L. FAJEN, . ALMA, MO.**

**SOMETHING EXTRA FINE IN**

# QUEEN BEES

They are daughters of a Doolittle queen mated to drones of the Moore strain. By the use of all worker comb and drone-traps on Doolittle colonies no drones are allowed to fly but those of the Moore strain. This strain is the finest for honey-gathering I ever reared, and they always reproduce themselves.

Queens of the above strain, $2.00 each. Breeding queens, $3.00. Breeding queens one year old, with honey record, $5.00 and $7.00; queens of the Moore strain, $1.00. I guarantee safe arrival and a well-pleased customer.

**W. M. PARRISH**
**Rt. 8 Lawrence, Kan.**

*W. M. Parrish:* That 1906 queen is still ahead this season. The queen I bought of you last year has done well. She heads a colony that has not yet swarmed, and they have made more than double the usual average per colony. Your bees are hustlers. CLARENCE A. HALL. COVERT, KAN., July 30, 1908.

# Italian Queens

**GOLDEN AND CLOVER STOCK.**

Choice queens, 75 cts. each; six for $4.00, or $7.50 a dozen

**GEO. W. BARNES, Box 340, Norwalk, O.**

# Golden Italian Queens, 75c

**Six for $4.00.**

Mailed promptly. Safe arrival and satisfaction guaranteed. Circular.

**J. B. CASE, . . . . Port Orange, Fla.**

# Westwood Red-clover Queens

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O**

## QUEENS of MOORE'S STRAIN OF ITALIANS

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

PRICES: Untested queens, 75 cts. each; six, $4.00; doz.,$7.50. Select untested, $1.00 each; six, $5.00; doz., $9.00.

I am filling orders by return mail.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

**J. P. Moore, queen-breeder, Rt. 1, Morgan. Ky**

## Queens

**Golden and three-banded.**

Wurth's queens take the lead everywhere; have 600 queens; can send by return mail; untested, 60 cts. each. Send for circular.

**DANIEL WURTH, Rt 3, Fayetteville, Ark.**

## Taylor's Strain of Italians

IS THE BEST.

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3.00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

**J. W. TAYLOR & SON, Beeville, Bee County, Texas.**

## RED-CLOVER QUEENS

200 lbs. honey from my breeding colony. Mostly red-clover honey. Untested queen, 75 cts.; tested, $1.00; doz., $7.00. Four-frame nuclei and fine tested queen, $4. **G Routzann, Biglerville, Pa.**

CHOICE

## QUEENS

ITALIANS AND CARNIOLANS.

1 untested, 75c; 12, $7.50. 1 tested, $1.00; 12, $11.00.
1 selected tested, $2.00. 1 breeder, $3 00.
Nuclei, full colonies, and bees by the pound at low prices.

**CHAS. KOEPPEN, Fredericksburg, Va.**

## DOOLITTLE & CLARK

Are sending out fine Italian queens at the following prices: Untested, $1; 3, $2.50; 12, $9.00. Tested, $2.00; 3, $5.00; 12, $18.00. Breeders, $2.50, $5.00, and $10.00. Send for circular.

**BORODINO, ONONDAGA CO., N. Y.**

**Long-tongued**

## Red-clover Queens

**Bred by their Originator**

Do you want to get some specimen queens of the world-famous red-clover stock of Italian bees? Then buy from me, because I am the originator, and surely ought to know how to breed them in their purity. When you get them from me you know you have the real strain. For years I have devoted time and skill to this stock, trying to reach perfection. I can submit many splendid testimonials in favor of this stock to show my work has not been in vain. Try them, and YOU will be pleased also. I endeavor to please the practical man looking for definite results in dollars and cents. Many years' experience as head apiarist of The A. I. Root Co. enables me to fill the most exacting order with complete satisfaction to the purchaser Let me show you how well I can please you.

**Prices**

| | | |
|---|---|---|
| Untested queen . . | June to October, | $1 00 |
| Select untested queen | " | 1 25 |
| Tested queen . . | " | 2 00 |
| Select tested queen . . | " | 3 00 |
| Breeding queen . . | " | 5 00 |
| Select breeding queens . | " | 7 50 |
| Extra select " 1 yr. old | " | 10 00 |

**F. J. Wardell**

**Uhrichsville, . Ohio, U. S. A.**

## 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders, $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

## QUEENS

of the Robey strain of three-banded Italians during the season of 1908. Warranted queens, 75 cts. each; $4.25 per six; $8.00 per doz. Tested queens, $1.00 each. Satisfaction or money refunded.

**L. H. ROBEY, Worthington, W. Va.**

**FOR SALE=Queens** of my famous Red-clover stock. Untested, 50 cts. each; select untested, 75 cents each; tested $1.00 each. Nuclei, $1.00 per frame. Golden queens, same price.

**H. A. ROSS, 1709 Upper Second St., Evansville, Ind.**

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

FOR SALE.—"Gilt-edge" clover and raspberry honey at $10.75 per 120-lb. case. N. B. K. A. new round cans (best package made), filled with Wisconsin's finest basswood honey at $5.50 each. This honey remained sealed on the hives for weeks after the honey-flow, and is the most delicious, perfectly ripened article that can be produced at any price. Order to-day; and if you are not absolutely satisfied with this honey I will refund your money without asking any questions. Almost every sample sent this season has brought me an order. What pleases others will please you; therefore I do not charge for samples. If you appreciate a superior product at a reasonable price, let me hear from you. F. B. CAVANAGH, Boscobel, Wis.

FOR SALE.—To reduce stock I offer for sale as follows: 27 cases No. 40, and 44 cases No. 43 at $10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries, being extracted from select all-sealed upper stories. The partly full upper stories are being extracted by themselves (No. 38), and sold at a less price. Money can not buy better honey than lots No. 40 and 44. The above honey was gathered during June and the first half of July, and was extracted the week beginning Aug. 10. This left-on-the-hive-all-summer honey is sappy, rich, ripe. A free sample will convince you. Other lots at a less price; also a little comb honey left.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—150 cases of No. 1 comb honey, 15 sections in 3-inch glass, no-drip cases, 6 cases in a crate, very fine, at $2.00 per case, f. o. b. cars here. Also 8000 lbs. clover and basswood extracted, in new 60-lb. cans, 2 in case, very heavy body and fine flavor, at 8c, f. o. b. cars here. Sample free. Also extracted in 1-lb. Simplex jars, at $2.00 per dozen.
W. H. TOWNSEND, Hubbardston, Mich.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 9 c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Aug. 16 we finished taking off our clover, basswood, and button-willow honey. It is principally clover, fine and rich. Delivered at station in 60-lb. square cans, two cans to case; 8¾ cts. per lb. Reference, our postmaster or agent, Lakeville, St. Joseph Co., Ind., at which place address C. A. BUNCH.

FOR SALE.—New crop of fancy white-clover extracted honey, thoroughly ripened on the hives before extracting. None of better quality on the market. Put up in barrels, new 60-lb. tin cans, and smaller packages if desired. For prices, etc., address
EMIL J. BAXTER, Nauvoo, Hancock Co., Ill.

FOR SALE.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—5 tons of fine-quality comb and extracted. State amount you wish, and we will quote you our lowest cash price.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Choice white extracted honey, mostly clover and raspberry mixed, in new 60-lb. cans. Price on application. Sample, 10 cts. JAMES MCNEILL, Hudson, N. Y.

FOR SALE.—Fancy clover extracted honey in new cans, two in a case. Send 10 cts. for sample, which may be deducted from first order. EARL RULISON, Rt. 1, Amsterdam, N. Y.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan Ky.

FOR SALE.—I have 12,000 lbs. of fancy white-clover comb honey, put up in no-drip shipping-cases, crated for sale.
R. A. ELLISTON, Princeton, Ill., Rt. 5.

FOR SALE.—600 lbs. choice white-clover honey in 60-lb. cans.
R. HILLMAN, 1225 E. Eighth St., Brooklyn, N. Y.

FOR SALE.—White-clover honey of the finest quality, in new cans, boxed single, and holding 58 lbs. net each. Price per can, $5.50. Postpaid sample, 6 cts.
R. & E. C. PORTER, The Bee-escape Folks, Lewistown, Ill.

WANTED.—Fancy-white clover honey, comb and extracted.
BARRACKMAN & ROWE, Decatur, Ill., Rt. 2.

FOR SALE.—Carload of alfalfa honey in 5-gallon square cans.
WM. MCKIBBEN, Ontario, Ore.

FOR SALE.—Honey, clover, or buckwheat, comb or extracted. Write for price. Sample of clover extracted free. State quantity and quality desired. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Choice extracted clover honey for table use, in new square cans. C. F. LUFT, Ada, Ohio.

## Honey and Wax Wanted

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—Comb and extracted honey, any quantity. Alfalfa clover preferred. THE FRISBEE HONEY CO., Box 1014, Denver, Colo.

Mail small sample, giving quantity you have, how put up, and lowest cash price you will take for it.
E. R. PAHL & CO., Milwaukee, Wis.

WANTED.—We are in the market for No. 1 white extracted honey in any quantity. Correspondence solicited. State kind, quantity, and price asked. We also have for sale 60-lb. honey-cans, 2 cans in case. Both cans and cases in A1 condition, at 30 cts. per case. MICHIGAN WHITE CLOVER HONEY CO., 31-33 Griswold St., Detroit, Mich.

## Real Estate for Bee-keepers

FOR SALE.—Farm of 14 acres near city of 20,000; good soil, market, and bee pasture. L. C. HOOK Richmond, Ind., Rt. 3.

FOR SALE.—Fruit and vegetable farm; poultry and bees; healthy location; price $3500. R. ADDISON, Loughman, Fla.

FOR SALE.—A good paying bee business in Minnesota; with or without real estate; 400 colonies Italian bees, with all necessary up-to-date appliances.
A B C, care A. I. ROOT CO., Medina, Ohio.

FOR SALE OR RENT.—Bee-hive factory; waterpower, 85-horse capacity; trackage, yardage, 93,000 feet floor-space. Native basswood for sections can be bought for $3.00 to $5.00 per cord. Thick soft white pine for hives available at less than Eastern price. If interested, come.
W. H. PUTNAM, River Falls, Wis.

FOR SALE.—A 41-acre farm, improved; six-room house, one mile from county-seat. Also 500 colonies bees; fine condition; no disease. For particulars address B. F. YANCEY & SON, Angleton, Tex.

FOR SALE OR RENT—Farm, with 86 acres; 30 colonies of bees if desired; good fruit, fine water; 60 acres can be plowed; one mile from town; 10 minutes walk from Conneaut and Erie trolley line. Address W. E. PATTERSON, E. Springfield, Erie Co., Pa.

FOR SALE.—6 acres of land, 200 yards from flag station on railroad; 34 colonies bees; local honey trade; no opposition. Address
K. B. MORRIS, Whiteville, N. C., Rt. 3,

## Bees and Queens

FOR SALE.—Italian queens, untested, 50 cts. each.
W. SIMPSON, Meyer, Ill.

FOR SALE.—125 colonies of Italian bees, with honey, cheap.
F. M. JONES, 21 Price Ave., Lockport, N. Y.

Golden Italian queens by return mail, untested, 50 cts.; tested, $1.00. D. T. GASTER, Rt. 2, Randleman, N. C.

FOR SALE.—25 colonies of bees in Danzenbaker divisible hives. LEE A. WARNE, Waterloo, N. Y.

FOR SALE.—88 colonies of bees in a good bee location.
A. L. JOHNS, Harrisburg, Ark.

FOR SALE.—Mismated Italians at 25 cts. each.
C. G. FENN, Washington, Conn.

FOR SALE.—Fine select untested Red-clover and Golden Italian queens, 60 cts. each. F. M. MAYBERRY, Lederach, Pa.

FOR SALE.—50 stands of bees on wired frames, in Root's 8-frame chaff hives. Inquire of SAMUEL WILTSIE, Payne, O.

FOR SALE.—Select Italian queens, large and vigorous; bred for business; by return mail, 75 cts. each; 6 for $4.00; dozen, $7.25. Address J. R. MCCORKLE, Wingate, Ind. Rt. 5.

FOR SALE.—Improved Italian and Golden Mortgage-lifter queens. Tested and untested, $1.00 to $3.00.
BEST THE BEE-MAN, Slatington, Pa.

FOR SALE.—Italian, Carniolan, and Caucasian queens. Untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Stamps not accepted. EDWARD REDDOUT, Baldwinsville, N. Y.

FOR SALE.—Ten colonies beautiful golden-all-over and Carniolan bees; also hives, bee-books, etc. No disease.
S. I. TRASHER, Huntington, Mass., Littleville, Mass.

FOR SALE.—40 colonies of Italian bees in 10-frame L. hives, at $5.00 each; one 2-frame Cowan extractor, new, $10.00; 50 empty Danz. supers at 50 cts. EDWARD TRENT, Butler, N. J.

FOR SALE.—First-class apiary of 120 colonies with all supplies. Write for particulars to
J. B. HALL, Box 595, Woodstock, Ont., Can.

FOR SALE.—30 colonies of three-banded Italian bees, all in modern hives and in good condition. Address
WARNER'S BUSINESS SCHOOL, Elmira, N. Y.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

FOR SALE.—Untested Italian queens, 50 cts.; tested, $1.00; also one Novice honey-extractor and one Ferris wax-extractor, good as new. Cheap. For particulars address
W. J. FOREHAND, Fort Deposit, Ala.

FOR SALE.—Bees, 300 full colonies, first-class hives, each $3.75; three for $11.00. No disease. Must sell this fall. Empty Dov'd hives, $1.00; supers, 25 cts.; 4-frame extractor, $18.00 Other supplies. Extracted basswood honey, 10 cts. per lb.
L. M. GULDEN, Osakis, Minn.

FOR SALE.—To the highest cash bidder: 300 colonies in 10-fr. hives with 400 Danz. trimmed supers, 60 extracting-supers. extractor, 200 shipping-cases, 6000 trimmed Danz. sections, all Root goods; colonies heavy with honey, and crop on the hives, Red-clover bees. All bids must be in by Sept. 10.
H. A. ROSS, 1709 Upper Second St., Evansville, Ind.

FOR SALE.—350 colonies of bees in first-class order on easy terms. I would also sell an 82-acre farm, all in the best cultivation; three acres in orchard and good out-buildings. I would sell the same in 5 and 10 acre tracts on part payments. It is two miles from Caldwell, where the great government project is established. Caldwell is the liveliest city in Idaho. Great work is developing. I also offer a 9-room house and barn, and one block within half a mile of the main street, where I keep one of my yards of fancy poultry, also one river-bottom farm, 240 acres, rich soil, and good water-right; good location for bees. Write for particulars, as I can give you any information desired, for I have been in this country 24 years. OTTO GEISE, Caldwell, Idaho

FOR SALE.—Selected young Italian queens, bred for superiority in honey production. Single queen, 75 cts.; 6 for $4.00; one dozen, $7.50. Also golden-all-over, Cyprians, Carniolans, and Caucasians. JULIUS HAPPEL, 414 Fourth St., Evansville, Ind.

FOR SALE.—A choice lot of Italian queens, very yellow, reared from the Henry Alley Adel stock. Queens, $1.00 each.
A. D. TUTTLE, 114 Portland St., Haverhill, Mass.

FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. RAILS, Orange, Cal.

## For Sale

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—Orient motor buckboard, good running order, $100. W. J. TILYOU, Vanhornsville, N. Y.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Honey-extractor holding two frames.
MRS. J. R. ATCHINSON, London, O.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.
KENSINGTON CATTERY, Marion, Ohio.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—200 cases of 5-gallon cans. All are free from rust inside, and the majority have been used but once. Two cans in a case; 10 cases or more, 25 cts. per case.
J. E. CRANE & SON, Middlebury, Vermont.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

## Wants and Exchanges

WANTED.—Refuse from wax-extractors and old comb for cash.
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN QUEENS from imported mothers; red-clover strain, $1. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Order your bee-supplies from Superior Honey Co., Ogden, Utah, at Root's catalog prices. You save time and money. Largest dealers in the West.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

Have you seen Hand's queen circular? It's an eye-opener. Your address on a postal card will bring it. It will pay you to send for it. J. E. HAND,
Birmingham, Erie Co., Ohio.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.— Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# SPECIAL NOTICES

## BY OUR BUSINESS MANAGER

### WHITE SWEET-CLOVER SEED.

We have not yet secured enough white sweet-clover seed to supply our needs for the coming year. As this is the time for gathering it, we would be pleased to hear from those who have gathered, or can gather, seed which they have not sold. If gathered, mail sample, stating quantity you can furnish, whether hulled or unhulled. We have already contracted enough seed of the yellow variety.

### HONEY WANTED.

Notwithstanding the good crop of honey secured in most localities we have secured very little so far. We are getting numerous inquiries, and do not have the honey at hand to supply them. We would be please to get samples by mail, of extracted clover honey, with offers stating quantity and how packed. Write us, also with offers on choice comb honey, stating how packed, quantity, and grade, and the price asked.

### HANGER-CLEATS IN DANZ. HIVES AND SUPERS.

Instead of the usual hanger-cleat for Danz. brood-chambers and supers made 3⅝ wide and 3/16 thick we are planning to furnish a cleat ⅝ inch square let into a groove 1/16 deep inside of the end of supers and bodies, as a support for frames and section-holders. This will leave ⅝ inch space between frames or section-holder and end of hive or super above and below this cleat. As the bees have not bothered building bits of comb in this space above the hanger-cleat in the past, we do not believe they will do so below the cleat. Considerable material is saved, and the narrower support will facilitate the easy handling of frames and section-holders. If any one fears the result of so much space, a piece 3 inches wide by ¼ inch thick could be nailed in below the cleat, reducing the bee-space to ⅜ inch, and adding that much to the thickness of the end of the super or hive-body.

### UNTESTED QUEENS.

We desire again to call attention to the fact that the past season was exceptionally favorable to the production of high-class queens, both as regards quality and quantity. For this reason we believe this presents a golden opportunity for many bee-keepers whose queens are failing from old age or hard work. By inserting a young queen in place of an old one we secure a sort of insurance for next year. A young queen winters better, commences to lay earlier, and is less likely to swarm next breeding season. Moreover, there is always a probability of an old queen dying at a very inconvenient season when queens are very difficult to procure. Just at present queens can be bought for little money and may be introduced easily because the supers are off in most apiaries. We have a large stock of untested queens ready to mail, so there will be no delay; in fact, will ship by return mail when so ordered. Price of one queen, $1.00; six, $5.00; twelve, $10.00. Prices quoted on lots of 50 or 100.

### DISCOUNTS FOR EARLY CASH ORDERS.

As usual at this season of the year we are prepared to reward those forehanded people who not only have faith in the future but who can tell before their bees begin to swarm in the spring something near what they are likely to need for the coming season—people who like to avoid the worry of delay in the hands of the transportation companies or excessive express charges on goods ordered the last minute because they can not wait for freight to arrive—people who prefer to take leisure time during winter to prepare the supplies for use the coming season. After such a bountiful honey crop as has been gathered in most sections the past season there ought to be a much larger number than usual who will take advantage of the liberal early-order discounts which we are offering for out-of-season cash orders. On all orders accompanied by cash received during the month of September, and subject to conditions named below, we allow 7 per cent discount.

On October cash orders we allow 6 per cent discount.
" November " " " " 5 " " "
" December " " " " 4 " " "
" January " " " " 3 " " "
" February " " " " 2 " " "
" March " " " " 1 " " "

This discount will apply on all articles listed in our regular catalog at current corrected prices to date except as follows;

Tinned wire, paint, Bingham smokers, Porter bee-escapes, glass and tin honey-packages, scales, bees and queens, bee books, papers, labels, printed matter, bushel boxes, seeds, and specialties not listed in our general catalog. Where any or all of these articles in a general order do not exceed fifteen per cent of the whole order the discount may be deducted from the whole order, including these items which are otherwise excepted.

### CHANGES IN SUPPLIES FOR THE SEASON OF 1908–'9.

In addition to the changes in our honey-extractors already announced, with the increase in price made necessary by the improvements, we desire to call attention to some further changes in styles and prices.

On another page we show an improved shipping-case with sliding cover and corrugated paper in bottom in place of drip-sticks. In connection with these improvements we propose to make the width of our cases for 4¼ sections just right for the standard 1⅞ beeway section instead of making them, as heretofore, wide enough for a 2-inch section. The great bulk of beeway sections used are 1⅞ wide, and the standard case should fit that section. Those desiring cases for other widths should have them cut to order. For 24 sections, 4¼x1⅞, the case will be 11⅜ inches, 4 row; for 24 sections, 4¼x1½, or 20 sections 4¼x1⅞, the case will be 9⅜ inches, 4-row. The 12 and 10 inch 2-row cases will be likewise reduced to 11⅜ and 9⅜. The slide-cover cases with corrugated packers for bottom will be one cent each more than the regular old-style case for the present. Eventually we hope to have but the one style at regular price.

There has been a growing demand for a hive-bottom ⅞ inch thick instead of ⅜, and we plan to make the ⅞-inch the standard for the coming season. Until stock in dealers' hands has been disposed of, orders may be filled with either style unless the one ordering states a preference with his order.

There have been so few calls for the double-air-spaced paper-covered cover that we expect to drop it out of the list. This is a most excellent cover, but it is a lot of work to put it together properly. Even if not listed, most dealers will be able to furnish those who prefer it from stock on hand. The price of brood-frames will be advanced a little. Hoffman frames will be $2.90 per 100; thick-top staple-spaced frames, $2.70 per 100; metal-spaced frames, $3.40 per 100; Danzenbaker frames, $2.70 per 100; shallow Danzenbaker frames, $2.50 per 100.

We do not change the single and five rate on hives and parts of hives; but larger quantities will be advanced over the rates formerly made, making a smaller difference in price between 5 and 10 and between 10 and 25.

Enamel cloth is advanced to 30 cts. per yard; $3.00 per piece of 12 yards.

Observation hives, nailed and varnished, will be increased in price to $9.00 for 8-frame complete; $8.50 without frames; supers complete, $3.25; hive without super, $6.00. Brood-chamber complete, $4.50; the same without frames, $4.00. We are making an improved style of one-frame observation hive with movable side panel, similar to the large size. Price, without super, $3.00; with super, $3.50. We find by our factory-cost system that, having spared no pains or expense in getting these first class in every respect, we have been selling them less than cost; therefore we are obliged to advance prices as noted.

# Special Notices by A. I. Root

Has *your* town settled the "wet and dry" question?

### THE WRIGHT BROTHERS AND THEIR FLYING-MACHINE, NOT ONLY "OUT IN THE OPEN" BUT "UP IN THE AIR."

While your eyes rest on these words the probabilities are that the Wright Brothers will be "up in the air," both in Europe and America. For the first time they permit photographs to be taken of the entire machine. We have space just now to quote only the following (in regard to Wilbur Wright in France) from the Chicago *Daily News:*

"On a carpenter's table in the shed are vases of fading flowers brought by women admirers from gardens near the sea. There, several unopened bottles of dry champagne share space with copper wire, a lathe, wrenches, a roll of canvas. All will be used but the champagne, for Wright, who does no stroke of work on Sunday, touches neather alcohol nor tobacco."

May God grant that no untoward accident may happen to these two intrepid brothers who not only have the eyes of the *mechanical* world directed toward them, but who are setting such a good example in the way of *morals* before the young inventors of the world, as is indicated by the above newspaper clipping. See the daily paper and magazines for an account of their doings.

### "MIRACLE" WHEAT.

Since page 1016 of this issue was printed we see that the *Saturday Evening Post*, of Philadelphia, in its issue for August 15, has given a full page, with stunning illustations, in regard to this wonderful wheat. The *Ohio Farmer*, in commenting on it, says, "No one but a fool or a swindler will announce a new kind of wheat guaranteed to produce 200 bushels to the acre under average conditions." The *Farm and Fireside* and other agricultural periodicals are turning in to show up this gigantic swindle. Meanwhile the public would like to know whether the *Evening Post* (and other periodicals that have been giving countenance to such schemes) is a "fool" or in the "swindling" business.

*Still later.*—To-day, August 29, just as we go to press we find that a representative of the *Spokesman Review*, of Spokane, Washington, has hunted up this celebrated man, Abraham Adams, of Juliaette; and while they could get nothing very definite from Mr. Adams himself, the men who thrashed his wheat gave figures to the effect that his yield was about *26 bushels to the acre.* How does that sound, compared with 222 bushels, and the other statements in the *Manatee River Journal*, the *Saturday Evening Post*, and *Judicious Advertising.*

### RATS AND MICE—A LITTLE MORE ABOUT THEM.

On reading over the matter on page 1018 I notice I have not yet considered a hopper feeder for *small chickens* that will keep out rats and mice. In fact, so far as I can see, it is a hard question to solve. The small chickens can not get into the cans I have described, and just now I do not see how we can arrange any sort of apparatus that will admit small chickens and yet keep out rats and mice. When we come right down to it, there should be no rats and mice in the neighborhood. There are none in our neighborhood at the present time; but I am expecting every day to find them around. Quite small chickens will soon learn to go upstairs in that little poultry-house; and this arrangement heads off the sparrows and as yet offers some discouragement to rats and mice, but probably not very long. As I have said before several times, if you persistently fight rats and mice, and keep right at it day after day and week after week, they will very soon decide, evidently, that yours is an unhealthy locality for rodents. If any of our readers can explain to me how a hopper feeder can be arranged for small chickens, and yet be mouse and rat proof, I should be glad to be informed.

## KIND WORDS.

*The A. I. Root Co., Medina, Ohio—Gentlemen:—*

I received of you to day ten queens in fine order. Only one dead bee in all the cages. The queens are fine-looking ones. Thanks for promptness. F. GREINER.
Naples, N. Y., Aug. 18.

The shipment of nuclei arrived in good condition. I transferred them at 4 A.M. on Thursday, and by sunrise they began to get busy. I am greatly pleased, as I find they are beautiful and gentle, and they are certainly good workers. In short, it is just what I wanted. FRANK ZIEGLER.
Rochester, N. Y., May 24.

We received the five queens in fine condition, with no dead or feeble bees in the lot. Many thanks. C. C. THOMAS.
Riverside, Cal., Aug. 15.

The forty queens were all received in fine condition, and, so far as I have noticed, all have turned out well with the exception of one, which turned out to be a drone-layer. I lost but one of the forty queens in introducing. PETER RIESTER.
Auburn, N. Y., July 10.

The five frames I received last week arrived in fine order, and are working finely. They are the gentlest bees I have ever handled, and I do not need any smoker or veil with them. Thanks for your prompt shipment. C. F. CARPENTER.
Bay St. Louis, Miss.

The queen arrived all right in fine order. Many thanks for your prompt shipment. MRS. W. H. SARVEY.
Clarion, Pa., May 11, 1908.

The red-clover bees which you sent me last August are doing very well. I never saw gentler bees than they are, and they are good workers. I can handle them without any smoke, veil, or gloves. They will not leave the frames. G. M. SEIFERT.
Northampton Heights, Pa., July 7.

The nucleus came promptly in good condition. The queen is all right and is now laying. I was certainly "beat" when I came to handle them. I can roll up my sleeves, and, without a veil, open the hive and take the bees off my hands without getting a sting. I call those pretty tame bees.
Belden, O., Aug. 11. MERTON E. GRAHAM.

## Convention Notices.

Bee-keepers in Alabama, Florida, Georgia, Mississippi, and Tennessee, also points along the route, who will join the party of a carload to attend the National Convention at Detroit, Mich., Oct. 13—15, will please write us for rates, etc. This promises to be the best convention yet, and is to your interest to attend.
Elamville, Ala. WM. S. MCKNIGHT.

The annual meeting of the Kansas State Bee-keepers' Association will be held at Hutchinson, Sept. 16, 10. The first session will be held at 2:30 on the 16th. This meeting occurs during the State fair, and it is hoped that a large number of bee-keepers will be present. Several noted bee-keepers from different parts of the country have promised to attend.
Topeka, Kan. O. A. KEENE, Sec.

### HAS DEALT WITH ONE HONEY FIRM FOR OVER 30 YEARS.

[It is not often that we put in a free ad. for any honey-dealer; but the firm of R. A. Burnett & Co., of Chicago, has left such a good record that we think we are safe in publishing a letter that was sent to that firm recently, especially as the writer puts himself entirely in the hands of the firm to do the best thing possible for him. The letter is as follows.—ED.]

*R. A. Burnett & Co:*—I have this day sent to you by freight 58 cases of extracted white-clover honey, 120 lbs. of honey net in each case. Please close out the honey as soon as possible, as I am in need of the money. Your firm has handled my honey for over 30 years. F. W. HOLMES.
Coopersville, Mich., July 25.

THE CELL THAT SELLS AND EXCELS IS FOUND IN

DADANT'S FOUNDATION

DADANT'S FOUNDATION and DADANT'S FOUNDATION

BEE SUPPLIES

DADANT & SONS.
Hamilton, Ill.

# FOR OVER 25 YEARS

our make of goods has been acknowledged to be in the lead as regards WORKMANSHIP and MATERIAL.

## Our AIR-SPACED HIVE is a most excellent winter hive,

and fully as good and convenient for summer management as the single-walled. Same inside dimensions as regular Dovetailed hives; all inside material interchangeable with Dovetailed hives.

## We manufacture full line of BEE-KEEPERS' SUPPLIES.

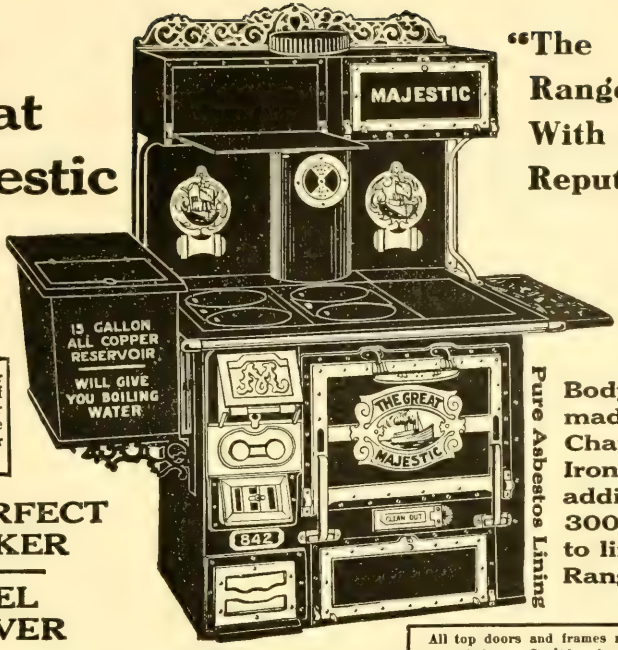
| | | | |
|---|---|---|---|
| FALL AND WINTER DISCOUNTS: | Sept., 7 per cent. | Nov., 5 per cent. | Jan., 3 per cent. |
| | Oct., 6 per cent. | Dec., 4 per cent. | Feb., 2 per cent. |
| | | | Mar., 1 per cent. |

Catalog free.

## W. T. FALCONER MFG. CO., Jamestown, N.Y.

# The Great Majestic

"The Range With A Reputation"




With water fronts if wanted for pressure or other boilers.

**PERFECT BAKER**

**FUEL SAVER**

Pure Asbestos Lining

Body made of Charcoal Iron, adding 300% to life of Range

All top doors and frames made of malleable iron. Can't break or crack.

***You*** don't buy a range every year. Therefore when you ***buy*** one, ***buy*** the ***best.*** At first the Great Majestic may cost you a very little more than an ordinary range, but in the end it is ***much cheaper.*** It has ***durability*** and will out-last three ordinary ranges. It is scientifically built—***no heat can escape or cold air enter***—will ***save half*** on your ***fuel bill.*** A perfect baker—***not one day good—next day poor—but always uniform.*** Will save you from disappointment and poorly cooked meals. Your Best Guarantee: 1st—The reputation of the plant behind the range. 2d—Hundreds of thousands in use every one giving satisfaction. We want you to see ***The Great Majestic.*** If no dealer near you has it, write us—we will send you free our booklet "Range Comparisons," and tell you where you can see a Majestic—the range that gives satisfaction and out-lasts all others.

**THE MAJESTIC MFG. CO., St. Louis, Mo.**

***The Great Majestic Is For Sale In Nearly Every County In Forty States***

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## THE "BEST" LIGHT

MAKES and burns its own gas. Produces 100 candle power light—brighter than electricity or acetylene—cheaper than kerosene. No dirt. No grease. No odor. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog. Do not delay.

**THE BEST LIGHT CO.**
**306 E. 5th St., Canton, Ohio**

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## SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"

The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

**F. E. Myers & Bro.,**
**Ashland, Ohio.**

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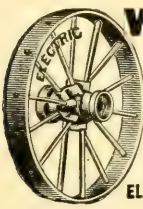


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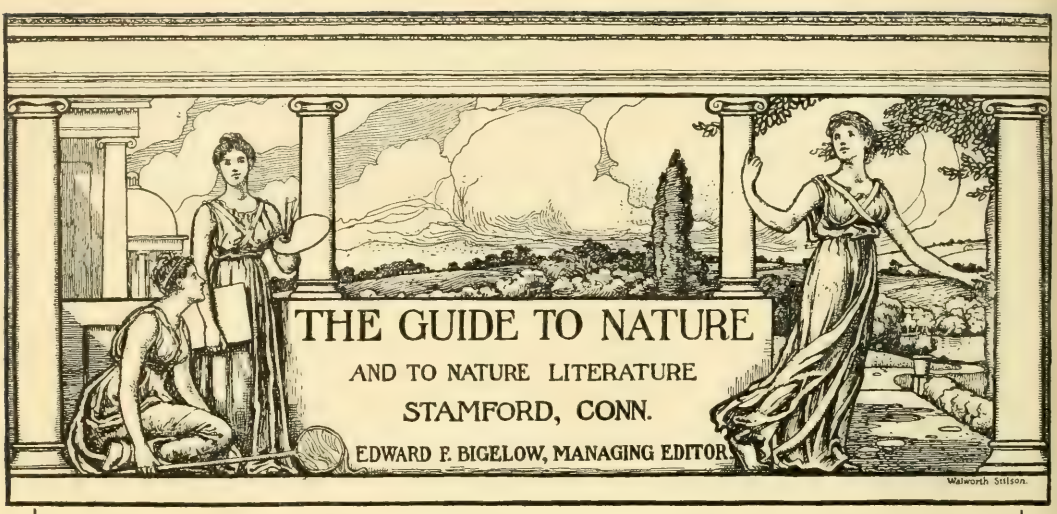
**Electric Handy Wagon.**

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

**ELECTRIC WHEEL CO., Box 95, Quincy, Ill.**




# Four Great Special Numbers

## SEPTEMBER, OCTOBER, NOVEMBER, and DECEMBER, 1908

**A second great enlargement and improvement.** With the June issue The Guide to Nature commenced its second era (of three months) with so many improvements as to surprise delightfully every patron. Beginning with the September number there is another decided advance, and the numbers for September, October, November, and December will eclipse all previous efforts in value and interest to readers.

There is to be a new and beautiful cover, and many other mechanical improvements. We have in hand and there are promised a large number of interesting articles and expressive photographs. Several new features which we are not yet free to announce are in preparation. The September number will surprise and delight.

It has taken a few months to "find ourselves." But we can tolerate the delay in the satisfaction that we are doing the "finding." It takes a little time to get under full headway. By the September issue we shall have had that time.

The magazine just as it is in June, July, and August is of higher grade than any other nature magazine ever published. It fits the present increasing interest. We have full confidence that those who know the magazine agree with that statement.

Neither the Prospectus nor any form of announcement can fully portray the merits of the magazine. We ask a fair trial and your hearty co-operation. Let the magazine speak for itself, and let us have the benefit of your suggestions and criticisms.

Single copy—15c. One year—$1.50. Less than one year at single-copy rates, with the exception that, to new subscribers only, is offered a four months' trial for 50c.

Massachusetts Agricultural College

# Gleanings in Bee Culture

BEE-KEEPING IN SOUTH AFRICA—*Courtesy of W. N. Scott, Queenstown.*

***Published by The A. I. Root Company, Medina, Ohio, U. S. A.***

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI September 15, 1908 No. 18

# One-Color Honey-Labels

Gross Weight .....Lbs. .....Oz.

Case Weighs .....Lbs .....Oz.

Honey Weighs .....Lbs. .....Oz.

No. 60.—250, 25c; 500, 40c; 1000, 75c; gummed. If wording is changed same price as No. 62.

**Take Notice!** This honey will candy or become white and hard, as soon as it becomes cool, or cool weather begins, and this candying is, in fact, the best proof of its purity. To restore it to the liquid form, set it in hot water, not hotter than you can bear your hand in. To overheat or boil the honey spoils the flavor. When melted, remove and cork or cover again. If sealed up while quite hot with a cork dipped in melted wax [or with the inside of the cover waxed], it will usually not candy again. When putting the bottles in hot water place them on strips of wood to prevent breaking.

No. 61.—250, 25c; 500, 40c; 1000, 75c; gummed. If wording is changed same price as No. 62.

TAKE NOTICE.—As manufactured adulterated honey can not be made to imitate the granulation or "candying" of pure honey, granulation has been found to be the only ready test of pure honey. I therefore do not ship extracted honey before it is thoroughly granulated by cold weather: I WARRANT every pound of honey put up and shipped by me to be absolutely pure honey as collected from the blossoms by the bees. To restore to the liquid form and retain its original honey flavor, set the can in warm water and remove cover, but do not heat honey to boiling point. Let cool before using.

P. W. STOWELL, Otsego, Michigan.

No. 62.—250, 45c; 500, 65c; 1000, 90c; ungummed; wording changed to suit

PURE HONEY

From the Apiary of

M. A. HENRY

Linesville, Crawford Co., Pa.

No. 63.—250, 45c; 500, 65c; 1000, 90c; ungummed; wording changed to suit.

## Display Cards for Honey

HONEY

NEW CROP

Absolutely Pure

Printed on cardboard, size 7x9 inches. We can furnish these in packages of 10 for 10 cts. postpaid. Any number additional 1 cent each. Not less than 10 furnished Put one of these in each store where your honey is sold and see the result.

Wording can not be changed.

PURE EXTRACTED

HONEY

FROM THE APIARY OF

J. D. HORTON

Bloomingdale, Mich.

No. 64.—Wording changed to suit. 250, 65c; 500, 90c; 1000, $1.25.

**The A. I. ROOT CO., Medina, O.**

**Send for Complete Catalog of Forty Different Labels, Free on Request.**

## SAVE 30 TO 60 PER CENT. BUY DIRECT. BUILDING SUPPLIES OF EVERY KIND

**The Chicago House Wrecking Co. Purchased at forced sales, 50,000,000 feet of new lumber.** We are making special concessions to those who buy at once. Our prices today are far lower than prices have been for years. Order now for immediate or future use. Quick action will save you big profits. Remember prices elsewhere which are even now high, are bound to rise. We can quote you 30 to 60 per cent better prices for the same lumber than your local dealer. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouse and yards at Chicago and see the lumber we are offering and you will recognize that it is all we say of it. Make your own selection and see it loaded. It is not necessary to come to Chicago, however, unless you wish to. **We can fill your order by mail** with just what you want and guarantee you absolute satisfaction. Ours is the largest direct to the consumer lumber headquarters in the world. We sell millions of feet annually. Orders filled from every part of the United States. No matter where you live you can save money by supplying your building wants here.

We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can save you money on it. Our tremendous business of millions of dollars annually is your best guarantee of complete satisfaction of every purchase made from us. In our enormous stock of new lumber of every kind we have just what you need for every purpose. Don't buy a stick of material until you get our prices. We offer you everything in the lumber and building supply line needed for residences, farm homes, stores, churches, barns, outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 60 per cent less than your local dealers or lumber yards ask for it.

## IMPORTANT! Send Us Your Lumber Bill For Our Estimate

Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which means sacrificed prices and enables us to sell even as low as cost without loss. You take no chances in dealing with the Chicago House Wrecking Company. Whether for $1 or $10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

We also furnish you building and barn plans absolutely free upon request. Write us for any information or advice you want and we will have our staff of architects answer every inquiry promptly. Our free book of plans is sent if you mention this paper. We simplify your building proposition.

Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of every detail. That is what our Special Builder Service is for. Be sure and send us your lumber bill for our estimate. Feel free to write for anything you want to know along the line of building supplies, furnishings, etc.

## WE PURCHASE OUR GOODS AT Sheriffs' and Receivers' Sales

***Hundreds of Big Money Saving Bargains for Every Builder. Don't Build Your House, Barn, Store, Corn Cribs, Church, Etc., without getting Our Big Lumber Offer. Lowest Prices on Millwork Supplies, Roofing, Water Supply Outfits, Paints, Plumbing Supplies, Hardware, Heating Outfits, Furniture, Carpets, Linoleum, Etc.***

## DOORS 40c WINDOWS 20c

1,000 good doors, various sizes, secured by us in connection with dismantling operations, most of them with hardware. Prices range from **40c** up. Fancy front doors, all designs, **$1.50** up. 10,000 window sash, **20c** up, all sizes, Complete line of everything in mill Work. All brand new, best quality. Barn sash, 6 sizes, **25c** up. Cellar sash, **37c** up. Clear yellow pine mouldings, **25c** per 100 ft. up. Porch columns, **54c** up. Stair newels, **$1.78.** Stair rail, **10c** per ft. Pilaster casing, O. G. base, **1 3-4c** per ft. Base blocks, **4c** each. Quarter round, **25c** per 100 ft. Hardwood thresholds, **4c.** Porch brackets, **3c.** Porch spindles, **4c.** We handle everything in the Building Supply Line, including light and heavy hardware. **Send us your lumber bill for our estimate.** Ask for our new special mill work catalog. It prices everything needed for building purposes. Sent free.

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$1.25 per sq. Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Weather-proof and fire-proof. We furnish with each order sufficient cement to make the laps and large head nails. Price is per sq. of 108 sq. ft. 1 ply, $1.25. 2 ply, $1.40. 3 ply, $1.75.

## OUR NEW 500-PAGE CATALOG NO. 688 FREE.

**This Wonderful Bargain Book** is just out and ready to be sent to you at once. It is a book such as every shrewd buyer must have. **500 Pages** with thousands of items of the very best merchandise and supplies bought at the Sheriffs' and Receivers' Sales. It will pay you to keep it handy. Its pages contain a full record of what we still have on hand from the wonderful St. Louis Worlds' Fair. Merchandise, Machinery and Supplies, articles for every one. You will find it useful in the home, in the workshop or in the office. Write today. **Cut out coupon in corner.** Fill in answers to questions. Sign your name and address in full and mail to us. We will send you our Catalog free upon receipt of coupon and answers to questions.

***CHICAGO HOUSE WRECKING COMPANY,***
***35th and Iron Streets, CHICAGO, ILL.***

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I saw this advertisement in Gleanings in Bee Culture.

Send me free of all cost your 500-page Catalog. Address

**Chicago House Wrecking Co., Chicago**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possib e, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storag - by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

ZANESVILLE.—Honey continues to move rather slowly, due to the general business stagnation. Producers seem to be holding for higher prices than the condition of the market warrants. No. 1 to fancy comb brings wholesale 17 to 18; extracted, 10. Beeswax brings on arrival 28 cts. cash or 30 in exchange for bee supplies. EDMUND W. PEIRCE, Zanesville, O.
Sept. 8.

INDIANAPOLIS.—The demand for the best grades of honey is good. Producers are offering fancy white comb honey at 12½; No. 1 white at 12; white-clover extracted, in five-gallon cans, at 7; very little demand for amber at any price. Many bee-keepers seem to be holding their honey for higher prices. Beeswax is steady at 28 cts. cash, or 30 in exchange for merchandise.
Sept. 5. WALTER S. POUDER, Indianapolis.

SAN FRANCISCO.—Small lots of honey are still coming into the market, and the better grades of comb and extracted find a ready market at former prices. Low grades, while dull, are also well sustained in value. Packers are paying 5¾ to 6½ for extracted, and 11 to 13 for comb, while stock in this market moves at the prices quoted: Water-white comb, 16 to 17; white, 15; Water-white extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5⅓.—*Pacific Rural Press*, Sept. 5.

KANSAS CITY.—The receipts of comb honey are light; in fact, our demands are heavier than our receipts. The receipts of extracted are light—demand fair. We quote No. 1 comb honey, white, 24-section cases, $3.25; amber, $2.75 to $3.00; extracted, white, 7½ to 8; amber, 7 to 7½; beeswax, 28.
C. C. CLEMONS & Co.,
Sept. 3. Kansas City, Mo.

CHICAGO.—We quote our market to-day on comb and extracted honey as follows: Fancy white-clover comb honey (24-section no-drip flat cases) 16; No. 1 white, same as above, 14 to 15; No. 2 white and light amber, 11 to 13; extracted white clover, in 60-lb. cans, 7½ to 8; the same in barrels, 7 to 7½. Beeswax, choice and pure, 28 to 30.

Certainly you understand that, with heavier arrivals of comb and extracted honey, we do not expect to see the above prices sustained, and it behooves you to get your honey on the market as early as possible, to take advantage of present prices.
Aug. 20. S. T. FISH & CO.

CINCINNATI.—The marked decrease in the demand and consumption of honey this season is not due to an oversupply; but after careful investigation of the conditions we find there are two causes. In the first place there was more white comb honey shipped last year from the West into the Eastern markets than could be sold, and even to-day there are stocks of it still remaining in every market of any importance. On the other hand, the consuming trade has not wanted as much comb honey as was supposed would be the case, and for these reasons that article is going begging. Fancy No. 1 comb honey is selling at 12½ to 16. Lower grades must be sold at a sacrifice. The extracted-honey market is experiencing the same conditions, and is undergoing the same ordeal. Quote amber honey at from 5½ to 7 in barrels, according to the quality and quantity purchased. White clover is selling at from 7½ to 9½, according to the quantity.

For beeswax, from good to choice, we are paying 27 cts. delivered here. This must be free from dirt.
Cincinnati, O., Sept. 12, 1908. THE FRED W. MUTH CO.

NEW YORK.—The new crop of York State comb honey is now beginning to arrive in small quantities, and the quality appears to be very fine, especially choice white stock. While our market has not opened up as yet, and will not before about the first week in September, prices are unsettled and uncertain. We are having some demand for fancy and No. 1 white at prices ranging from 13 to 15, according to quality and style of package. No new buckwheat is on the market as yet, but we are informed that the crop will probably be quite large. A great many bee-keepers seem to think that comb honey ought to sell at the same price as last year and before, not taking into consideration the fact that comb is a luxury and not a necessity, nor do they seem to take into consideration the general depression in business. We do not expect as good a demand as last year, nor do we think that last year's prices can be realized.

Arrivals of extracted honey have been quite free from the West Indies and the South, and the demand is fair. Prices obtained we consider full market value. We quote average grades from 58 to 65 cts. per gallon; fancy grades, 70 to 75. No new crops from near by are on the market yet, nor California. We have several cars now in transit, due here the first of September. We quote California sage at 9; orange, 8 to 8½; light amber, 7½ to 8.

Arrivals of beeswax are quite heavy, and the market shows a downward tendency. Prices are likely to go still lower. We quote 28 to 30. HILDRETH & SEGELKIN,
Aug. 22. New York.

SCHENECTADY.—No new comb honey on our market yet, and but little demand, as many dealers carried over some stock which they are anxious to work off before buying the new crop. However, it is well to have some on hand for first customers.
CHAS. MACCULLOCH,
Aug. 25. Schenectady, N. Y.

DENVER.—The crop in Northern Colorado is almost a failure. There will be but little more than what the home market requires in this section. We quote No. 1 white comb honey, in 24-section cases, at $3.15 per case; No. 1 light amber, $3.00 per case; No. 2, $2.85 per case; strained and amber extracted, 6¾ to 7¾; light amber, 7½ to 8¼; white extracted, 8½. We pay 24 cts. for clean yellow beeswax delivered here.
THE COLORADO HONEY-PRODUCERS' ASS'N,
Denver, Aug. 25. F. Rauchfuss, Manager.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department,

Washington Blvd. & Morgan St.
CHICAGO, ILL.

# Our Wants are Unlimited.

Mail us a sample of your

# EXTRACTED HONEY

either amber or fancy; and name your lowest cash price per pound delivered here. We buy every time the price justifies, no matter if it is one barrel or a car load, and remit the same day shipment comes to hand.

**The Fred W. Muth Co.**

THE BUSY BEE-MEN

51 Walnut St. Cincinnati, O.

# HONEY WANTED

both
**Comb and Extracted**
of all kinds.

No shipment too large for us. Send samples, and state best price delivered here. We remit as soon as goods are weighed in. Best of references furnished. Don't sell until you quote us price; it will be to your interest. Large stock of Root's bee goods carried constantly on hand. Greatest shipping center in the United States—both rail and boat. Try us.

**Griggs Bros. & Nichols Co.**
523 Monroe St. . .. Toledo. Ohio

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

**HILDRETH & SEGELKEN,**
266-267 Greenwich St 82-86 Murray St
NEW YORK.

Our market now ready for

# HONEY

Write us. Will sell for you at highest market price, or hold for your price and make liberal cash advance. Commission five per cent. .:. .:. .:. .:.

**H. R. WRIGHT**
ALBANY, N. Y.

# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT CO., Medina, Ohio.
J. T. CALVERT, Business Manager.

$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.


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An extraordinary offer of special interest to every reader.

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CAN YOU IMAGINE A MORE INTERESTING HOME QUARTETTE?

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WE WILL SEND THE ABOVE QUARTETTE FOR **$1.50.**

**PICTORIAL REVIEW.** A monthly beautifully illustrated. A few of the many departments and features: Home Care for Common Ills; Marketing for the Month; Kitchen Step-savers; Labor-saving Suggestions; House-building Plans; Millinery Lessons; Flower Gardens. Special Articles: Newest Fashions; Styles for Children; Home Dressmaking Lessons; Recipes; Home Furnishing; Entertaining and Etiquette; How to Earn Money at Home, etc.

**LADIES' WORLD.** A monthly; an ideal publication for women and the home. A thoroughly practical household magazine, and treats of every subject of interest to women. Clean and wholesome, elevating in tone and entirely free from sensationalism. An up-to-date dressmaking and pattern department.

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This offer is open for thirty days only. All orders MUST reach us by October 1st. Do not delay. Send NOW. Present subscribers to this paper can have GLEANINGS sent to some bee-keeping friend, and the other three papers to their address.

**THE A. I. ROOT COMPANY, : : : MEDINA, OHIO**

# Reasons for the Price
## OF MY
# Raspberry Honey.

I ask ten cents a pound for my raspberry honey. This is slightly above the market price, but there are reasons.

In the first place, very little raspberry honey is produced. It is a novelty—something out of the ordinary—like orange-blossom honey for instance.

In addition, it is of very superior quality; so much so that it was awarded the gold medal, in competition with other honeys, at the Jamestown Exposition. It has a flavor all its own—a flavor that smacks of the wild red raspberry of the woods.

Another most important reason why I should get a good price for my honey is the manner in which it is produced. It is left on the hives for weeks after it is sealed over, and thus acquires that finish, that smooth, oily richness, that thick, rich deliciousness that can be obtained in no other way.

It costs more to produce such honey, there is not so much of it, and it is worth more than the ordinary honey; just as big Northern Spy apples, streaked with crimson and filled with juicy spiciness, are worth more than ordinary fruit.

As a finishing touch the honey is put up in bright new 60-lb. tin cans, securely boxed, and the boxes bound with iron so that they will bear shipment; in fact, I will guarantee safe arrival in perfect condition.

For a single 60-lb. can the price is $6.25; for two cans in a case (120 pounds) the price is $12.00 a case, regardless of the number of cases that are taken.

If you are not acquainted with this honey, send me ten cents and I'll mail you a generous sample, and the ten cents may apply on the first order that you send.

**W. Z. HUTCHINSON, Flint, Mich.**

# HONEY-JARS
## from
## New York City

We consider the No. 25 jar with solid metal cap and waxed liner the best jar made for honey.

Gross crates . . . . $5.00; 5 gross, $4.75 per gross.
12-oz. screw-cap jar . . 4.50; 2 gross, 8.25 per gross.
1-lb. sq. jar with cork . 5.00;
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**SAVE FREIGHT!**
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by ordering your supplies in **Boston**

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**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen nursery, and queen-rearing outfit. Queens from Imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** 160 Newton Ave. N. **Minneapolis, Minn.**

**1884 1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . .

**J. M. Jenkins**
**Wetumpka, : : Alabama**

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**THE PRACTICAL FARMER**
**P. O. Box 1317 PHILADELPHIA, PA.**

# GLEANINGS IN BEE CULTURE

E. R. ROOT, Editor — A. I. ROOT, Editor Home Department — H. H. ROOT, Ass't Editor

Department Editors:—DR. C. C. MILLER, J. A. GREEN, PROF. A. J. COOK, J. E. CRANE, "STENOG," LOUIS H. SCHOLL, G. M. DOOLITTLE, R. F. HOLTERMANN, W. K. MORRISON.


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OUR CLASSIFIED ADVERTISEMENTS.

We have frequent letters like the following:

Enclosed find $1.50 for our three-line "want" advertisement in your Aug. 15th and Sept. 1st issues. Please discontinue it at once, as the first insertion secured us three cars of honey, and more is offered us by nearly every mail.

Denver, Col., Sept. 4. THE FRISBIE HONEY CO.

If you have honey to buy or sell, no other paper published can put you in touch with interested parties as well as GLEANINGS. Rates, 25 cts. per line per issue.

CALIFORNIA FRUITS FOR ALL.

We all appreciate California fruits. Time was when there existed a prejudice against fruit produced in irrigated regions; but that has passed away for ever, and there are very few of us who do not relish California fruits — fresh, canned, or dried. The amount of fruit from the Golden State which reaches the States east of the Rockies is something stupendous. For example, there were 133,440,000 cans of fruit; 140,000,000 lbs. of raisins; dried fruits, 254,375,000; figs, 6,000,000 lbs.; prunes, 180,000,000 lbs.; oranges, 30,000 carloads; olives, 750,000 gallons; olive oil, 200,000 gallons; walnuts, 14,000,000 lbs; celery, 3000 carloads; cabbages, 500 carloads; cauliflower, 350 carloads; beet sugar, 163,800,000 lbs.; butter, 5,000,000 lbs., and a number of smaller items, shipped eastward last year from California.

It is the opinion of experts, however, that the trade might be greater. The long haul and the large number of hands the goods pass through cause the prices to be too high in many instances, and in some cases the goods are kept too long and are not fresh. To overcome these two difficulties the California Fruit Products Co., of Colton, Cal., has set itself. The manager of this concern proposes to deal direct with the people who consume California fruits, and thereby eliminate the middleman altogether when dealing with thrifty people. Last season was their first, but they were phenomenally successful, and orders poured in on them from every State. This season they will put up dried fruits in 2-lb. cartons with 25 of these in a box, making 50 lbs. in all. The cartons are assorted to suit. They also have assorted boxes of canned fruits (two dozen in a case), of apricots, peaches, pears, and plums. They also supply pure extracted sage and orange honey. In nuts they supply almonds and walnuts. *They prepay the freight.* Note the latter point. We imagine such an enterprise is bound to succeed. Doubtless many of our readers will be glad to favor the California Fruit Products Co. with a trial order.


4% A request on a postal will bring you our free booklet

Established 1892

BANKING BY MAIL

We will pay you 4 per cent—compounded twice a year on your savings account whether large or small—secured by assets of over $700,000. Managed by prudent and successful business men, and subject to and incorporated under the rigid Ohio State banking law. Under ordinary circumstances all or any part of your deposits may be withdrawn at will.

*Send for the booklet to-day.*

THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

**"If goods are wanted quick, send to Pouder."**
**Established 1889**

# QUALITY.

*By the Bee Crank*

I am offering a discount of 7 per cent on bee-supplies sent out this month for next season's use. Next month the discount will be 6 per cent. I am very glad, for several reasons, that many bee-keepers are taking advantage of the liberal discount. I am securing a good share of the business because I have been giving my customers more for their money than many of them have been in the habit of securing elsewhere. The saving will represent an excellent investment for any bee-keeper, and with me it will be a great help by relieving the strain that comes with the tremenduous demand for supplies in April, May, and June, when it seems that everybody wants supplies on the first train.

Buying bee-supplies is just like buying any thing else. It is not so much what you pay as what you get for your money. Here you get Root quality and prompt service. If you have not my catalog on your table I wish you would send your name and address, and state the number of colonies you have. I want to place your name on my mailing-list because I want your business. I want your business because I know that I can give you as good service for your money as you can get anywhere. I will then send you printed matter; am going to write letters to you; and if I could I would call and see you. I have for sale what you are having to buy from time to time, and nothing short of your entire bee-supply business will satisfy me if you are within range of Indianapolis. Send your name and you will confer a mutual favor.

Honey.—I find that there is a good demand for honey from bee-keepers who have small apiaries, and where their demand exceeds their supply. In handling honey I have always been careful about the quality, just the same as in handling bee-supplies. Within the last month I have had large shipments from such well-known bee-keepers as S. D. Chapman, Geo. E. Hilton, Geo. H. Kirkpatrick, M. F. Perry, I. C. Lindley, E. A. Doney, Tofield Lehman, Guy Morrison, E. J. & Walter Hemple, and others. I mention these names to give an idea of the quality of honey that I am handling. If interested, let me send you my monthly quotations of the Indianapolis honey market, free.

I can use more beeswax at 28 cents cash or 30 cents in trade.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

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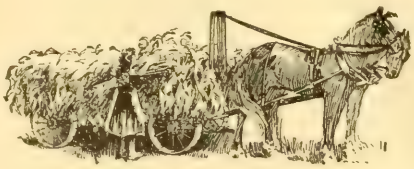
PREMIUM LIST UTAH STATE FAIR, TO BE HELD AT SALT LAKE CITY, UTAH, OCT. 5—10, 1908.

| | | |
|---|---|---|
| Best exhibit Italian bees | $10.00 | $5.00 |
| Best 100 pounds comb honey | 5.00 | 3.00 |
| Best 100 pounds extracted honey | 5.00 | 3.00 |
| Best display package honey | 5.00 | 3.00 |
| Best 100 pounds of beeswax | 5.00 | 3.00 |
| Best exhibit high-bred bees in observatory hives | 10.00 | 5.00 |
| Best display in this class, gold medal and | 15.00 | 7.50 |

SPECIAL.

The C. M. I. (Thos. G. Webber, Supt.) offers for the best display of Utah honey . . . . . 20.00

No premium awards will be made on entries not received at the association office by Wednesday, Sept. 30. Competition open only to *bona-fide* residents of Utah.



The above illustration shows Miss Phillis Hunt of Iowa, engaged in loading corn fodder on an Electric Handy Wagon made by The Electric Wheel Co., Quincy, Ill.

This young lady, according to reports, likes nothing better than loading and hauling corn fodder on these low wagons. She is about 16 years old and weighs 110 pounds and thinks she is able to haul as much corn fodder on a Handy Wagon in one day, as a full grown man can haul on the ordinary high wagon in the same length of time.

Miss Hunt, however, according to her letter, is not willing to undertake to haul all the corn fodder and it would be useless for any of our young farmer readers to imagine that they could avoid all this work, by contracting a matrimonial alliance with Miss Hunt.

FIXING THE ROOFS.

This is the time of the year when the prudent husbandman goes around inspecting the roofs of the various buildings of the farm homestead. It would be poor business to leave off such work until winter; and we all realize the value of the old adage, "A stitch in time saves nine." The proverb applies most emphatically to roofs. In this connection it would be advisable for all interested to turn to the advertisement of the Anderson Mfg. Co., Elyria, O., on p. 1148. See what they have to say about guaranteeing the ability of a roof to withstand rain. We believe this firm to be perfectly reliable, and capable of carrying out its contracts or whatever it agrees to do.

KALAMAZOO STOVES.

The famous firm of stove-makers who have made the magic words, "A Kalamazoo direct to you," almost a household phrase throughout the whole United States, is again with us this season, using our columns to herald the fact that they are still to the fore and expect to sell stoves direct from the original makers to the consumers. It takes a great deal of money to do the immense amount of advertising this firm does; but this is not nearly so great an expense as would be the cost of handling the same goods through jobbers and dealers, each of whom would retain a substantial profit. In giving this firm an order you are not working in the dark, for they have a world-wide reputation for doing just what they agree to do. They know they must treat every purchaser fairly, even generously, to hold their immense trade. They are fully alive to that fact. The stoves, ranges, and heaters they send are all ready to set in place, and the freight is prepaid, so that the buyer has little to do except to go to the depot and receive the stove, take it home, and set it up, all of which any ordinary person can do with ease. This is the time of year when families in the North begin to get their household heating-apparatus in order, and doubtless a good many will have to order a new stove in place of the old one which has done its duty. In this case kindly remember the Kalamazoo Stove Co., Kalamazoo, Mich.

SAVING THE HEAT.

Now is the time to study ways and means for getting the rural home snug and warm this coming winter. In this connection it may be well to consider the fact that much of the stove heat goes out at the mouth of the chimney. You would hardly credit the amount of heat lost in this way. It is enormous. Some of it can be utilized by putting in a stovepipe radiator. Write to the Rochester Radiator Co. for particulars, who will show you how to prevent this waste.

# An Unsolicited Letter.

We are pleased to publish the following letter lately received from one of our well-known advertisers, whose copy for the coming season will soon begin. The letter below tells the story of splendid results obtained through the advertising columns of GLEANINGS.

**STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY**

GENERAL OFFICES AND FACTORIES
1050 UNIVERSITY AVENUE
ROCHESTER NEW YORK

MANUFACTURERS OF
TELEPHONE APPARATUS
AERIAL AND UNDERGROUND CABLE

BRANCH SALES OFFICE
70 86 WEST JACKSON BOULEVARD
CHICAGO ILLINOIS

ROCHESTER NEW YORK

August 11, 1908.

Gleanings in Bee Culture,

Medina,

Ohio.

Gentlemen:-

¶ We advise you with pleasure that we have advised the Long-Critchfield Corporation to include your publication in our advertising campaign for the months from October 1908 to May 1909.

¶ Considering the cost for space in your publication, Gleanings in Bee Culture is the best producer we have on our list, and comes second in our entire list of agricultural mediums. We hope that we will receive the same efficient service and attention that has been your custom during our past pleasant relations.

Yours very truly,

Stromberg-Carlson Tel. Mfg. Co.

H. C. Glenn

HCS/OB. Advertising Manager.

What have you to sell to readers of GLEANINGS? If you want our opinion regarding the advisability of advertising in our columns, write us regarding it. We never recommend it unless we are convinced there is a good prospect of fair returns for the money spent, and, further, that you are in position to and will give our readers a square deal. Our circulation is 35,000 copies. Our rates are 25 cents per line. Watch for our next; but, better still, get your inquiry or order for space off to us before you miss another issue. Address all inquiries to

**ADVERTISING DEPARTMENT GLEANINGS IN BEE CULTURE, MEDINA, OHIO.**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**
**Dubois, .. Pennsylvania**

# Odds and Ends Sale on Exhibition Goods While They Last

If you will send us a list of goods that you could use right away, or in the near future, we will quote you prices on such exhibition goods as we may have in stock. Don't wait, because this sale will be over in 30 days

**Blanke & Hauk Sup. Co.**
**ST. LOUIS**

THE A I ROOT CO. MEDINA OHIO

Standard the World Over

**Traps**

*Syracuse The A. I. Root Co. New York*

**Veils**

*Syracuse The A. I. Root Co. New York*

**Hives**
**Frames**
**Smokers**
**Sections**
**Foundation**
**Wax-extractors**
**Honey-extractors**
**Shipping-cases**
**Bee-appliances**

**European Bee-keepers!**

# Save Time and Expense

by sending direct all your orders and correspondence to our exclusive agent for the European continent and its colonies. . .

EMILE BONDONNEAU
142 FAUBOURG - ST. DENIS, PARIS

**Prompt Service and Satisfaction Guaranteed. . . .**

**The A. I. Root Company**

## "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

*Cash or goods for wax at all times.*

**George E. Hilton**
**Fremont, . . Michigan**

## WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

A FULL LINE OF

## Shipping-cases,

**Honey-extractors,**

**and all other seasonable goods now on hand.**

We are also prepared to supply goods for next season's use at special discounts.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

We will have an exhibit of "Root Quality" bee-supplies at the WEST MICHIGAN FAIR at GRAND RAPIDS, Sept. 14th to 18th. We cordially invite Gleanings readers to call on us, and make yourselves known. We are the authorized agents for Gleanings at this fair.

We want to show you our goods and take your 1909 order there, giving you the advantage of the EARLY-ORDER CASH DISCOUNT. Ask us about it.

**M. H. HUNT & SON**
LANSING, :: MICHIGAN

# C. H. W. WEBER

HEADQUARTERS FOR

# BEE SUPPLIES

DISTRIBUTOR OF

**ROOT'S GOODS EXCLUSIVELY**

**AT ROOT'S FACTORY PRICES**

NO CHARGE TO DEPOTS
FOR DRAYAGE.

## HONEY WANTED.

Fancy white clover, EXTRACTED HONEY. State how it is put up, and price expected delivered in Cincinnati.

# C. H. W. WEBER

Office and Salesroom, 2146-2148 Central Ave.
Warehouse, Freeman and Central Avenue.

CINCINNATI, .. .. .. OHIO

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

H. H. ROOT, Assistant Editor
A. I. ROOT, Editor Home Department

E. R. ROOT, Editor

A. L. BOYDEN, Advertising Manager
J. T. CALVERT, Business Manager

VOL. XXXVI SEPTEMBER 15, 1908 NO. 18

## STRAY STRAWS

DR. C. C. MILLER

YOUNG FELLOW, if you want to get near the head of the procession you'd better read carefully all that J. E. Crane says on page 1058. Then turn back to page 1056, where G. M. Doolittle says, "I would first requeen, with the best stock in the apiary, all colonies whose work had shown during the season that their queen was not of the very best order." A lot of trouble, that; but if you keep it up year after year you will be likely to get somewhere.

VENTILATION at the back of the hive by shoving forward the lower section-super certainly helps to prevent swarming. The objection to it is that it retards the finishing of sections nearest to the opening. This year, during the first part of the clover flow, and on through its height, this ventilation seemed to have very little effect on the sections. Later on, the effect was very great. It is probably advisable to close all such ventilation when the season is well advanced.

THIS YEAR, more than ever before, I have watched the matter of worker brood in drone comb. I have seen a number of cases, and always the mouth of the cell was contracted by the addition of wax. I think almost any bee-keeper, if he will look through his hives, especially in nuclei or colonies, with young queens, will find patches of drone cells thus modified. Is there a case on record in which workers were reared in unmodified drone-cells? [We do not know. Has any one else noticed any exception to this rule? —ED.]

"HEREAFTER any employee caught smoking cigarettes will be dismissed from the service." That's the order issued by Supt. Easley, of the Rock Island R. R., Aug. 26. A clear head and steady nerves are needed by a man who has the lives of others in charge, and cigarettes and whisky are incompatible with a clear head and steady nerves. [This thing is becoming more and more general with the big roads. It is not a case of morals or sentiment, but because it is a matter of economy to employ men with steady nerves.—ED.]

A QUEEN, after being clipped, if placed on top-bars, is likely to run about in a frightened manner, inducing the workers to take after her, and possibly ball her. Lay a brood-frame flat; and, after you have clipped your queen, drop her on the brood right among the bees, and she acts at home. This applies to those who hold the queen in their fingers while clipping her. [Yes; or when you clip the queen, let her drop down *between* the frames. It is when she is on top of the top-bars, where there is no brood or comb, that she becomes frightened.—ED.]

JAMES G. SMITH writes: "What for so much chin-chin about hive-number tags?" and encloses a red and a blue crayon. I don't know whether red or blue would be any more permanent than black. I have used black. On an unpainted hive it becomes dim, and, besides, hives are often shifted, and numbers changed, making movable tags better. [Red and blue pencil-marks on a slate tablet, after standing a time, become almost indelible. We have given up such a pencil because we could not afterward erase the writing. Whether the red or blue crayons would make a fast color we do not know.—ED.]

THAT PRETTY shipping-case, p. 1060. Each of the front bars has two nails at each end. I use only one—abundantly strong, and I think it looks better. On p. 1061 the instruction is that the two holding cleats and the cover should be put in place and then one of the cleats nailed. I don't believe you do it that way, Mr. Editor. I suspect that you first nail one of the cleats in place without touching the cover at all, and then put on the cover and the other cleat, and nail. [We are inclined to believe that your method is better than ours. But the point we wanted to bring out was, not to nail on the two cleats first, and then expect the cover to fit.—ED.]

HILDRETH & SEGELKEN speak of opening the case "by simply pulling out the one nail and sliding the cover off." I don't understand how you can get out that one nail without taking off one of the cleats. But, of course, that isn't much trouble. A woman insisted I was wrong, so we tried it. She took a smooth half-inch nail and drove it in; pried up with a knife close to the nail, and then pushed the cover down. That left the nail projecting, to be drawn with a claw-hammer. I gave it up. But you must send a woman with each shipment to show the grocer how. [Almost any grocer is familiar with that little trick of the trade. We hardly believe, however, that, in the majority of cases, it is necessary to use the nail at all. The friction of the cover should be sufficient to hold it in place.—ED.]

THE BEES of No. 29 were very dark. July 17 I killed their queen. A yellow queen was introduced, and was at large in the hive July 22 or 23. Not until Aug. 22 were yellow bees seen in supers, and then only a few. It seems that the young bees stayed on the brood-combs at first, and (assuming that the queen promptly began laying) did not enter the supers until nine or ten

days old. It looks a little unreasonable, and possibly the case was a little exceptional. At any rate, it is not hard to believe that bees do not enter supers until after they are old enough to have taken a flight. In that case, Mr. Editor, it is easy to see that there should be no loss of young bees when supers are piled up and covered with a Miller escape. My strong point, however, is that, if there is such loss, I ought to have noted something of it in all these years. [We are prepared to believe with evidence now in hand that there will be no very young bees in the supers. In a practical way, this means that when bee-escapes are applied on supers removed from the hives, there will be no loss from the young bees that can not fly back to their hives. If any one knows that this is not orthodox, let him hold up his hand and tell his story.—Ed.]

The life of a worker in the busy season averages six weeks—perhaps less. Suppose we have a colony of best stock and one of the poorest. Swap the queens at the beginning of the honey harvest. It looks reasonable that in six weeks or so the colonies will swap qualities. But the observation of years has forced me to believe that the change of character comes much more slowly than I had believed. What the queen is up to the beginning of the harvest seems to settle almost fully the result of the harvest, even if prolonged. I don't know why, but it seems to be so; and yet sometimes the introduction of a queen seems to change the character of a colony within a few days. [Perhaps you are right; but we do not see any scientific reason why. We can readily see how the introduction of a young queen to replace one that is failing might inspire energy in a colony. But suppose there were two colonies, both queens equally prolific. The workers of one are energetic, and gather twice as much honey as the workers of the other. Now, would taking the queen out of the good colony and putting her into the poor one make the bees that are not her daughters good workers, like those that she left in the other hive that were of her own blood? It is a rather interesting question, and we should like to know if others have observed the same thing.—Ed.]

The old-time fiction of queens hatching exactly at 16 days has cost more than one bee-keeper dear. Queens (especially hybrids) will hatch out any time from the 14th to the 18th day, *Irish Bee Journal*, page 32. In a full colony, 15 days is probably near the mark; in a nucleus, longer. But no queen should ever be reared in a colony so weak as to lengthen the time of hatching to 18 days. [The *Irish Bee Journal* may not be far out of the way in this statement, although we have not heard of many queens that emerge from the cell in as short a time as 14 days *from the time the egg is laid.* In our queen-rearing yards we graft the larvæ when they are about 48 hours old. Our Mr. Pritchard* thinks that he can tell very closely by examining the larvæ just how old they are, and he tries to use larvæ which are 48 hours old so far as he is able to judge. As a rule he does not distribute the ripe cells until ten days from the time of grafting, and he finds that the queens ordinarily emerge the day after. This would make a total elapsed time just 16 days, counting three days before the egg hatches, two days before grafting, and eleven days after. There are times, however, when he is obliged to distribute the ripe cells in only nine days, as the queens begin coming out too soon. This would make the total time fifteen days. We do not now remember a time when queens emerged from the cells in fourteen days from the time the egg was laid; and, although it might happen, we think it would not be at all usual. Then, on the other hand, if the weather conditions are not right we find that the total time is as long as seventeen days, and there might possibly be cases where the queen would not come out until the eighteenth day. We should say, in view of these facts, that the time to be counted on ordinarily is sixteen days, although very often so little time as fifteen days is taken or as long a time as seventeen. See editorial elsewhere.—Ed.]

* Mr. P. reared 2000 queens for us the past season, and large numbers of them in previous years. His habit of close observation and his extensive expetiments should count for something.

# Editorial

By E. R. Root.

### THE SON-IN-LAW OF REV. L. L. LANGSTROTH AT THE OHIO STATE FAIR.

The publishers had an educational exhibit of bees, honey, and bee-appliances at the State Fair. Among the many visitors who came to pay their respects was Mr. John W. Jamison, of Roxabell, Ross Co., O. While Mr. Jamison is a prominent agricultural writer, he will be better known to the bee-keeping world when it is said that he married the youngest daughter of Rev. L. L. Langstroth. Her sister, Mrs. Anna M. Cowan, the eldest daughter, died a few years ago, so that Mrs. Jamison is the only survivor of the Langstroth family.

We are glad to say to her that her father's great invention of a practical movable frame, and his book, "Langstroth on the Honey-bee," have placed almost all the modern bee-keepers of the world under everlasting obligations to him. We are sure we are voicing the sentiment of all of them when we say we wish she may enjoy a long life, and health long enough, at least, to see the full fruition of her father's great work.

### THE SUBSCRIPTION-LIST OF THE AMERICAN BEE-KEEPER PURCHASED BY THE AMERICAN BEE JOURNAL.

In our issue for Aug. 15, page 989, we referred to the fact that the *American Bee-keeper* had suspended publication, and we have since been advised that the *American Bee Journal* has acquired the subscription-list and will fill out all unexpired subscriptions.

In this connection, perhaps we should mention the fact that the *American Bee Journal* has advanced its regular price from 50 cents to 75 cents per year; three years for $2.00; five years for $3.00. This change took place September 1, and was made necessary, the publisher states, by the increased cost of every thing that goes into a periodical. A number of the popular dollar magazines have advanced to $1.50. Some of the

daily papers that formerly sold for a cent are now selling at two. We have not as yet advanced the price of GLEANINGS; and as we do our own work in our own plant with the very latest modern machinery, we hope an advance in price will not be necessary.

### HONEY-CROP CONDITIONS — PRICES.

THERE is no material change to report over that given on page 1050 of our last issue. As confirmatory of the shortness of the crop in Colorado we introduce a letter right here from Mr. R. C. Aikin, who is in position to know:

> Colorado has little honey this year. Western slope is reported fair; Arkansas Valley, half a crop; northern (Denver, Boulder, Longmont, Loveland, Ft. Collins, Windsor, and Greeley) will not supply the home market. Only once or twice in 20 years have I had so little as this year. R. C. AIKIN.
> Loveland, Col., Aug. 29.

This means that the market for Eastern clover should become firm; but by reference to some markets here in the East, we find that prices are unsettled in some sections and good in others. We hope for improvement.

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### CANE VS. BEET SUGAR.

MR. CRANE calls attention to the controversy in regard to the difference between cane and beet sugar. Theoretically they are the same; but experts note a difference. In London, the chief beet-sugar market of the world, cane sugar, as a general thing, commands a slightly higher price than beet sugar. *The Sugar Beet*, an excellent magazine devoted to the interests of the industry in this country, recently admitted there is a difference, and accounted for it by stating that the particles of carbon lie closer together in cane sugar than in beet sugar. This, of course, would make the cane sugar the sweeter of the two. Be that as it may, the juice of the beet contains a very bitter principle known as *betaine*, and it takes great skill to get rid of it in making the sugar. Sugar cane, on the other hand, has a delightfully sweet juice; and, if sufficient care is used, a sugar almost identical with maple sugar can be made from it. Beet sugar is often colored with ultramarine blue, which is against it for feeding purposes. There is even a difference in cane sugars. The syrups of Florida and Georgia are superior to those of Louisiana, chiefly, I think, on account of the low heavy soil of the latter as compared with the light, warm, friable soils of Georgia and Florida. Porto Rico and Barbados are celebrated for their syrups; and in both of them the soils are light and well drained. I believe bees are better judges of sweets than we are, and we might as well cater to their prejudices. W. K. M.

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### THE PURE-FOOD EXHIBIT AT THE OHIO STATE FAIR; WHAT OHIO IS DOING IN THE ENFORCEMENT OF PURE-FOOD LAWS.

ONE of the most striking exhibits—one that attracted a large amount of attention—at the Columbus Fair was one made by the Pure-food Department of the State of Ohio, of which Renick W. Dunlap is Commissioner. The exhibit was under the immediate charge of two of his inspectors, E. J. Riggs and George E. Scott.

It comprised a large collection of food and drug products gathered from all over the State, showing various examples of adulteration, the use of injurious preservatives and coloring matters, and, in general, some ingenious specimens of misbranding. Thanks to Commissioner Dunlap and his associates, there is not a State in the Union where the pure-food law is better enforced.

A feature of the exhibit showed the attempts of certain manufacturers of foods to get around the law, or to dodge the special clause of the statute having reference to the general subject of misbranding. In some cases the preservative or coloring matter would be indicated in very small type; in other cases the adulterant would be named, but in such an ambiguous way that the average consumer would read the headlines, supposing he was buying a certain definite well-recognized food product, when in fact he was getting only an imitation of it. But the Pure-food Department had traced down a lot of these cases, and compelled strict compliance with the provisions of the law.

Comparatively speaking, there is but little adulteration in Ohio. In the case of vinegars, catsups, jams, and various preserves, there has been some injurious imitations. Candy has been found to contain considerable injurious coloring matter, especially of the coal-tar products; the catsups and meats, an excessive amount of preservative.

A very interesting part of this exhibit were cerpieces of muslin cloths. Some of them, about half a yard wide and a yard long, were colored from the dyes taken from a single bottle of catsup or from a few candies. The amount of coloring matter used in some cases was enough to give strong rich tones to large pieces of cloth. Think of that amount of stain going into the human stomach, and for no other purpose than to deceive! These dyed cloths were displayed around the exhibit in a way that was very striking. These coal-tar dyes are used because they are cheap, and because they help to bring up the appearance of certain adulterated goods, or of pure food improperly prepared; but Uncle Sam and Ohio say their use shall stop.

The Pure-food Department insists that benzoic acid, and other preservatives of a like character, if strong enough to preserve the food would be likewise strong enough to prevent the digestion of those same foods when taken into the human stomach, and it is right.

But perhaps the most common adulterant of foods was saccharine, used in canned goods. This article is in no sense a food, but a powerful medicine that is produced from coal tar. It is 500 times sweeter than common sugar; and as it is very cheap the temptation is to use it in canned goods, for it certainly imparts to them a sweet flavor. When it is remembered that *4 lbs. of this powerful drug costs $9.00*, and has the *same sweetening power as a ton of sugar costing $120*, one can see how unscrupulous canners would use it in spite of its effects on the lives of our people were it not for the national and State pure-food laws and their enforcement.

There is a need of having just such men as Dunlap and his associates, who can not be bought or cajoled, at the head of the Food Department at Columbus to prevent some rascals from sending us prematurely to our graves. The way they are making them come to time should be a

warning to all purveyors of food of any sort. What Ohio is doing, other States are doing more or less thoroughly; but Ohio has set up a high standard that many are not following.

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### MIGRATORY BEE-KEEPING; HOW O. O. POPPLETON PRACTICES THE SCHEME BY MEANS OF GASOLINE-LAUNCHES ON THE INDIAN RIVER, FLA.; THE "LONG-IDEA" HIVE.

WE have just had the pleasure of a visit from Mr. O. O. Poppleton, the veteran bee-man of Stuart, Fla. He had just attended the G. A. R. reunion at Toledo, and stopped off at Medina for a couple of days before returning. Our old bee-keepers will remember Mr. Poppleton as coming originally from Williamson, Iowa, although a native of Ohio. In Iowa he was a very successful bee-keeper, and was an occasional contributor to the bee-journals. But ill health finally made it necessary for him to go southward, and the next thing we heard of him he was located in Florida, where he has been keeping bees ever since.

Mr. Poppleton has the distinction of being, possibly, the only bee-keeper in the United States who uses what is known as the Long-idea hive—a hive that was much exploited some thirty years ago. Instead of adding extra room or giving surplus combs on top, story by story, the Long-idea principle means an extension on a *horizontal line*. It calls, therefore, for a *long* hive. The one Mr. Poppleton uses may hold 25 twelve-inch-square frames. As the season increases, and more room is required, the frames are put at the side, the division-board being shoved over. This is continued until the entire brood-nest is filled.

Our friend still believes in the hive, and thinks that, for his purpose at least, it is far ahead of the Langstroth tiering-up principle. There are no heavy stories to lift off and on. The hive never becomes top-heavy, and no wind blows it over. When we asked, "Are not these hives awful to lift?" he replied, "That is where you are mistaken. Two men can handle them very easily; and they are never toted around except to put them in and out of the boat in migratory bee-keeping. At all other times there is no lifting of heavy stories—simply pull the frames out of a single brood-nest and replace them." He could not understand how the whole bee-keeping world had gone after the tiering-up principle, when the other plan has so many advantages

Mr. Poppleton enjoys the distinction also, of being the only migratory bee-keeper probably in the United States. although there are many of them in Europe; and we have read how the bees are transported down the Nile in Egypt.

But since the advent of the gasoline-launch, he has worked out the principle along entirely new lines. He first started with one good-sized launch and a lighter, and now he has put a motor into it so it is also self-propelling.

Up and down the Indian River there are many kinds of flora that come into bloom at different times. When there is nothing doing at one yard and something doing somewhere else, he puts his hives on his launches and then carries them to pastures new. When this locality fails, the hives are put on the water again and moved once more, and so on as long as the season lasts. On this scheme of migratory bee-keeping he sometimes has yards a hundred miles apart.

Mr. Poppleton has been in that locality long enough to know its peculiarities. Lest some one may get the idea that he has a bonanza all by himself, and then think of moving down there, and working on the migratory plan, it will be proper to say that our friend has been "enjoying" a series of poor seasons. Better stay out.

In past seasons Mr. Poppleton has had some experience with bee-paralysis, for his portion of the State seems to be somewhat favorable to its development; but instead of being driven out of the business he set to work and learned how to cure it. This cure has already been made public through the various bee-journals, and is now incorporated in the A B C and X Y Z of Bee Culture under the general heading of "Diseases of Bees."

While Mr. Poppleton fears bee-paralysis no more he found he would have to quit importing queens from outside localities, and hence was compelled to develop a strain of his own that would be able to stand the inroads of that disease. In this connection we may remark that his experience tallies very closely with that of Mr. F. R. Beuhne, on page 998, Aug. 15.

Mr. Poppleton, besides being one of the old veterans of the war of 1861, is also one of the veterans in the bee business. He was contemporary with Langstroth, Grimm, Hetherington, Quinby, Tupper, King, Gallup, and many others of those early days. He is still very much interested in the general subject of bees, and especially in every new thing that has come up of late. His enthusiasm, although tempered by an experience that every thing that glitters is not gold, is just as keen as that of a beginner who has just arrived at the first stages of the bee-fever. Indeed, we spent several pleasant hours in talking over things new and old.

He has promised to send us some photos showing his launches, his hives, and his manner of keeping bees on the migratory plan. These we hope to present at a later time, and perhaps report a few more ideas that we gleaned from this veteran of many summers.

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### CAUSE OF SICK BEES ON THE SIDEWALK IN FRONT OF OUR BUILDING DURING THE HEIGHT OF THE HONEY-FLOW.

EVERY year we have noticed during the height of the honey-flow large numbers of bees on the sidewalk and brick pavement unable to fly, and apparently suffering a great deal of pain. With their feet they would tug at their bodies, and sometimes so great would be their contortions that they would crowd the abdomen off from the thorax. We were unable to account for this peculiar phenomenon, and we supposed they were dying in equal numbers everywhere in the vicinity of the yard. We have reported this at various times in these columns, but no one has been able to offer a satisfactory solution.

In visiting Mr. L. A. Aspinwall, of Jackson, Mich., our conversation drifted to the aforesaid suffering bees. Then Mr. Aspinwall remarked:

"I think I can tell you what is the cause. Is it not a fact that you have a good many telephone wires passing over this street?"

"Yes," we said, "they are strung up on both sides; and, what is more, the line of flight is concentrated at this joint by an open passageway between the building and some tall evergreens."

"Now," said he, "you watch some time when the honey-flow is on, and you will see the bees bumping against those wires and dropping down in aimless flight until they tumble on the sidewalk and in the grass. During a dearth of honey there will be very few flying bees, and one that might accidentally hit a wire would escape observation."

It is very clear to us that our friend has struck upon the true source of trouble. There has been no honey-flow on since visiting Mr. Aspinwall, so we can not verify his statements; but the very fact that there are no dead or struggling bees to be seen except at the height of the honey-flow, would seem to support Mr. Aspinwall's theory. We might remark that at our south yard, where there are no telephone wires, we have never noticed these sick and struggling bees. We shall be glad to hear from others.

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NOT A BAD IDEA; A SCHEME FOR AVOIDING THE LIFTING OF HIVES AND SUPERS.

Our Mr. F. G. Marbach, of the machine-shop, has been working on various forms of hive-lifters. He finally inquired why a bee-keeper could not have his hives arranged in nice perfect rows, and at each end of a row set a post solidly into the ground, said post sticking up some six or eight feet above the level of the ground. He would then stretch a wire cable from the top of each post, drawing it up taut, as the telephone people do, with a rope and tackle. Next he would have a block and pulley, supported by a grooved wheel running on the wire or cable.

There, now you see the idea. This tackle could ride on the trolley wire, and be adjusted to any hive, lift up the supers, and hold them suspended, or move them to any one of the hives in a row, or carry them to the end of the row and deposit them on a wheelbarrow. No matter how rough or uneven the ground this arrangement could handle the supers very easily.

You may say that such a trolley line could not hold up a load of filled supers. There you are mistaken. The telephone men work on their lead-covered cable lines supported by a basket or platform which hangs by means of pulleys from the cable that holds lead pipe. They then pull themselves along in midair, supported only by the wire that supports the cable. They are perfectly safe in doing this, because the tensile strength of the wire is amply sufficient to hold them.

There are probably hundreds of our readers who have seen this feat performed, and there is no reason why this same principle could not be applied over a row of hives. The rows might be a hundred feet long, and it is perfectly feasible to to put in 35 or 40 hives to the row. Two or three rows would take all that one could put in one yard. These trolley lines can be easily put up by any one who knows how to string fence wire; but one would have to borrow or get a heavy tackle of the telephone people to produce the necessary tension of the cable or wire so it would support in the middle a weight of from 50 to 75 lbs.

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SIZE OF LARVÆ TO SELECT FOR GRAFTING.

The advice commonly given in regard to larvæ for grafting is to select the smallest ones in order to be sure of getting the youngest ones. There is a probability, however, that this rule is not a safe one to follow, since larvæ of exactly the same age are not always of the same size. Our Mr. Pritchard, who has charge of one of our queen-rearing yards, has often noticed quite a variation in the size of larvæ, all of which are practically of the same age. In a populous colony he has inserted an empty comb, the cells of which are cleaned and polished, but which as yet contain no eggs. He catches the queen and places her on this comb, and then finds at the end of perhaps an hour that she has laid eggs in cells covering an area as large as his hand. He now carefully marks this area on the comb in order to be able to observe the growth of the larvæ. In this way it is possible to watch larvæ that are of the same age. At the end of four or five days, when the eggs have hatched and the larvæ have begun to grow, he finds that some are much smaller than others, and he believes that it is much the better plan in grafting to select those that have the best start. This conforms to the rules for the breeding of animals generally; for what breeder would not select the largest and finest individuals possible?

Some may ask how it is possible in a large queen-rearing yard to know whether certain larvæ owe their larger size to the fact that they are more vigorous or better fed, or that they are older? This is an important point, for a beginner might not be able to tell the difference. Mr. Pritchard believes, however, that any larva not yet curled up so that the two ends nearly meet is suitable for grafting, and he therefore selects the largest and finest-appearing larvæ that are yet comparatively straight in the bottoms of the cells. Furthermore, whenever he is looking over the combs in the strong colony containing the breeding queen, and finds a small patch of comb in practically every cell of which eggs are just beginning to hatch, he marks this carefully by enclosing the space with large wire staples such as are used to fasten bottom-boards on hive-bodies, etc. Small sticks will not do, for the bees carry them away; but these large wire staples answer the purpose admirably. Two days later, when he is ready to graft, he takes up this comb which he marked, and selects the finest of the larvæ between these staples. He is thus practically sure of obtaining what he wants. Late in the year, or during cool weather, it is not always possible to find a patch of comb containing larvæ of the same age, but earlier in the season this plan can be utilized very easily.

It would seem that the most vigorous larvæ should develop into the most vigorous queens. At any rate, queen-breeders ought to leave no stone unturned in the breeding of queens to develop the best. The best stock should be used to start with that can be obtained, the best larvæ chosen, and strong colonies should be made use of to care for the uncapped queen-cells. A queen that has been handicapped from the start can not become the mother of strong and vigorous bees.

# CONVERSATIONS WITH DOOLITTLE

PROFITABLE AND UNPROFITABLE WORK IN THE APIARY.

"Mr. Doolittle, I have been wondering if I have not been doing too much unnecessary work with my bees."

"There is no doubt that a great deal of the work done in many apiaries is not very profitable, Mr. Jones, and would be characterized as 'fussing' by many; still, it often happens that the beginner learns much about the bees by this same fussing, hence the time so spent is not altogether thrown away."

"But is it not as important as any thing in making money out of bees to work so that every stroke counts?"

"Undoubtedly that is correct. It is easy to put a large amount of work on the bees, by the one having the bee fever, that amounts to little or nothing after the first principles have been passed. After the business is well understood, no doubt a greater satisfaction will come to us by making every stroke count, as you say."

"I think that is right, and I should like to have you tell me just what are the really necessary things to do with the bees."

"If you were to ask the farmer bee-keeper this question he would tell you to hive the swarms when you see them and put on the supers. Then the enthusiast who has just read one or more of the bee books and papers would be apt to say, 'Stimulate brood-rearing, equalize stores, make nuclei, raise queens, examine all colonies once a week during the summer, and, as often as it is mild during the winter, extract the honey in early spring and feed it back so as to get the cold solid slabs of honey from the middle of the brood-nest; extract the honey in the fall, and feed sugar syrup for wintering, etc., till you are almost dizzy with the rounds you must make with the bees the whole of the year."

"But what do *you* say?"

"The most practical course is by no means midway between these two extremes, as you probably expect me to say, for from my later years' experience I believe it lies much nearer the farmer's method than the enthusiast's. In other words, my motto now is, the largest possible amount of honey with as little well-directed labor as is possible to secure said amount of honey."

"What do you mean by well-directed labor?"

"The farmer loses much honey by *not* doing a *few* things at the right time and in the right place. The practical successful apiarist does just those things, but no more. Or, when he has just the necessary work done at *just* the right time and in *just* the right place, he does not hinder the bees in their work by upsetting all their housekeeping in pulling their well-arranged plans inside the hive to pieces, thus causing them to spend much of their precious time during the honey flow at repair work."

"Would you mind naming the things which you consider as paying work in the apiary?"

"Briefly stated, all colonies should be examined rather hurriedly in early spring with as little disturbance as possible, to see that they have stores enough to last them till pollen becomes plentiful, when they should be examined more carefully to see that they have good queens and sufficient stores to carry them through to the white-clover harvest, taking advantage of this inspection to do all desirable cleaning of hives, pruning of propolis and burr-combs, and clipping of queens. All hives and supers needed for the season should be in readiness beforehand to be used at a moment's notice when they are needed Then some simple and uniform plan for swarming should be adopted which will prevent all watching or climbing tall trees for after-swarms, for these have no part in a well-regulated apiary. Some good plan of artificial swarming to control increase is better by far for the busy man's use than natural swarming in any shape. Poor colonies should be requeened, the supers put on at the right time, more added as needed, and *just when they are needed*, and the filled supers should be removed promptly. Next, the honey should be graded and packed in accordance with some definite system as early as possible, to take advantage of the early market, so that any chances for selling it to good advantage may not be lost. The necessary number of queen-cells should be raised from the best stock so as to supersede all failing queens at the end of the honey harvest, and nearly all drone comb as well as irregular or imperfect combs should be replaced by straight worker combs; and the bees should be gotten ready for wintering during September and the first half of October."

"I notice you do not name some of the things neighbor K. insists are essential."

"Probably not. One of the tantalizing things about apiculture is that some apparently good authorities think some things are necessary, not to say vital, and other equally good authorities say they are not."

"How do you account for this?"

"Locality accounts for much of it in my opinion. In some portions of the West the clear dry atmosphere makes it possible for the bee-keepers to adopt a different system of management from that necessary here at the East."

"But when two authorities living near each other put forth different opinions, what am I to think?"

"Both can hardly be right One may be competent in his practical work, but lacking as a close observer, or in scientific accuracy, and quick to jump at conclusions. Or, as is sometimes the case, he may be one of those who thinks it more virtue to claim knowledge than to admit or say frankly, 'I don't know.'"

"I take it from what you said that you do not think stimulative feeding in the spring would be profitable labor."

"I am sure it is not with me, for I have tried it very many times by feeding a certain number of colonies and leaving the same number of colonies of equal strength without feeding, but with plenty of honey; and I find that those not fed give the best results in honey when an inventory of each lot is taken in the fall. I know some claim this is the only way of having colonies prepared for the harvest. But it does not necessarily mean that stimulation must be profitable because it stimulates brood-rearing. There are

two questions involved in this stimulative feeding. First, which is better—a strong colony of old bees, whose vitality is unimpaired by previous brood-rearing, or a weak colony of young bees 37 days before our honey harvest is to begin, that being the time required to rear laborers for the fields from the egg. Second, when natural pollen (the best kind of stimulant in connection with plenty of honey in the hive) begins, as it does here, more than 37 days before our earliest harvest commences, and continues without a break, is it any additional stimulation to feed thin honey? All of my experience says that colonies which do not begin brood-rearing in earnest till pollen comes in plentifully from the elms and hard maple will excel by far those which are stimulated to brood-rearing earlier, so that the old bees die of exhausted vitality before the honey harvest arrives."

# SIFTINGS.

By J. E. CRANE

It is a great satisfaction to have such a frank, outspoken report as we find on page 869 on the good and bad qualities of the Caucasian bees. We feel somehow now as though we knew something definite. Thanks.

Dr. Miller inquires, page 927, Aug. 1, if we found any thing in the platforms of the two great political parties about the greatest public question of the day. No, doctor, we didn't, and we were looking too. Too bad.

Mr. F. G. Marbach's suggestion, page 929, of making a honey-board of two sections, is a good one. The only objection I find is that, in practice, one piece is quite apt to be missing, having been used for something else. It is bad business to do so; but with help you can not always find things in place. [See Mr. Brovald's suggestion, page 1137.—ED.]

I find an error on page 895, first column, a little below the middle. In referring to the variation of cane sugar in honey it says, "It is caused by differences of soil or climate, etc." It should have been, "Is it caused by differences of soil or climate?" I do not presume to know. It is one of those scientific questions we should like to know; but perhaps it is not of great practical value.

W. K. Morrison says, page 875, that a writer in one of the European journals maintains that it is only from the second crop of red clover that bees extract any nectar, while he imagined it was mostly gathered from the mammoth clover. Hereabouts I have seen bees work as freely on both the first and second crops of medium red clover as on any other clover; but it was only when conditions were favorable and only occasionally.

By the way, Mr. Morrison is one of the most cosmopolitan writers that have enriched the pages of GLEANINGS, and his Gleanings from Foreign Exchanges are full of meat, and well worth the careful thought of every bee-keeper.

And there is Dr. Miller, page 939, with "the smile that won't come off." Good! Surely he is our "grand old man." Old, did I say? No, he is not old. I don't think he ever will be. I have read somewhere in an old-fashioned book that there are those who are made "partakers of the divine nature." Such do not grow old. I believe no other contributor to our American bee-journals has a larger place in the hearts of the bee-keepers of our country than Dr. C. C. Miller.

I believe Dr. Miller's estimate, page 867, July 15, of the amount of wax needed for storing 100 lbs. of honey is rather high. I have two or three times had occasion to melt up section combs, and I succeeded in getting only about four pounds of wax to the hundred of honey. There is, however, quite a variation in the thickness of combs or in the amount of wax used by different colonies in comb-building.

The remarks of J. L. Byer, page 935, are of value as to danger in the use of cyanide of potassium. I have had occasion to use both cyanide and bisulphide of carbon this season, and I find but little difference in cost, and for a small space the bisulphide is much more convenient to use, and on the whole I prefer it. But when a large space is to be filled I am not sure but the cyanide treatment would be preferable.

The article by J. L. Byer, page 887, on wax-rendering, stirs within us a fellow-feeling. I made a press a few years ago something after the Hatch-Gemmil type, and have often been surprised at the amount of wax I have secured. I do not press so hard as formerly; but after pressing a batch fairly, I loosen the screw and remove the follower; pour in hot water, and stir up the slumgum thoroughly; press again, and get at the second pressing about ten per cent as much as at the first pressing.

If all those who can not afford to take a bee journal could only learn "how to make wax" it would pay many times over for all the journals devoted to bees in this country. Further, if all who render wax knew how to do it properly the supply of this useful article would be largely increased, and the wax famine that has seemed imminent for a few years past would be postponed for some time.

On page 928 we find the following: "We notice by the *American Grocer* that the Kansas Board of Health, which has the enforcement of the pure-food laws of that State, says that grocers who sell beet sugar for cane will be subject to prosecution. We wish this ruling might become general all through the United States, as it is impossible now to know what one is buying—cane or beet sugar." Now, we seem to be not a little mixed on this sugar question. I have been accustomed to think of beet sugar as cane sugar, and yet the Kansas Board of Health, as well as the editor of GLEAN-

INGS, thinks there is a marked difference; and I have heard bee-keepers express great fear that, in buying granulated sugar, they might be buying beet sugar unwittingly. I find in Remson's Chemistry, page 668, under the paragraph "Cane Sugar," "This well-known sugar occurs very widely distributed in nature, in sugar-cane, sorghum, the Java palm, the sugar-maple, beets, madder root, coffee, walnuts, hazelnuts, sweet and bitter almonds; in the blossoms of many plants, etc."

The New International Encyclopedia says, "Cane sugar is found in varying quantities in many plants; but sugar-cane, the sugar-beet, the sugar-maple, and various species of palms, are its only commercially important sources." The American Encyclopedia makes substantially the same statement as to the sources of cane sugar. I notice, however, that the Standard Dictionary says that "Sugar is called according to its source; as, cane sugar, beet sugar, maple sugar, etc." I have supposed there was chemically no difference between refined sugar, whether its source was sugar cane or beets or maple-trees. It was all "cane sugar."

It does not necessarily follow that, because two substances are the same chemically, they are in every respect alike. The purest diamond and the blackest carbon may be the same to the chemist. Now, who can tell us just the difference between the refined product of sugar-cane and sugar-beets? Is one less desirable to feed bees for winter than the other, or for any other purpose?

Middlebury, Vt.

# BEE-KEEPING IN THE SOUTHWEST

By Louis Scholl

### A NOTE OF WARNING.

Samples of foul brood have been sent me from various parts of the country for identification, and no objection arises on this score, although it takes a good deal of time, etc., in correspondence. But *when combs simply rotten with foul brood are wrapped in a single sheet of thin paper, and sent to be identified where other bees may be subjected to the dread scourge, it is time to call a halt.* Don't do it. Proper directions have appeared before for sending samples of foul brood for identification; and even then send none until you have received proper instructions for it. These will be gladly given, and then it may be known when it is to be expected.

It is against the law to expose other bees to foul brood, or combs of honey, wax, and even hives and appliances of foul-broody colonies; and there is a fine for it. Copies of the foul-brood law have been published far and wide, and every bee-keeper ought to take enough interest in this matter, if not to know the law by heart to have at least a copy of it handy for reference. If you have none, write the State Entomologist, College Station, Texas, for one. Also address all matters pertaining to information about foul brood to this office. Our reason for being rather particular is largely due to samples received wrapped in thin paper, through which the hatching bees had gnawed and were escaping, besmeared not only with the honey from these rotten combs, but the juices of the mashed diseased larvæ. It is well, therefore, that great care be exercised, and the unnecessary spread of diseases prevented.

### AN APPROPRIATION NEEDED FOR FOUL-BROOD INSPECTION.

As a result of a "foul-brood agitation" at the annual meeting of the Texas Bee-keepers' Association, at which a committee was appointed known as the "Legislative Committee," active work has been begun. F. L. Aten, of Round Rock, is chairman, with T. P. Robinson, of Bartlett, and Secretary Louis H. Scholl, of New Braunfels, as the two other members. This committee will come together from time to time until the meeting of the legislature in January, to devise plans for obtaining an annual appropriation of $3000 for defraying the expenses of thorough inspection work in bee diseases as per the report herewith of the committee appointed during the session of the convention.

REPORT OF COMMITTEE ON FOUL-BROOD LEGISLATION.

We, your committee, beg to report as follows: That we ask for an annual appropriation of $3000, to be used in the eradication of foul brood and other infectious diseases of bees, to be placed under the direction of the State Entomologist in accordance with sections 1 and 2 of the foul-brood law of Texas.

L. H. Scholl,
W. O. Victor,
T. P. Robinson,
F. L. Aten,
C. E. Sanborn, } Com.

While this sum may not be necessary for an inspector alone, which, however, here in Texas would necessarily be higher than in many States on account of the greater territory that must be covered, a portion of it might be very profitably used in the Department of Entomology for foul-brood investigation which is not strictly inspection work. Such work, carried on whenever inspection can not be done, can be made to aid the inspectors, and should prove profitable to the bee-keepers of the State.

The real inspection of the bees, wherever necessary, and the proper caring for those that need attention, is, of course, the most important. With this in mind, the following letter has been formulated by the association for circulation:

*Brother Bee-keeper:*—Foul brood is breaking out in almost every part of our State. I have hundreds of letters from north, central, east, south, and southwest Texas, asking for help. Foul brood has come to these places, and the apiaries are threatened. Nothing can be done for the bee-keepers, as there is no money to do it with. Your bees are threatened. We need a State inspector to look after our interests so that they will be protected and saved from destruction.

We have a foul-brood law, but no money for an inspector. Our association has taken the matter up, and will go before the next legislature to obtain an annual appropriation for carrying out this work. But your help and co-operation will be needed. You need to become stirred up about the matter, and to stir your neighbors up. Every person who has the bee-keeping interests at heart should not fail to do his utmost toward getting this necessary appropriation from the legislature next January.

Begin now. We must combat foul brood or suffer. This is a worse scourge than many suppose, because they have had no experience with it. Find out all you can about it. It may save you hundreds of dollars. It may break out in your neighborhood if not already there, and you know nothing about it until too late. So let us all strive for an appropriation, a good inspector, thorough inspection, and save our bees.

Let me hear from you about this most important matter. Write me if there is or has been any foul brood in your neighborhood. Do not be afraid to do this. It will all be confidential. It will help me to plan ahead and lay out the work for inspecting later, when we get an inspector. Help the association's efforts in this move by being an earnest member and by doing your part by it.

Texas is now the leading honey-producing State, so let us keep her there. L. H. Scholl, Sec'y Legislative Com.

# POINTERS FROM THE REAR END OF THE BEE

TOLD BY THE JAY

EVERY THING NEW UNDER THE SUN.

In the years that I have kept bees I began to feel that there were just a few principles of the craft that I was certain of—that I knew a few things; but this spring sprung so many surprises on me that "I don't know" too. In a former article you will remember how I treated new swarms by hiving them with weak ones. Well, this year I expected to try the same thing; but what do you think? Nearly all of the swarms issued before the flow began. I have read how they do that in the South, but this was my first experience. I had only five swarms, and four of them were between apple-blossom and clover. I had 35 colonies in fine order for comb honey; and as all had two stories apiece there was little swarming.

Then the next thing that surprised me was the tremendous amount of pollen gathered during locust blossom. The bees just crammed every place full of pollen, some brood-frames being one solid mass of green, yellow, red, drab, brown, and white pollen. Sometimes they would fill a cell with pollen, and cap it over. Sometimes they would fill a cell half full, and the queen would lay an egg on top of it. I took away one story and put shallow extracting-frames on top with foundation; and as soon as they had the foundation drawn out enough they would pack pollen into it. I put on comb-honey supers, and they put pollen in the sections; but I was ready for them by this time. I put the extracting-frames on the hive and the sections on top of them; and when the bees came in with big loads that looked like walnuts (but some were smaller) they got tuckered out by the time they carried it up one flight of stairs, and stopped before getting to the sections. Now I hear some one say, "I told you so. You use the Danzenbaker hive." All right; howl away; and when you get through I have a small howl coming. I had five eight-frame Langstroth hives, and one of them was the worst of any in the bunch. It has been said that bees will not put pollen in drone comb. Mine do. Some of those large drone-cells had a wad of pollen in them big enough for a tumble-bug to play foot-ball with.

Now, the Danzenbaker hive has been roasted quite a little by the big guns because of the pollen in the sections. With me it is no worse than the Langstroth hive of same capacity; and every time I go after the bees in the Langstroth hives (I leave them alone all I can) it reminds me of transferring a swarm from a cracker-box or a nail-keg; and then to put the frames back, what a job! —burr-combs galore; bees smashed by the wholesale. I often wonder how any one can use the Hoffman frame when he can get the nice close-fitting Danzenbaker frames and do away with the burr-comb. Then when it comes to taking out the sections from the T super, all stuck up with warm propolis, it strings out and makes you think you are at a lady's-aid taffy-pulling.

Next came the wax-worm problem. I knew the worms would be in the honey on account of the pollen, so I decided to fumigate. I put the supers in a tight little room and put in about two pounds of sulphur. There were some spiders and roaches in the room, and I wanted to get the whole bunch. My! what a smudge I did make! The next day I could hardy stand it in there with the doors and windows open. It killed two rose bushes on the outside, and made some beautiful autumn leaves on a grapevine ten feet away from the house. In fact, it seemed to kill every thing around except the wax-worms, roaches, and spiders. I could not see that the little smoker they enjoyed was in any way detrimental to their general health and prosperity. Next time I am going to try the carbon-bisulphide cure They say it is explosive; so if you notice that Southern Indiana has a fit of the ague you will guess that another of my experiments has gone wrong.

It is said that the large wax-worm does not get in comb honey—just the little kind. Some of these were about two inches long, and about as big around as a lead-pencil. I guess I don't know what the large kind is. There has been a kind of thing crawling around my bee-lot that swallowed two of my pet toads. The boys call it a blue-racer. Is that one of the large kind?

Now I want to tell the other side. I had about 600 pounds of the finest white-clover honey you ever saw, that I sold to the grocers at 16 cts. per section. One man said: "That looks too good to be made by bees." He took a case. I also had about 500 lbs. of fine extracted honey that I sold in the new Shram self sealing glass jar, and it will hold honey without leaks too. I also increased up to 55 colonies, and gave the new ones abundant stores to start with.

# GLEANINGS FROM OUR EXCHANGES

By W. K. MORRISON

AN ERROR CORRECTED.

Monsieur Bondonneau writes that I was in error in regard to the restarting of the Algerian bee-paper known as *Nahla*. As it is, one number is still gotten out each year to give the names of members of the bee-keepers' society of Algeria, also the officers and other necessary items of news. *L'Apiculture Nouvelle* is sent to each member in lieu of *Nahla*. As the number I received was the same old *Nahla*, I concluded it had been "playing possum," hence the mistake.

LABELING HONEY.

There seems to be a misapprehension with regard to the intent of the national pure-food law as regards the proper labeling of honey. It is not necessary to state from what source the honey came. If, however, you state on the label "Pure clover honey" it must not be some other *kind* of honey. It must be clover or very largely from clover. You are not obliged to state what kind of clover the bees worked on to get it —it may be from alsike, white, crimson, sweet, red, mammoth, alfalfa, or any other true clover. You are not obliged to supply all particulars;

but what you do state on the label must be accurate, and not in the least misleading. You must not deceive the consumer.

SETTLERS ARE WANTED.

Uncle Sam wants settlers on irrigation projects. For the Salt River Valley project apply for further information to Louis C. Hill, Supervising Engineer, Phœnix, Arizona. For the Klamath project, in Oregon, apply to William H. Heileman, Engineer, Klamath Falls, Oregon. For the Truckee-Carson project, in Nevada, apply to Thomas H. Means, Engineer, Fallon, Nevada. For the Yuma, Arizona, project, apply to Francis L. Sellew, Engineer, Yuma, Arizona.

THE GLUCOSE QUESTION NOT DEAD.

The pure-food officials have an association of their own which they term Association of State and National Food and Dairy Departments. This year it had its convention at Mackinac Island, Michigan. Among other things which the meeting did was to pass a set of resolutions severely condemning Secretary of Agriculture Wilson for holding up the operation of the national pure-food law in certain cases. They do not blame President Roosevelt at all; in fact, the latter seems to blame Secretary Wilson for lending a too sympathetic ear to the wail of certain corporations. It is pretty plain, from all that has been said, that they had the glucose decision in mind, and they are not at all pleased at the outcome of it. In any case, a paper which is published by the glucose and whisky interests rushes to the defense of Mr. Wilson. It is evident the glucose decision will not be allowed to rest very long. The Association intends to have all the States pass a uniform pure-food law almost simultaneously. It will be more stringent than the national law.

EXPERIMENTS WITH BEES.

Lord Avebury, who presided over the Franco-British Congress of Bee-keepers in London, made a very interesting address on the subject of bees to the assembled bee-keepers. Of course, what he had to say was interesting because it was mostly original. When he was still Sir John Lubbock he issued his famous "Ants, Bees, and Wasps," which gained him much fame as a student of bee habits and life. His address was largely a continuation of that book, recounting his experiences with bees in trying to discover whether or not they hear or can distinguish colors.

On the latter subject his experiment was convincing. He said, "After the bees had returned twice I transposed the papers. She returned to the old spot, and was just going to alight when she observed the change in color, pulled herself up, and without a moment's hesitation darted off to the blue. No one who saw her at that moment could have had the slightest doubt about her perceiving the difference between the two colors." He also related his experiments with regard to bees hearing, but I do not believe his experiments are convincing. I do not doubt that bees hear. Anybody who has paid much attention to the piping of queens must have come to the conclusion that bees do hear. Otherwise the piping would be useless, which is not likely. Bees do not care for the sounds we make. The sounds we produce are probably too coarse.

BEES ON THE HEATHER BLOOM.

This is the season of all seasons with many European bee-keepers, for the heath or heather is now in bloom, and thousands of bee-keepers have their apiaries located right in the midst of the bloom, the better to secure a crop of honey. For many of them it must be an arduous undertaking to send their bees quite a distance from home. But there is money in it. Some keep their hives on house-wagons all the year round, ready to move at a moment's notice. The German and Austrian wandering bee-keepers have a powerful organization of their own, protecting their interests.

We too might have something of the kind if we had the heather. No one seems to have the enterprise to introduce it. There are places on the Catskill and Shangunk Mountains where it might succeed if given a fair start. Probably in Western Oregon and Washington, in peaty marshes, it would stand a fair chance of succeeding, and possibly at high altitudes in the Rockies—that is to say, at 8000 feet and over, where the soil is peaty and the rainfall sufficient.

THE ALFALFA KING.

Not long ago a number of the agricultural journals of this country announced to the world that Mr. R. E. Smythe, of Sherman, Texas, was the alfalfa king of the world, with a total area of 1400 acres; but Mr. T. J. McKeon, of Argentina, in a letter to *Hoard's Dairyman*, very effectually disposes of that claim. He instances the record of General Julio A. Roca, twice president of the Argentine Republic, who has 192,000 acres in alfalfa, or 300 square miles. Messrs. Salaberry, Labor, and Bercetche, of Cordoba, have nearly 100,000 acres more, and La Germania Estancio Land Co. about 110,000. There are also many who own large areas planted in alfalfa far excelling the Texas man. Mr. McKeon himself claims to have ten times as much as Mr. Smythe, and is now putting down 4800 acres additional. This looks like great news for the bee-keepers, for in South America the cattle are allowed to graze on the alfalfa almost the year round. In Chili and Peru there are also vast areas set aside for alfalfa. As a matter of fact, the culture of alfalfa in this country is only in its infancy, and in time we shall see similar areas in this country, notably so in Texas and California.

ALFALFA IN THE TROPICS.

There is an impression abroad that alfalfa will not grow in the tropics; but as a matter of fact it grows to perfection in Peru, a strictly tropical country. It was from Peru the seed was introduced into the United States. But it rather likes a hot, dry, semi-arid country, and would probably succumb in a steaming, moist lowland country. The writer has seen it growing in Grenada, one of the most southern of the West India islands. The editor of the *Journal of the Jamaica Agricultural Society* thinks it would grow in Jamaica, if given a fair chance, and he is prob-

ably right. On a limestone formation it does best, as it has a liking for lime, and there are some places where every thing seems to be to its taste, and possibly there are such places in the Isle of Springs. In some of the "dry" islands of the West Indies it stands a fair chance of succeeding, more particularly at an elevation.

ALFALFA IN VIRGINIA.

The Old Dominion is coming forward to take its place among the alfalfa States. One farmer is putting down 1500 acres to it just as fast as he can get the land in the proper condition. He first plants the clean well-manured land to crimson clover and then to cow peas. After that follows a heavy application of lime. Planted on such a bed the alfalfa comes along at a great rate. In the judgment of experts it will yield as heavily as it does in Colorado or Montana. If this is so, and it seems to be absolutely true, it means a tremendous boost for old Virginia. The Wing brothers, of Mechanicsburg, Ohio, strongly urge all would-be growers of alfalfa in the South to apply lime heavily—as much as eight tons of ground lime per acre if financial circumstances permit. I imagine that, in so warm a climate, alfalfa will yield some honey.

# GENERAL CORRESPONDENCE

## IMPERIAL VALLEY, OF CALIFORNIA.

### A Note of Warning to Those who Believe this a Bee-keeper's Paradise.

BY J. W. GEORGE.

W. K. M., page 894, July 15, has jumped at conclusions without making proper deductions. Perhaps a little write-up from one who is on the spot, and who is fully conversant with the actual conditions, might not be amiss just now.

Imperial Valley is *going* to be one of the greatest valleys in the United States. I will not take space to describe it minutely; but suffice it to say, it is a large basin below sea level, with a perfectly level surface, and is about fifty miles square, practically all susceptible of cultivation, and a portion of it is now under cultivation. Till a few years ago it was known as the Colorado desert. There is a considerable acreage in alfalfa, which helps the bee-man; but there is a limit to all good things. Let me sound a warning right here, and give a little history.

The real-estate men and the local newspapers have financially ruined many a man in this valley. This year they published and talked of the great profits in raising cantaloupes for the eastern market until people almost believed that dollars grew on cantaloupe-vines. The result was that hundreds of men planted cantaloupes, and harvested failures. Why? There were too many in the business—hundreds of men lost all they had. Now the local papers and real-estate men have taken up the honey cry, and it may bring about the same result for bee-men. With that in view I will give you the actual facts and conditions as nearly as I can.

As closely as I can estimate, last year's crop was about two cases of extracted honey per colony. This year, indications are for a little better than one case per colony. Last year there were about three carloads of bees in the valley to gather the honey; this year there were 15 carloads of bees shipped into the valley, which makes a total of 18 carloads. Our crop will probably amount to 12 or 15 carloads of honey. I am not going to say that the increased number of bees is entirely responsible for the average reduction in yield per colony; yet there are some who think it is.

The country here that is sown to alfalfa in sufficient acreage to be profitable to the bee industry is all occupied. I would advise any one contemplating coming here with bees to make haste slowly. You had better come and look the situation over. However, don't think that the bee-keepers of Imperial Valley are hide-bound, and don't want other bee-men to live. Let me give you an instance to prove the contrary:

One of our fellow bee-men had his entire apiary (with the exception of two colonies) burned, fixtures and all. The bee-men of the valley donated from three to ten colonies each, and made for him a new apiary. They actually hauled the colonies to him, some of them coming as far as twelve miles.

We have an incorporated association for the purpose of marketing our honey and purchasing our supplies. Our officers are, D. D. Lawrence, General Manager; Directors, J. B. Whittaker, Henry Perkins, George Jenifer, Thomas Philip; J. W. George, President. Our secretary is a very busy man, having a large apiary of his own; still I think he would answer any question through the bee-papers that would be of interest to any one contemplating moving bees here.

One thing I did not mention—this is not a paradise to live in.

Imperial, Cal., July 25.

## SIX MONTHS OF WINTER.

### Bees Confined for so Long a Period Need Good Stores and Good Ventilation; the Value of the Right Combination of Conditions.

BY H. H. ROOT.

In localities where the honey-flow is more or less continuous, or where there is usually a flow of good honey in the fall, it may be unwise to substitute sugar syrup for the winter supply of food. But in some cases the fall honey is not a proper winter food, or the winters may be very long, so that sugar syrup is the safest to use. Mr. C. F. Smith, of Sheboygan, Michigan, finds that the syrup gives him much more uniform results, owing to the length of the cold season, which averages about six months.

At the convention of the Northern Michigan Bee-keepers' Association, Mr. Smith gave some interesting data concerning his locality. The honey-flow begins about the 18th of June, and lasts only about thirty days, there being not

enough honey coming in during July and August to keep up brood-rearing. If no brood is reared after July it is easy to see that the colonies will not winter well, and that feeding must be resorted to soon after the natural flow ceases, in order to give the force of young bees necessary.

By so doing, the winter supply of food is also provided, although for merely keeping up brood-rearing a thinner syrup is fed than would be desirable for winter stores. When colonies of young bees are in hives containing plenty of good sugar syrup, and placed in a well-ventilated, all-underground cellar, they may be kept six months in good condition.

Mr. Smith, after losing a good many colonies, found that it paid him to remove the covers from the hives in the cellar. Two or three thicknesses of burlap are placed over the frames about a week before the colonies are put in the cellar, and then when the carrying-in is begun the covers are removed. The idea in this is to leave the bees in such condition that the moisture may have a chance to escape, and then it does not make so much difference whether the cellar is damp or dry.

If other conditions are right, the temperature of the cellar is also of less importance, for the bees are able to control their own temperature by the way they cluster. Bees closely clustered do not lose much heat.

These facts go to show that it is a combination of conditions that produces good results in wintering rather than any one condition alone. Some bee-keepers have found that darkness is essential, while others make no effort to exclude the light. Some have elaborate systems to provide ventilation, while others say that the ventilation is unnecessary. In some cases bottom-boards are removed, and in others they are left on, etc. Locality accounts for much of this difference of opinion, and the condition of the colonies and the quality of the stores account for more.

But it can not be denied that the right combination of conditions must exist in order that the bees be given a chance to take care of themselves. If the atmosphere of the cellar is damp, then the temperature must not go below 40° F., for dampness and cold are two conditions that should not exist at the same time. It is probable, also, that if the temperature is high enough to permit the bees to move about freely, the light should be excluded to keep them from becoming restless. Foul air should never be tolerated; and if the construction of the cellar is such that the air is not naturally changed, then ventilators must be used. A rapid change is not necessary, however, for if the bees are semi-dormant they need but little air. Colonies have been known to winter well in hives the entrances of which, by mistake, were left stuffed with rags. Ordinarily, if the bees become so restless as to require a mid-winter flight, then we should say that the combination of conditions is wrong.

As long as the bees keep quiet, the chances are all in favor of strong colonies in the spring. It is not so important to know how many colonies are still living when warm weather comes as it is to know how many colonies there are that will be in condition to "do business on the old stand" by the time the honey-flow begins.

## HOT OR COLD UNCAPPING-KNIVES.

### An Argument in Favor of Cold Knives; the Advantage of a Sharp Edge.

BY LESLIE BURR.

Whether an uncapping-knife should be hot or cold is a question that can not be answered by saying that one way is better than the other; but, as a rule, I think that the knife should be cold. This statement, I know, is not in accord with the views of many bee-keepers in the West and some other parts of the country, perhaps. In my mind, I can see the bee-keeper on the Pacific coast as he says, "Well, I should like to see you uncap sage honey with a cold knife;" but I should like to ask such a person when he ground his honey-knives last. His reply probably would be that the knives were ground some time last season.

To uncap honey the knife should be sharp and *clean*. If it has these two qualities, and is in the hand of a person who knows how, almost any kind of combs can be uncapped as fast as the largest extractor now made can extract them.

The way to uncap honey is to have two knives ground sharp and clean. The knife that is not in use should be placed in a pail of water, and when the knife that *is* in use becomes dull and gummy, after perhaps from half an hour to three hours' use, the time depending on the kind of combs, it should be changed for the other one. Each time the knives are changed a moment's time should be spent on the blade with a whetstone. Not only should the edge be brushed up, but the whole blade should be gone over to remove the gummy coating that has formed, for it is this gummy coating that causes most of the trouble.

Of course, there is honey that can not be uncapped with a cold knife, but it is not honey that has been recently gathered I have yet to see honey that has just been gathered that can not be uncapped with a cold knife.

And now as to the way to cut the combs. Only the upper edge of the knife should be sharp; the lower edge should be dull, so that it may be used for trimming the wax off the top-bar. Do not uncap with a sawing motion unless the comb happens to be an old black one that can not be uncapped otherwise. A draw cut is much faster and smoother.

The advantages of working with a cold knife are many. No oil-lamp is needed to heat up the extracting-house, and possibly set fire to it; there is no changing of knives every comb, and, last of all, more work can be done and with much less bother.

Valparaiso, Indiana.

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IN FAVOR OF A COLD UNCAPPING-KNIFE.

I have used uncapping-knives for ten years, and I like the cold knife best. The edge, however, must be keen and polished, and the honey warm enough to run freely. Half the trouble comes from a stained and rust-spotted knife.

Marion, N. Y. J. A. Crane.

[We should be glad to hear from others on this question of hot and cold knife.—Ed.]

## STAYING FULL SHEETS OF FOUNDATION.

### Both Wires and Splints Used; Some Cases where Splints were Not Satisfactory.

BY E. F. ATWATER.

*Mr. Editor*:—Your request for reports from those who have used a combination of splints and vertical wiring prompts me to give my experience, so I enclose three photos illustrating some of the results of the use of splints to prevent sagging of full sheets of foundation. In Fig. 1 we have two frames, the upper one having the foundation supported by two wires and four splints; the lower frame has three wires and two splints, the latter being a fair representative of several thousand frames which we are putting in use this summer, except that we are using mostly Hoffman frames, while those shown in the cuts are plain, with staples at the bottom, according to the Coggshall plan. We tested a few splints in previous years, but were not fully satisfied with the results. However, since inventing and using our combined wax spoon and brush described on p. 1590, Dec. 15th, last year, we decided to give them a thorough trial this summer, as, with this little implement, we can give the splints an extra coating of wax after they are imbedded in the sheet of foundation. You will note in Fig. 1 that both splints and wires are waxed. Early in June we hived a lot of swarms, mostly shaken or "tubed," on such frames. In perhaps two-thirds of the hives, results were all that could be desired; but in some we found all (or nearly all) of the combs in the condition shown in Fig. 2. The bees are likely to begin gnawing at the splints at or near the lower ends; and when this happens they don't know when or where to stop, short of the actual removal of at least the lower half of the splint. In Fig. 3 we see plainly just where the splints have been gnawed out of the foundation, and how the bees are inclined to fill the vacant spaces with drone and irregular transition cells.

What can we do about it to prevent bad results? First, if we have a bee-space under the lower edge of the sheet of foundation we can use splints only six inches long, putting them in so that they reach within two inches of the bottom of the sheet of foundation. Or we can do as I did with a lot of frames—we can use common wooden toothpicks instead of the long splints. But I hope to solve the problem in another way, namely, to coat the splints with some substance (possibly shellac) that will render them hard and smooth, so that the bees will have no chance to pull and cut at the fiber of the wood. Mr. Thos. Chantry has used stiff wire, like knitting-needles, but these

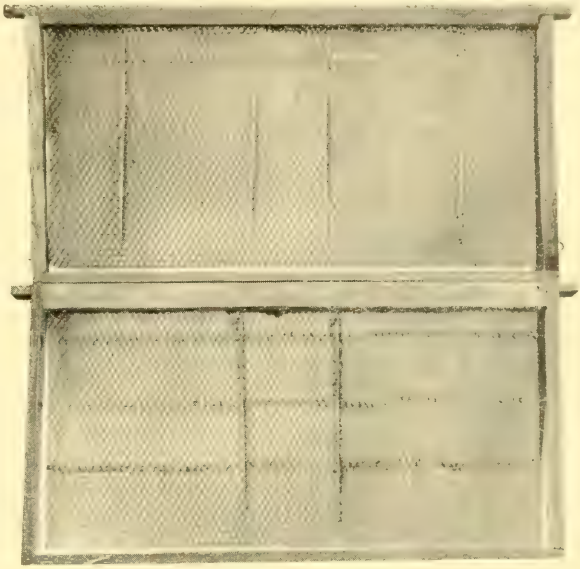


FIG. 1.—ATWATER'S METHOD OF USING BOTH WIRES AND SPLINTS.

In the upper frame there are two wires and four splints; in the lower, three wires and two splints.

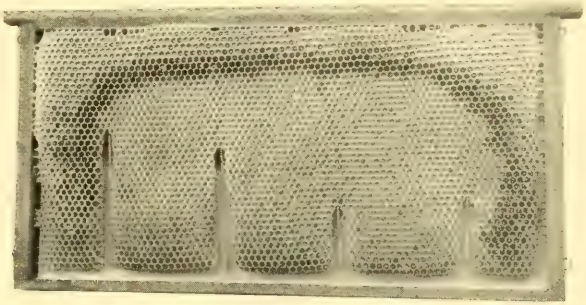


FIG. 2.—IN SOME CASES WOODEN SPLINTS ARE GNAWED BY THE BEES.

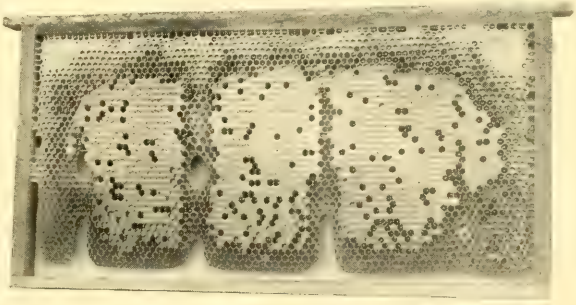


FIG. 3.—SPLINTS GNAWED AWAY, MAKING THE COMB DEFECTIVE.

APIARY OF E. H. JAMES, CAIRO, ILL.
This yard is located in the suburbs of a city which is between two large rivers. A crop of honey is secured each year.

are too expensive. Let's improve the details of the splint method until it gives good results all the time.

Meridian, Idaho.

[Figs. 2 and 3 do not give one a favorable impression of wood splints; but we are prepared to say in this connection that we saw nothing of this kind at Dr. C. C. Miller's apiary. He showed us comb after comb built from foundation stayed with wood splints, and these combs were as flat as a board, without any suggestion of wooden stays in the midrib; and, what is more, they were filled out to and in contact with the bottom-bar. One strong claim made by Dr. Miller for splints is that, by means of them, one can use sheets of foundation reaching clear down to the bottom-bar. Here, evidently, we have a case where locality affects results or else Mr. Atwater does not work the plan right. Dr. Miller is respectfully called upon to show why a third of the combs look like Figs. 2 and 3.

Years ago we used folded tinned bars to stay our combs, and we had many that looked like Figs. 2 and 3, with this difference, that we had only one stay or bar.—ED.]

## AN APIARY BETWEEN TWO RIVERS.

BY E. H. JAMES.

Ten years ago I started with two stands of bees—one box and one frame hive, with the intention of increasing the number if the location would permit. I am in the suburbs of the city, between two broad rivers which almost surround the town, thus making the territory for bees comparatively small. To my surprise the increase in my apiary has been steady, and I have never failed to have an excellent surplus of honey.

My apiary at present consists of 48 colonies, and this season, up to July 25, I took 1000 pounds of comb honey, which has been sold readily at 15 cts. per pound in the city.

My hive-stands are pine pieces, 4 inches square and 3 feet long, there being two hives on a stand. For shade-boards I use any kind of broad planks, weighting them down with rocks.

The high board fence has prevented people from being annoyed by the bees, thus avoiding trouble with neighbors.

The time given to the bees has been after working hours, my occupation being an engineer. I get two crops of honey a year, the fall flow being the larger.

Cairo, Ill.

[We desire to call attention to the importance of a high tight-board fence to inclose a bee-yard in or near town. A good hedge fence of willow or osage orange would do just as well. At all events, the bees should be made to fly high before they leave the premises. In this way they avoid coming in contact with pedestrians or horses.—ED.]

## BEE-KEEPING AND TRUCK-FARMING IN COLORADO.

### Snap-shots from Grand Valley.

BY R. D. TAIT.

I don't remember ever seeing in GLEANINGS a picture of an apiary in this valley. I send two views, one of our small yard of bees and the other showing how we dispose of our honey. Our farm consists of five acres, all of which is in truck, and one can get some idea of the productiveness of our soil by the picture, showing the onions, cauliflower, etc., which are raised among asparagus, set out this year—onions and cauliflower coming off in time to give the young

asparagus time to develop thoroughly, and harden before cold weather.

The truck-growers in the East can hardly realize the possibilities of an acre of our soil in this valley, with plenty of water and sunshine; but they can get some idea of it from the picture of our market-wagon, which goes into Grand Junction three to five times a week with honey and vegetables, etc. My wife drives the horse while I go in and sell the goods. We carry a first-class article, and get a first-class retail price.

We run for comb honey only, but have some extracted or chunk for certain customers. We try to have just what they want, and have no trouble in disposing of all the honey and vegetables we can produce.

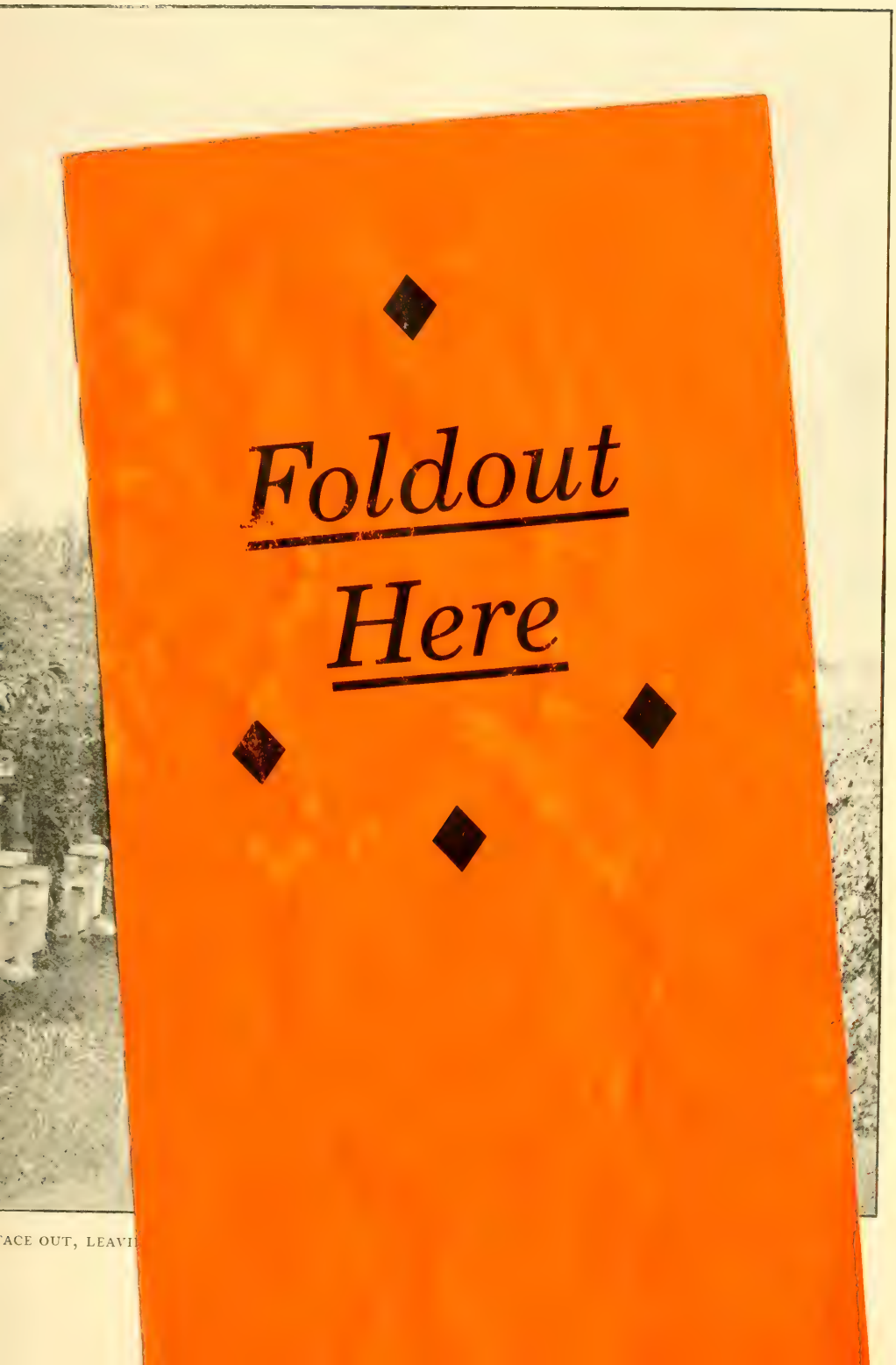
Grand Junction, Colorado.

TAIT'S HONEY AND VEGETABLE MARKET-WAGON.

[The great majority of our bee-keepers (perhaps 90 per cent) run their bees in connection with some other business, and it is well that they do. In some localities the seasons for many are very uncertain. When it is good, there is a rich harvest.

On the principle that it is not wise to put all the eggs in one basket, we advise the majority of producers to run their bees in connection with some profession or business. Bee culture on a small scale works admirably with any one of the professions. It goes well with fruit-growing, truck-growing, or poultry-keeping. Our corre-

AN APIARY IN COLORADO, RUN IN CONNECTION WITH A TRUCK-FARM.




ACE OUT, LEAVI

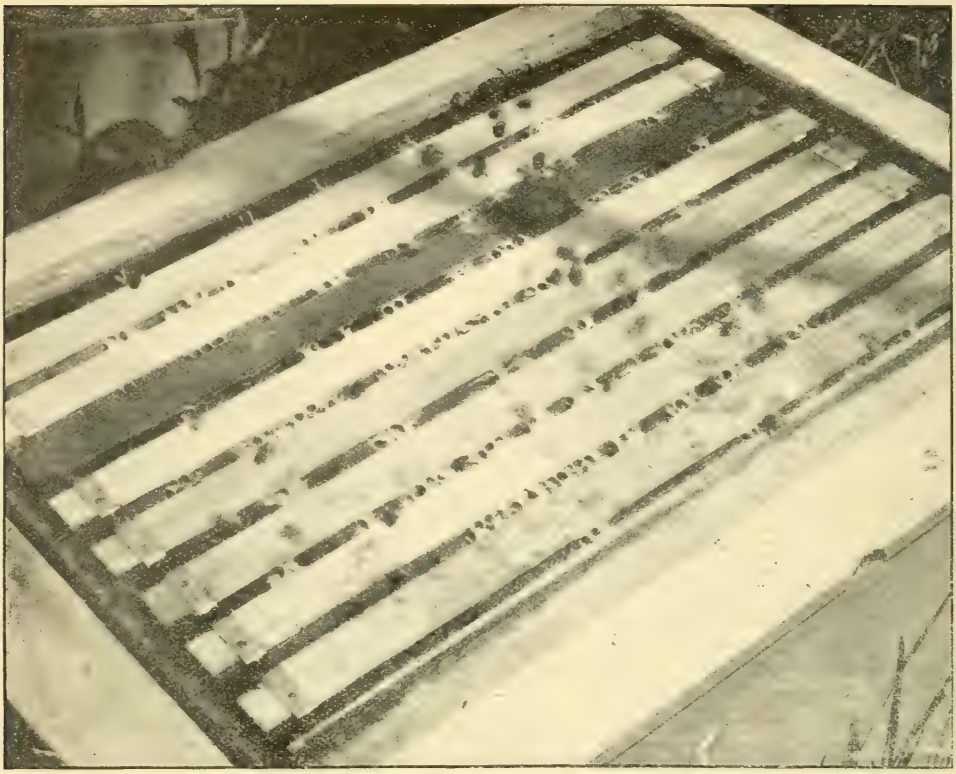


FIG. 1.—A FAIR SAMPLE OF HOW CAUCASIANS BUILT BRACE-COMBS BETWEEN THE TOP-BARS DURING A GOOD HONEY-FLOW.

spondent, Mr. Tait, is sure of making something every year.

He is one of the bee-keepers we feel like commending, because he sells his honey and his vegetables direct to the consumer, thus relieving the congestion at our great market centers.—Ed.]

## A HONEYSUCKLE ARBOR FOR SHADE.

BY L. C. EBRITO.

I am sending you a picture of a model Texas apiary. Some bee-men in the North object to a dense shade; but I think it is all right in the South. My bee-arbor is 8×88 ft., and is covered with honeysuckle. At the front end the rafters are hipped, and extend about 12 ft. high. On these I have four monthly running roses, two of them being Marshal Neils. The peach-tree hides that part of the arbor to some extent.

There is plenty of room under my arbor for 72 colonies, but I have only 57. The little house at the extreme right is my shop. It is connected with the arbor with frame work covered with vines, so I have shade going to and from my bees. My hives face the north and south.

I never used full sheets of foundation until this summer. I made a tool for imbedding the wire, which I think does the work well. I took a large crooked sewing-awl, and with a very fine three-cornered file I cut a groove from near the point back, some ⅝ of an inch. I draw the awl along with the wire in the groove, making, in my judgment, a good job of imbedding.

Mesquite, Tex.

[It is the almost universal custom for the bee-keepers of Arizona to arrange their hives in two parallel rows on 2 by 4's with an east-and-west shed over them as shown here. As Mr. Ebrito says, it is almost a necessity to use some sort of shade in a hot climate, and something of this kind is ideal. By having a shed of rank-growing vines as here shown, running east and west, the sun can not get to the hives as the day advances. It can strike them only in front. The further south the apiary, the more nearly the sun will be overhead, and the less it will strike the hive-fronts. In the morning it will strike the east end of the shed, and in the evening the west end. But at neither time of the day is the heat intense.

In Arizona, where the bee-keepers have a shed on this principle, it is of simpler design, with a sort of dry brush, grass, or weeds, piled on top and held there by wires drawn over the whole.

There will be nothing to prevent one in the North Central States from adopting a similar shed. By this arrangement one can have an apiary that will enable him to work with comfort

out of the flight of bees and under cover where cross bees are not likely to go.

We have had an enlarged view made of this bee-yard because we respectfully commend the general plan of it to our readers as a whole, in either the North or South.

We wish to suggest in this connection that a sort of trolley wire or cable could be drawn taut on a central line over each row of hives, and secured by posts at each end. A grooved pulley with a small tackle would then enable one to lift the supers off the hives, hold them in midair, or push them anywhere on the trolley, clear up to the extreme end, where they may be deposited on a wheelbarrow.

The arrangement of hive-stands, also, is very simple, and has the further advantage that it permits the apiarist to push his toes or insteps clear under the hive. This allows him to get near his work.—ED.]

## CAUCASIANS, AND THEIR DISPOSITION TO BUILD BRACE-COMBS.

BY E. R. ROOT.

On page 870, July 1, we referred to the tendency of Caucasians to build brace-combs excessively. We promised to furnish a photo, and here are two of them, showing the tops of two of the hives that were fair samples. While we occasionally find Italian colonies that build comb almost as bad as this, they are the exception.

As our readers will recall, we had 35 Caucasian and 35 Italian colonies at this yard. When we opened the hives of the dark bees we were almost sure to find brace-combs like those shown here. Of course, there were exceptions, both among the Italians and the Caucasians. But we are speaking only of the characteristics of the two races as we found them at this yard during a good flow of honey.

But not only were there brace-combs between the *top-bars* of the Caucasian colonies, but they were built through the center of the brood-nest to an extent that in some cases made it difficult to spread the combs, because they were so tightly stayed by means of these spurs.

## THE GROWTH OF A BEE-KEEPER.

### How a Sickly Boy Battled with Disease and Finally Became an Extensive Producer of Comb Honey.

BY ALLEN S. HOWDEN, HIS FATHER.

[The following account of how a sickly boy, pronounced incurable by eminent doctors and surgeons, began to mend after he started to keep bees, so that he is now a strong hearty man able to produce a carload of comb honey in a season, is exceedingly interesting. His pluck and ambition to get well and become one of the most extensive bee-keepers of his State will prove encouraging and helpful to some other boy or girl, perhaps handicapped by a frail body. The hero of this sketch has our hearty congratulations.—ED.]

It may be of interest to some of the readers of GLEANINGS to hear something of the progress of one bee-man, and of the growth of his business, which is now the largest in Allegany Co., N. Y. As his early history has never appeared in print

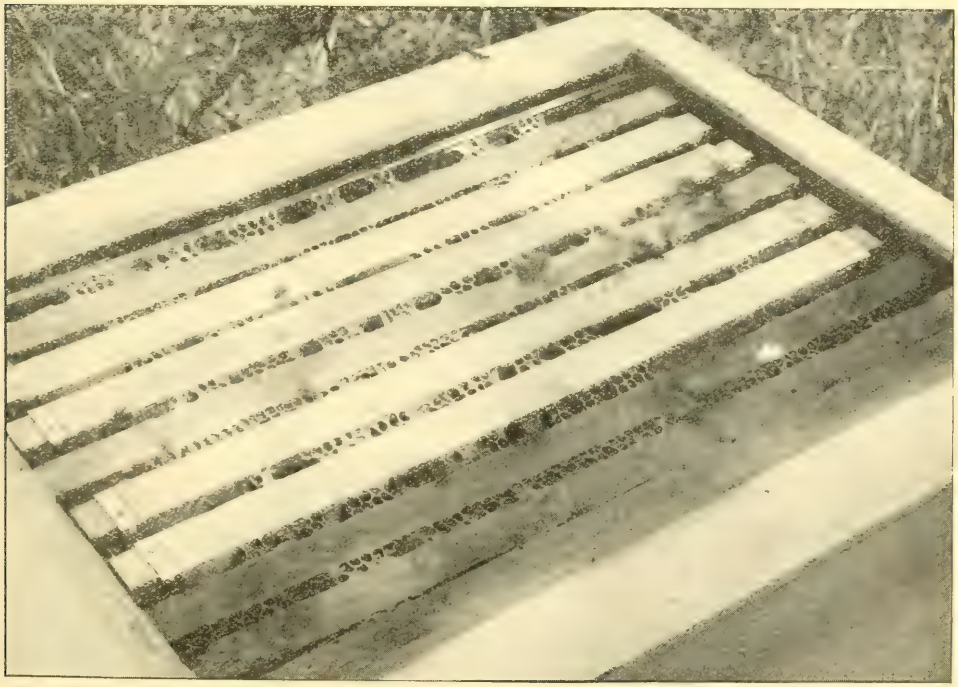
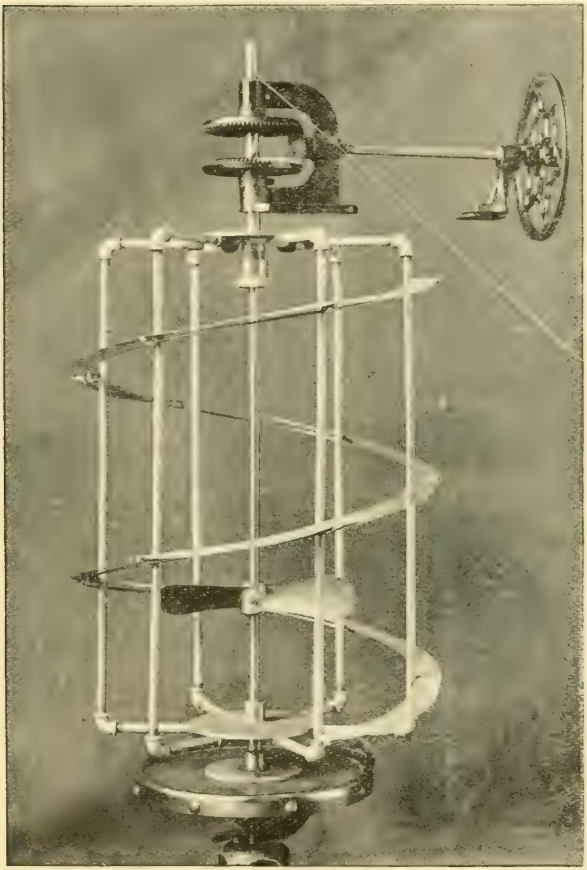


FIG. 2.—ANOTHER SAMPLE OF THE SAME THING SHOWN IN FIG. 1.

I feel as though my letter would be more complete if I were to go back a little.

When Leon F. Howden was four years of age he fell from a chair on a hard floor and sustained a bruise on the hip which caused blood-poisoning and a psoas abcess, and, later, diseased bone beneath it. When he was taken down with this trouble he was a fat, rugged boy, and weighed 50 pounds. The abcess was not properly drained at the start, and the blood soon conveyed puss to other parts of his body until other abcesses of like nature appeared one at a time for a period of two years, until he had had twelve of them in all. Several of them were so deep-seated that, while they were gathering, they caused an unusually high temperature, and some even started on the bone, not healing for months, and then only when pieces of bone had been discharged through the openings.



COVEYOU'S AGITATOR FOR HONEY-HEATING TANKS; SEE PAGE 1067, SEPT. 1.

The movement of the parts in opposite directions causes the honey to circulate freely, so that the whole mass is kept at the same temperature.

Many noted doctors and surgeons of the country pronounced the boy incurable. He underwent seven operations at his home, some of which were of two hours' duration. When he had improved a little, but before he was able to walk again, his parents took him in their arms and went by train to Rochester to consult Dr. E. M. Moore, at that time an old, white-haired, feeble man, but one who had been one of the greatest surgeons known in Western New York. At that time Dr. Moore said the only thing to do was to get that dead bone out of the boy's hip. If it couldn't be done at one operation, another trial should be made. He was brought back home without the operation at that time, but was later operated upon by a son of the former surgeon. At this time Leon was away from home, and was in the hospital bed two weeks. He was in the General Hospital in Buffalo two weeks at a time, two different times, and each time was operated on. He took chloroform twelve times in all.

When he commenced to gain, his weight was 25 pounds; and at 15 years of age he was sickly and far from being able to work on the farm with his father and brothers. It happened, however, that a near relative was about to go out of the bee business, having 24 colonies of bees in good double-walled hives. These were bought by his father, with 50 good empty hives, for $40.00. Because of Leon's condition they were brought home and turned over to him for his own. In a short time he showed an unmistakable interest in the bees, and his parents were sure that he would be successful with them if he had the strength to take care of them. He soon had a copy of the A B C of Bee Culture, and a little later subscribed for GLEANINGS. His mother says that it always brings a smile to Leon's face when he comes in and finds on the stand a new GLEANINGS.

Well, he kept improving in health until the last thing to do was to have a piece of skin the size of a silver dollar taken from one of his limbs and grafted on to a sore that would not heal, which was on the other limb, just above the ankle. Now he is 20 years of age, standing by his bench near his oil-stove in his honey-room folding sections and putting in foundation at the rate of over a thousand a day. In one day recently he put together 40 honey-boards of 33 pieces each, driving 90 nails in each board. From the little fever-burned boy of 25 pounds he now tips the scales at 160, weighing the most of any one person in the whole Howden families. He is hearty and strong, and always wants a good big chunk of candied honey near his plate at meal time. Last season he sold nearly a full carload of good to fancy comb honey; besides that, he extracted and sold to his friends and neighbors 12,000 pounds. He has 250 colonies of bees. Leon aspires to be tne greatest producer of fancy comb honey in the State.

Fillmore, N. Y.

## THE PLURAL-QUEEN SYSTEM.

### Is it Profitable for Bee-keepers to Practice it?

BY E. W. ALEXANDER.

[The following article was written last March; but as we had already decided to suspend further discussion on the plural-queen subject for the time being, or until the following fall, we have held it until now. It is not our purpose to reopen the discussion if it is not desirable; but as Mr. Alexander will probably never be able to write another article, on account of his health, we are placing this before our readers at this time. We suggest that it be given a careful and unprejudiced reading by those who may be opposed to the practice. Observe he does not urge it for all seasons and all conditions.—ED.]

It is now about 18 months since this new method of bee-keeping dropped into our camp like a bombshell. During this time I have had but little to say as to its merits or demerits. Some endorsed it at once as another forward step, while others were ready to condemn it from the first. It is now of a proper age to bear some fruits whereby it will be known. It is only natural that I should be anxious to hear from others in regard to the results derived from this system. Like many other improvements it has come to stay, and will be adopted in some ways by intelligent bee-keepers as long as bees are kept by man.

In making our increase it has, in connection with the nuclei system, enabled us to make more increase with less expense and trouble than has ever been made before. In forming nuclei heretofore, we have taken two or three frames of brood and honey with adhering bees, and, after putting them into an empty hive, set them off to one side, shut the bees up two or three days, and then given them a queen-cell, a virgin queen, or a laying one, and left them to build up into a colony of proper weight and strength for winter, not expecting and seldom securing any surplus from them.

But how different now! All that is necessary is to form our nucleus over a queen-excluder on any colony of medium strength, and the next day introduce a laying queen to the nucleus; then in about 25 days the hives can be separated. Each hive will be full of bees and maturing brood; then move the lower hive a little to one side, and set the upper hive alongside so about an equal number of the working force will enter each hive.

Here you now have two good strong colonies in the place of one. Each has its laying queen, its hive filled with brood, and a good working force of bees. There has been no chilled or starved brood.

This, you will find, is the surest and best method that has ever been practiced in order to make a large increase in time for our early harvest. This one advantage of itself, which is easily secured by a plurality of queens in a colony is worth hundreds of colonies and tons of honey to the extensive honey-producer.

I am sorry to see men of experience in our business condemn new methods before they have given them due consideration. There are certain seasons of the year and certain conditions a colony can be in when a plurality of queens is of no particular benefit; but because this is so, it is no proof but that at other seasons, and under other conditions, a plurality of queens in a colony is a great help. There seems to be a tendency on the part of some bee-keepers to belittle this idea, and make it appear of little value. This we must expect. It has always been so—one class trying to pull down every thing of an advanced nature, while others are trying to build up. This whole question, like many others connected with our business, must turn entirely on this one point—does it pay? If it pays to check the desire to swarm in very strong colonies, then on that point it does pay. If it is to our advantage to have unusually strong colonies just before our main harvest for surplus, then it pays on that point. If there is any gain in superseding our undesirable queens without an hour of lost time in egg-laying, then on that point it pays. If it pays to have strong full colonies to put away into their winter quarters, then it pays to have a plurality of queens in your hives during the latter part of brood-rearing. If it is worth any thing to have a surplus of laying queens four months of the season, so if one is accidentally killed, or you find a queenless colony, you have a plenty to take her place, then it pays to have a plurality of queens in some of your colonies. If it pays to rear your queens instead of buying them, then certainly it pays to rear several in one colony instead of only one. If it pays to double the number of our colonies before our early harvest, and have each one full and as strong in working force as one-half the number would have been had we not practiced this new system, then surely on that point it pays.

Yes, my friends, this idea has come to stay; and as the years go by there will be many advantages derived from it that we little dream of now. I think this new departure from the old rut of the past has already borne some very good fruit considering its age, and the fact that it was an unwelcome visitor from the first with some. I hope that many of our most experienced honey-producers will give this subject a fair trial the coming season, and then when we have heard their verdict we will let this subject rest.

Delanson, N. Y.

## GETTING RID OF OLD BEES FOR WINTER.

BY F. H. CYRENIUS.

For a number of years I have wintered only young bees in many hives, with satisfying results. The plan is, to move the hive to a new stand at the close of the honey harvest in the fall, which with me is about Sept. 20.

The first experiment, more than ten years ago, was made by removing one of two hives, standing side by side, to a new place in the bee-yard. The remaining hive received all the old bees from the hive removed. In January I made an examination and found 22 dead bees on the bottom-board of the removed hive, and about a quart on the bottom-board of the hive that gave shelter to the *old* bees of both hives.

I have tried the experiment many times with about the same results. I reason this way—that those old bees are needed no longer, and are only a detriment. They can be of no use until next spring, and they are all dead before that time. The time we want bees is about two weeks after they begin to breed up in the spring;

and it is easily seen that a few times flying at that time will take them all.

Then, again, those old bees become more or less restless; and dying, as they do, they must disturb the colony more or less. Is it cruel thus to treat them after their days of usefulness are past? I have always furnished them shelter. only to find them soon with the great majority.

TIME TO MOVE.

This will depend on locality and conditions. I should say, as soon as they are no longer needed at this season. Do not wait until too late, because you might lose some that would be of use in very early spring; but every bee-keeper knows his bees are at the weakest point just before the spring brood begins to hatch, and it is safe to say every bee that gathered honey the season previous has long been dead.

Oswego, N. Y., Aug. 7.

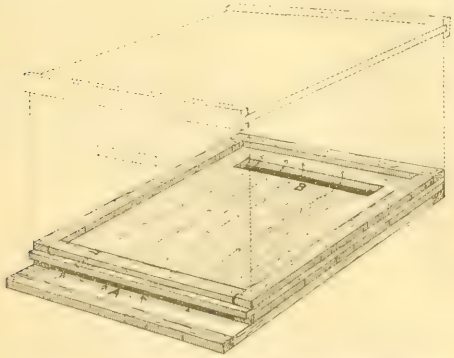
[At first thought this may seem like rank heresy, bnt we are not sure but there may be something in it. We do know that, if a hive has nothing but old bees, it will be numbered among the dead next spring.—Ed.]

# Heads of Grain

## From Different Fields

PROTECTION OF BOTTOM-BOARDS IN COLD WEATHER.

After having read the article on page 98, Jan. 15, by Joseph Rose, on double bottom-boards, I wish to show the board (see illustration) I used under fourteen stands in the winter of 1906. I had to take my hives off all these boards in the latter part of January to save the bees, as fully one-third of each colony were dead, the dead bees being mostly on the upper bottom-board, and at the sides of the hive inside.



A DOUBLE BOTTOM-BOARD TRIED AND FOUND WANTING.

I used three-story alternating hives, top story chaff, and hives all well protected outside with excelsior and outer casing. When they quit work at the close of the season they had arranged their winter brood-nests to their own liking.

When I placed this bottom-board with an opening clear to the back of the hive I simply disarranged the whole work the bees had been weeks in planning; and had I left it till spring I should have lost most of the colonies. The cold air passing through under the bottom-board had kept the upper board cold, and driven the bees up into the cold combs of honey. It served me right for interfering with their plans.

But the past winter of 1907 I left the summer bottom-board sealed just as the bees had fixed it, and slipped an extra board under, making a dead-air space between the two. I then placed the hives in some large thin cracker-boxes and set them on about four inches of dry hay, leaving the front of the boxes all open, facing the east. I crowded excelsior in between the sides of the boxes and the hives, and placed supers on the hives partly filled with leaves.

I have never had bees come through in finer condition. In the middle of January I tried to clean out the bottom of the hives with a wire; and as it was a very cold day I was sure I would have no trouble. But I had trouble just the same. Every hive I looked into had the bottom-board covered solid with live warm bees, and not a dead bee could I find. The bottom-boards covered with warm lively bees in mid-winter, and plenty of honey above, looked good to me, and convinced me that we should be sure that the bottom is well protected and warm, as well as the top of the hive. I did not find a moldy or damp frame this spring, but all were dry, with plenty of honey and bees. C. B. Palmer.

Bradshaw, Neb.

[We may explain to our readers that on p. 98, Jan. 15, we illustrated a bottom-board made on very much the same principle as the one here shown, and which proved to be so unsatisfactory in the hands of Mr. Palmer.

It will be remembered that the final results of our obstructing all the sunlight from the entrances of our hives by a lean-to board, storm-door, or other device, were somewhat in doubt. Apparently, early in the fall it prevented bees from flying out on cool days and thus becoming chilled, never to return. We are not sure but that colonies without the storm-doors were in almost as good condition as those with them.

We believe our correspondent is right, however, in urging the importance of a warm bottom-board, against which the bees may cluster and not get chilled.—Ed.]

BEES LOST FROM SUPERS THAT ARE TAKEN AWAY BEFORE THE BEES ARE OUT.

Referring to your request, page 701, June 1, I will say that, in 1907, I took one super off with all the bees on the extracting-combs, as advised in a book on bees, and for experiment I took them to my laboratory, nearly 700 feet away, where I brushed all the frames, one by one, clean of bees, and placed them where bees could not gain access to them. The bees flew around as if lost. Some strangers or robbers came in and out; but the bulk of them settled down in little bunches, of which I carried back to the hive a great many, and those left in or out of the laboratory died.

Joaquin Perez y Perez.

Monovar, Spain, Aug. 11.

USING A ROOFING PAPER FOR A QUILT.

After reading the article on page 936, Aug. 1, on hive cloth, I concluded to tell your readers of a cheap and substantial cloth or cover. I have always used a cloth, the main reason for doing so being that it is a protection against robbing, for it makes an additional cover, and a good thing where the top cover is warped.

I have used the glazed oilcloth, and have used floor-cloth; but in removing them the paint would peel off, and the bees soon gnaw holes in them. Last spring, having a roofing-paper called "Buckskin rubber roofing," which contained no tar, I concluded to try it. I find it does well. The bees won't touch it. It can be removed easily, and it will last for years.

The Buckskin rubber roofing comes in three grades. I use the two-ply, which costs $1.80 per roll in St. Louis. It is 32 inches wide, and will make 48 covers for ten-frame hives, making the cost 4 cts. each. A READER.

HOW TO PUT ON BEE-ESCAPES.

Mr. F. G. Marbach's suggestion, p. 929, Aug. 1, is good; but why saw off the honey-board? Justuse a stick ½ inch by the thickness of the honey-board under one end of the hive. It does not matter if the escape-board sticks out ½ inch, as it is not on the hive very long.

ANDREW C. BROVALD.

Babcock, Wis., Aug. 11.

[Yes; and by prying up the rear end of the hive after the escape-board is in place, the stick could be removed, to be used at the next hive.—ED.]

MOVING BEES; USING AN EMPTY SMOKER TO INCREASE THE CIRCULATION; UNITING COLONIES.

When moving bees I use a wire screen in place of the cover. I make the frame for these of 1×1-inch material, 14 inches wide, and 20 long, for eight-frame L. hives. On this I tack the wire screen. Four six-penny nails hold it to the hive. I never drive them to the head, but leave room for the claw of the hammer.

For the entrance I use a piece of pine, ⅜×2, and 14 long. In one edge I cut a notch ½×3, over which I tack a strip of wire cloth, one side having the selvage. This is readily adjusted to the hive, and held by a small nail in each end.

In loading I leave room for the hand, at least between the entrances of every two hives, although enough room for the smoker would be better. When my hives are loaded on the vehicle I clean out the smoker—even the dust; for on the road I use it without fire to give the bees pure air. When a hive begins to get hot I blow out the heated air. A little water sprinkled on them with a brush is good; but very little of it should be used. With all of this precaution, and even if the bees do not warm up, some combs will break down. New combs full of brood are difficult to handle. If you put on a super you may save the bees, even if the combs break below. When uniting colonies I take this wire screen and turn it bottom upward. I cut a notch for an entrance, under which I tack on something for an alighting-board. I take the cover off one of the hives to be united, and put the screen on. Over this I put a super, and then transfer the bees from the other hive into this super. In two days I draw out the screen. T. ARCHIBALD.

Los Angeles, Cal.

BEES BALL A QUEEN RETURNING FROM MATING-FLIGHT.

On a frame of my own make I placed a lot of cells dipped on the Doolittle plan, and grafted them with larvæ from my best queen. I then gave the frame to a colony that was building swarm-cells, after cutting out all these swarming-cells found in the hive. The bees finished 18 good cells out of the lot. Ten days after I grafted the cells I formed nuclei by taking a frame of brood with adhering bees. I placed the queen-cells in cell-protectors and stuck one protector on each comb of brood. Then I put each frame in a hive and kept the hive closed for two days. From every cell a nice large queen hatched, which mated all right, and all are now at the head of fast-increasing families. I watched the queens very closely from the fourth to the seventh day after the cells hatched, especially for about two hours right after dinner. In two cases the bees balled the queen as soon as she came back in the hive after mating. They tore the front leg from one queen before I got her away. I put the ball of bees in a tub of water, and fished the queen out after they had separated, put her in an introducing-cage, and let the bees eat her out. Both queens have turned out well.

I wonder if trouble of this kind is not one of the principal reasons why a good many queens are lost in mating. P. W. HAMILTON.

Meadville, Pa.

[Yes, sometimes.—ED.]

CUSTOMERS DEMAND THE SMALLEST AMOUNT OF FOUNDATION.

On page 934, Aug. 1, we notice the communication from Mr. Hand in which he states that it is "the appearance that makes quick sales." We wish we had his customers to deal with. We have to use as little foundation as possible.

H. G. ALLEN.

San Andreas, Cal., Aug. 22.

VESTIBULED BOTTOM-BOARDS.

On page 98, Jan. 15, Mr. Rose describes his double-bottom-board arrangement, and you ask your readers to test it and report. I would say that I have tested the principle on about 20 colonies, both summer and winter, for we used chaff hives.

I had about fifty ten-frame Quinby chaff hives that I wanted to change to Langstroth dimensions. The Quinby frame is ⅞ inch longer than the Langstroth, so a ⅞-inch board was nailed across the back end of the hive, shortening it to the right length for the L. frames. But the hive was still about two inches too deep; and to overcome this, two ⅞-inch-square sticks were nailed lengthwise of the hive on the bottom, and on each side. Across these, commencing at the front, were nailed ⅞-inch boards which covered the bottom of the hive except at the back end, where enough was left open to provide an

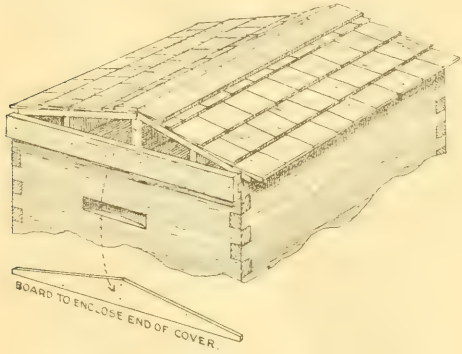
entrance from the lower part, or vestibule, up into the hive proper. These were used two seasons, both winter and summer, with good success; but as we were then transferring all our bees from chaff hives, they were not used any longer. I am sure it is a very good idea, especially for chaff hives and outdoor wintering.

Remus, Mich. E. D. Townsend.

SHINGLES ON TOP OF ORDINARY COVER.

On page 551, May 1, Doolittle says that single-walled hives in the sun need a shade-board. I agree with him; but the shade-board I use is a shingled roof. If one uses them one summer and winter, he will never do without them In the first place I nail a 3-inch board on top of my cover in the center, then I nail another piece 1½ inches wide, on each side of the center board, about half way between the center and outside. Before I shingle I nail a board across the end, the same slant as the roof, to keep the snow and the storms from blowing in. After the cover is about finished I nail a board on top of the roof, one on each side, letting it come down low enough to cover up the shingle-nails.

This cover never blows off, always keeps the hive dry, cool in the hot sun, and warm in winter. The shingles should project 1½ inches, and 2 inches over the sides.




Drygoods-boxes at 5 cts. each furnish enough half-inch boards to finish eight or ten hives.

Albion, Pa. John W. Kidder.

[The shingle roof here shown would be very good; but we may here point out that our artist got too many shingles for the size of the hive-cover, which, on top of an eight-frame hive, is 20 ×13⅞. This would call for only one row of shingles on each side, the shingles, of course, to overlap and break joints.

It would be our opinion that this would be a very expensive roof unless shingles are cheaper than in most localities. Material that one can get out of a drygoods-box cover, with cheap roofing-paper, would give just as good results, and be almost as durable.—Ed.]

HOW TO REMOVE SECTIONS FROM SHIPPING-CASES; A SUGGESTION TO RETAILERS.

The proper way to take sections or combs of honey out of cases is to remove part of the back side of the cover and all of the back side of the case, and tip off the sections from the back side, leaving the front or glass side intact, and making a good show. In this way you don't have to pull the sections any, which, if pulled, are often broken and the honey lost, especially if the bottom of the section has the least drainage or is at all stuck to the bottom of the case. By leaving the front or glass side intact it shows up well until the last row is sold, while if the sections are pulled or lifted out of the front or center, many sections are broken, and the case of honey looks ragged and unsightly. I have seen careless grocery boys nearly ruin a case of honey by pulling sections promiscuously from cases, tearing off several tops of sections before releasing one. This suggestion, placed in every case of honey, would instruct grocers and retail dealers to their profit, to the better satisfaction in dealing in honey.

There should always be a glass front to every case of honey, for two reasons: First, to show freight-handlers that it is glass, and fragile; second, to show the honey in the grocery, and yet protect it from dust and vermin.

Albany, N. Y. H. R. Wright.

TWO QUESTIONS.

1. In the December issue, page 1586, Mr. J. E. Hand says, "Until time to put on supers, when she is promptly killed." Does this mean that the young queen will naturally kill the old queen, or that the apiarist will kill the old queen?

2. On page 1582 Mr. J. E Chambers speaks of removing the board, so that "the colony, now grown very powerful, is all together." Does this mean to remove the board without any excluder of any kind between two queens to separate them or not? S. D. Garabedian.

Defender, Cal., June 13.

[1. In this case Mr. Hand evidently means that the apiarist should kill the old queen. If the queens were left, and if they fought, it might not always be the old queen that would be killed.

2. We believe that Mr. Chambers does not leave even an excluder to keep the two queens apart He explained, in a part of his article not published, that when he desires to save both queens he divides the colony later, putting a part of the bees and one queen on a new stand.—Ed.]

SYRUP THAT CRYSTALLIZES SLOWLY.

If labels are put on with thick syrup they will not come off from glass, tin, or other smooth surfaces We often use it to put labels on ointment-boxes in the drugstore.

I have often wondered why I do not see mention made of the way druggists make syrup by percolation. They fill a funnel, can, or barrel nearly full of sugar, then pour water on it, and the finest kind of syrup runs off, which is slow to crystallize at the temperature at which it is made, and, if thinned a little with water, it will stay fluid indefinitely. A. F. Bonney.

Buck Grove, Iowa, March 24.

[Some years ago there was considerable said about syrup made by the percolating process, and many experiments were made; but it was finally decided that syrup made by mixing sugar and water cold, in equal proportions, and stirring well, was just as good as that made by the percolating process.—Ed.]

SELLING HONEY AROUND HOME; A SURPLUS OF QUEENS SAFELY WINTERED WHEN SEPARATED BY QUEEN-EXCLUDING ZINC.

I never need to leave the house to sell the honey that I get from my 38 colonies. People come and get it in pails, churns, kegs, and any thing that will hold it. I keep pure Italian bees of the red-clover strain, and they appear to work red clover as well as white, except when there has been a very wet spell, when I get the bulk of my honey from goldenrod. This honey is very light, almost like that from white clover.

I winter two and three queens in a hive with excluders to keep them separate, and have had no trouble so far; but, of course, I have done this on only a small scale. D. L. ANDERSON.

Flandreau, N. D.

DECIDING WHETHER A VIRGIN QUEEN IS PRESENT BY GIVING YOUNG BROOD TO THE NUCLEUS.

If we should follow the advice given on page 867, July 15, we should lose all our virgin queens. When we give unsealed brood to a nucleus with a virgin queen, in every case the queen is killed and cells are started at once. Our advice is to give nothing but sealed brood to a nucleus with a virgin queen. F. W. DEAN.

New Milford, Pa.

[If you will refer again to page 867 you will see that the giving of unsealed brood was for the purpose of determining whether the nucleus that was supposed to have a virgin was queenless or not.

But the giving of such unsealed brood *might*, in rare cases, be the death of an introduced virgin. But our queen-breeder, Mr. Pritchard, who will rear two thousand queens this season, says he often gives unsealed brood to colonies with virgin queens and has no trouble.—ED.]

MAKING INCREASE ON THE SOMERFORD PLAN; A GOOD SUGGESTION.

Mr. E. D Townsend, in his description of the Somerford plan of making increase, p. 577, tells us to prepare a hive by nailing a lath over the entrance and boring a ⅜-inch hole in the lath, which is stopped with a cork which is removed three days after the swarm is formed.

I find that, by making a small notch on one edge of the lath, and taking a plug of newspaper to stop it up, the bees liberate themselves in about the right time (usually 3½ days) by gnawing away the paper.

Porous *newspaper* should be used, and *not* glazed wrapping-paper, as it takes too long for the bees to gnaw through the latter. By using the paper, increase can be made at outyards, the bees left to free themselves, thus saving one trip.

Georgiana, Fla. L. E. BALDWIN.

MAKING INCREASE LATE IN THE SUMMER; ANTS IN COMB HONEY.

Would it be practicable to make increase now at the end of the white-clover season? I would have made it before, but wanted a full crop of honey. Could I feed sugar syrup and build up for fall crop to advantage? Can you suggest a method of keeping ants, etc., from honey in sections? I have honey which should be taken from the bees, and I wish to keep it awhile. I have shipping-cases, but, of course, these are not ant-proof. F. B. LAMBERT.

Barbersville, W. Va.

[It would be perfectly practicable to make increase by dividing right after the honey-flow; but all nuclei should be given continuous stimulative feeding up till September, or later if the requisite strength is not obtained. Of course, if one has any kind of late summer or fall flow, no feeding during the time will be required. It should be understood that no brood will be reared unless there is a supply of food coming in constantly. To make this increase properly, one should carefully follow some of the well-known methods. The Alexander plan, as given in GLEANINGS, p. 423, 1906, and again in the last edition of the A B C and X Y Z of Bee Culture, p. 279, will be found as good as any. If the shipping-cases can not be made ant-tight, keep the honey in a room that *can* be made tight.—ED.]

AUTOMATIC UNITING; A GOOD SCHEME.

In place of using wire screen, as has sometimes been recommended when following the Alexander plan of building up weak colonies, I simply place a sheet of paper over the queen-excluder and leave three or four perforations uncovered at the front of the hive by tearing a piece out of the edge of the paper. The uniting in this way is done at one manipulation, as we mentioned in *Canadian Bee Journal* for March, 1908; and if I were asked when I remove the paper I would say that the bees will attend to that; for when we have occasion to open these hives again we find the paper is not there. WM. BEUGLAS.

Plattesville, Ont.

[The plan here proposed seems feasible—at least we see no reason why it can not work.—ED.]

HONEY SOURING IN COMBS WHILE IN THE HIVE.

I am troubled by honey souring in the combs in the hives, and can find nothing in the A B C regarding it. The honey gathered is very watery alfalfa honey, and in about a tenth of the hives it begins souring before it is sealed, and sometimes after it is sealed. The souring commences by small air-bubbles forming in the cells; the bees quit work, and the souring spreads all over the hive, even into the brood-chamber. It occurred to me that there might be some acid antidote for it. HENRY PERKINS.

Calexico, Cal., July 31.

[Will some one who knows please answer? There must be something that the bees gather that causes the trouble.—ED.]

COMB HONEY HAULED IN LUMBER WAGON.

Can comb honey be hauled safely on a lumber wagon without springs, provided six or eight cases of honey (about 200 lbs.) are put in each carrier—of course with hay or excelsior under the bottom cases? JOHN H. JOHNSON.

Bangor, Pa.

[We should suppose that the roads would have a great bearing on this question, and also the distance the honey is hauled. We should be glad to hear from any who have had experience.—ED.]

SAGE YIELDS HONEY IN IDAHO.

In answer to Mr. Fr. Holmes, Aug. 1, p. 952, as to whether sage yields honey in Idaho and Utah, I will say my neighbor, Mr. Garfield, experimented with one colony of bees by taking it eight or nine miles away from alfalfa or any other cultivated fields, and setting it among the white sage. He went out to look after it every week, and took fresh water. We do not know the exact amount of honey the bees gathered, but they did fully as well as those left at home near the alfalfa. The honey was of that water-white color peculiar to the California sage honey. Mr Garfield sent samples to California, and it was pronounced A 1 white sage; so we are convinced that the white sage of South Idaho does yield just as much and just as good honey as that of any other State.

Caldwell, Idaho. J. E. Miller.

WHAT TO DO WITH GRANULATED COMB HONEY.

I have granulated comb honey which I wish to feed to the bees for winter. Could I let the bees rob it? or if I took the trouble to melt it over the fire would it again granulate in the hive next winter? M. P. Leggett.

Malvern, Pa.

[We would advise melting the granulated comb honey, thus liquefying the honey and separating it from the wax. If you keep it at a warm temperature for several hours it will not be so likely to granulate during the winter, although some kinds of honey granulate so quickly that it is next to impossible to keep it, even in the hives. Ordinarily, in such a case, we should think it would be better to feed back syrup in the fall rather than to risk using such honey. Your results would then be entirely satisfactory so far as the winter food is concerned, and you would not run the risk that you would if you used this honey which you mention.—Ed.]

HOW TO INTRODUCE A QUEEN IN A LAYING-WORKER COLONY.

I notice on page 948 of the Aug 1st issue that Mr. Edward Lester thinks it strange that his queen was not killed when introduced on two frames of bees taken from another colony. Now, we have introduced many queens into laying-worker colonies by simply taking a comb of brood with adhering bees and the queen from a normal colony, and exchanging it for the comb in the laying-worker colony that contained the most brood, always leaving all the bees on each comb. By so doing I think we usually get the laying workers, or part of them, on the comb we take out. Any way, this plan works eight out of ten times, and, of course, it is easy to put a queen into the dequeened colony.

Longmont, Col. G. C. Matthews.

WHO CAN BEAT IT?

*Friend Root:*—You remember my writing you a year ago last winter about ten swarms of bees I was wintering, that I took from trees that fall as late as November—the last one the day before Thanksgiving. Well, last season was a total failure, and I fed over a ton of sugar to carry my bees through the winter. Of this bunch of ten I pulled all through the winter, but lost two from spring dwindling. I increased the eight to fifteen, and extracted 1500 lbs. of honey from them. One of these was my champion. They gave me a surplus of 425 lbs. of white extracted honey. Who can beat it? My crop this season is 15,000 lbs. Elias Fox.

Hillsboro, Wis.

FEEDING LOAF SUGAR TO BEES IN CELLAR.

I have fed my bees in the cellar cube sugar in this way: I covered the bees with a board having two holes that would allow the neck of a Mason jar to fit in snug. I fill the jar with the cube sugar, not wetting it. I place my fingers over the mouth of the jar and invert, placing my hand over the hole and withdrawing quickly. The moisture from the bees will make it so they can use it. I have tried it and it works well.

Massillon, O. E. A. Newell.

SWARMS WITH VIRGINS LEAVE THE PARENT COLONY QUEENLESS.

Replying to Stray Straws, page 988, in regard to swarms with virgin queens leaving the parent colony queenless, I can give positive information. Previous to the past season we never had a swarm with a virgin queen go off and leave the parent colony queenless. The bees would always go back, although sometimes not until the next day.

We have the following to report: Our bees were very strong last spring, and commenced to swarm on apple-bloom about May 20 to 25. At our out-yards we shook them as we usually do from May 20 to June 10, to see how strong they were. We took the brood and made ten-frame nuclei (about 50 of them), giving (to each) ten frames of brood and one sealed queen-cell. Only a few young bees were left on this brood to keep it from starving.

The results were, that about a third of these made colonies swarmed, and ran away and left the parent nuclei hopelessly queenless, and they had to be requeened later on. We were surprised. We caught some of them at it, and missed the bees from others. We had several queenless colonies in the spring. We filled them up with ten frames of brood, and gave a sealed queen-cell, and they all swarmed and ran away, as I was at each yard only once a week.

It was the greatest honey year in forty years; but our crop is short of last year by quite a lot—say half a crop, all on account of this swarming fever. Some swarms came out, and, without clustering, went for the hills. We never saw the like before, and hope never to again.

New Milford, Pa. F. W. Dean.

I had a colony that swarmed out with a virgin queen, leaving no cells nor any thing whereby the colony might again become "queenright." After leaving the colony a week, to be absolutely sure they were queenless, I gave them a frame of brood, when they started queen-cells and reared another queen. I regard this as a proven fact, that they will, in some cases at least, leave when the parent colony has no means of rearing another queen. Chas. E. Sweet.

Fulton, Mich.

# OUR HOMES

By A. I. Root

Behold, the bridegroom cometh.—MATT. 25:6.
The king's business required haste.—1. SAM. 21:8.

The words of the texts above have been on my mind a good deal the past few days, and they have become very precious to me. Before I finish my talk this morning I hope to make them very precious to you.

Something over a year ago I asked the question here in these pages, "What great event is coming next in the way of invention and discovery?" and a good brother from California, as you may remember, informed us that the next great event that would stir our nation from coast to coast, and, in fact, *all* nations of the earth, would be the coming of the Lord Jesus Christ; and since then I think I have told you that he *has* come, yet most of us knew it not. I presume there are none of you who have not been astonished—and I hope happily so—to note the way in which the temperance work has gone forward in the last few months. It would seem, indeed, as if some mighty power had taken hold of the people—the common every-day people—and that a wave of reform were just before us; for not only the intemperance, gambling, and graft, but *every thing* that is low and bad is meeting such a rebuke on all sides as was never seen before. Let me repeat what appeared in GLEANINGS for March 1, page 298.

A religion that leaves the saloon undisturbed, unattacked, is not worthy to be called after the name of Jesus Christ. Again have we reached a time in the march of Christ down the centuries when, if these should hold their peace, the very stones will immediately cry out. This ethical wave against the saloon has come like a hurricane upon the deck of a pirate ship. There is but one explanation — Jesus Christ is walking across the American continent. Every place where his holy foot is lifted leaves a dry spot; and the meaning is, *the liquor-traffic must and shall be destroyed.* Christ is the source. The saloon must die.—*Clinton N. Howard, before Rochester, N. Y., ministers' meeting, January, 1908.*

Now let me quote from a letter that I received some little time ago:

*Mr. Root:*—On Wednesday, August 19, we are to have a great Anti-saloon League rally at the Lancaster Assembly grounds. Governor J. Frank Hanly, Hon. Seaborn Wright, Bishop Wilson, Governor Harris, and others will be present.

It has seemed best to the Headquarters Committee to call a meeting of the Board of Trustees at that time. While the annual reports and regular annual business of the League will not come up for consideration, vastly more important business will be before us.

The coming county-option elections will present to the League the greatest amount of work and opportunity for victory which we have ever faced. The bitter attack upon Governor Harris by the brewers and the Personal Liberty League, because he recommended the county-option bill, will need to be considered, and the policy of the League in the campaign definitely outlined.

On the 17th and 18th we are going to have a workers' conference on methods for county-option work. If you can come a day or so earlier and join this conference I am sure it will help us, and you will doubtless get some inspiration for the county-option work this fall. W. B. WHEELER, Supt.

Columbus, Ohio, July 11.

Perhaps I should explain to you that Wayne B. Wheeler is superintendent and attorney of the Anti-saloon League of Ohio, and he is, perhaps, one of the most able men that we have at the present day. I felt it to be a great honor to get such an invitation from friend Wheeler; but I mentally thanked God as I read it that I was also honored by being asked to be present at a meeting where the governors of three States were expected to stand up and indorse the Anti-saloon League of America.

Before making any report of the doings at the Lancaster Chautauqua, let me give you a little explanation. This is a Methodist assembly ground, and I think there have been gatherings for some twenty-five years in the same place. It is located on a beautiful hill along the Scioto River, in Fairfield Co., not far from Columbus. There are between four and five hundred pretty little cottages there. These make a miniature town, but it is not laid off into regular streets. The fanciful little cottages are all different from each other—located on paths that run around through the woods—in fact, we might almost call them cow-paths. The Methodist people come there every summer and stay three or four weeks. They bring their carpets, rugs, easy-chairs, and a sufficient equipment for light housekeeping. Every house has a pretty little porch in front, and the people live mostly outdoors in God's open air. On the top of a hill, right in the center of the village, is a beautiful auditorium large enough to seat five thousand people comfortably. Great speakers are secured—many of them, perhaps, as good as the world can furnish, and this large auditorium is generally filled. As electric cars run every half-hour from both Columbus and Lancaster, it is an easy matter for the people to reach this great educational gathering. Besides the main auditorium there are two smaller ones for committee meetings or any thing else that may be needed at a time when the large room is occupied. Just before the work of our conference, the "Temple," as this auditorium is called, was occupied by a gathering of school-teachers. There is always something going on day time and evening on this assembly ground. There are a great many nice people there—men, women, and children; and during my stay there of two days looking around among the people right and left, I not only never caught sight of a cigar, cigarette, pipe, nor any thing in the shape of tobacco, but did not hear any thing approaching an oath, nor even an unkind or uncivil word. If there were differences or misunderstandings at any of the meetings or anywhere else, the people had grace enough and Christianity enough to keep them out of sight. In fact, my stay at that Methodist Chautauqua induced me to go home and hunt up the following passage from the book of Revelation:

And there shall in no wise enter into it any thing that defileth, neither whatsoever worketh abomination, or maketh a lie.

Before I go further I want to say a word about open-air meetings. This great auditorium has broad shutters or doors so arranged that they can be put down in stormy weather, but ordinarily they are raised, so that the meetings are practically in the open air. You know there is much said just now about *sleeping* in the open air. Well, I think we need to apply the same kind of reasoning to our meetings—especially our religious assemblies. It used to be almost proverbial that the tired farmer and sometimes even the old deacons would go to sleep regularly (?) in meeting. Mrs. Root has often asked the question why she should be unable to sleep nights, when she *ought* to sleep, and yet have a desire to sleep promptly the next day right in the midst of an interesting sermon. But it just begins to dawn on me that

the poor woman (God bless her) and the tired old farmer and the aged deacon went to sleep just because *of a lack of ventilation.* Opening the windows just a little is not enough to accommodate a great lot of people. If, like Terry, we could take the windows out entirely, during church time, in summer, that would be better; but it does not *begin* to compare with having all the walls of the building so that they can be thrown out so as to make a porch, keeping out the sun in hot weather, and letting the air circulate freely. I repeatedly looked over that audience of five thousand people at that gathering, without finding any one who even *looked* sleepy. The great speakers may have had *something* to do with it; but I think God's free open air had still more to do with it.

There were something like 150 to 200 representatives of the Anti-saloon League from the different counties of this State. They were mostly ministers of the gospel—*God-fearing* ministers who did not hesitate to stand up bravely and squarely for the abolishment of the saloon.*

While we were holding a committee meeting—in fact, while somebody was speaking—a bright little woman came in from the outside. She came in so quietly, walking on the sawdust floor, that nobody, not even the chairman or the speaker, seemed to notice her. She walked up with a pleasant smile on her face, and this smile was rendered more attractive, it may be, because of the slightly heightened color on her face. I began wondering what she wanted, and looked toward the chairman as he rose. Finally she said in a quiet voice, "May I be excused for having the 'cheek' to presume to interrupt your meeting for just a moment in this unusual way?"

Of course, the speaker stopped and the chairman smilingly gave her permission to speak.

"Well, friends, Governor Harris is coming, as you know, this afternoon, and we want each one in the Boys' Brigade to carry a little flag. We have no flags, and we must get the order off on the next car if we get them here in time. We want a little money, and the women told me if I would have the courage to come down and interrupt your meeting I could get it without question."

"How much money would you like?"

"I think two dollars would do."

In a twinkling a hat was passed around, and the money was poured out on a bench; and while she was counting it the speaker resumed. She rose to thank us, and as she did so I noticed a sort of roguish smile on her face, especially when she informed us that she had something over *six dollars.* I began thinking that she did not need that amount to get a few little flags for the Boys' Brigade, and thought that perhaps the proper thing to do would be to give back a part of it; but as soon as the criticism came into my mind something (was it not the Holy Spirit?) suggested the incident about Judas complaining because the woman wasted a box of precious ointment. Dear friends, I have all my life been somewhat backward about encouraging display, or, if you choose, in using so much money for political or other campaigns. Perhaps I have been making a mistake. It surely is right and proper that we should go to considerable pains to give reverance and welcome to the chosen Governor of our State of Onio. We should honor his position, even if it should happen to be true that we could not also honor the man. But may the Lord be praised that at *this* time we have a Governor who is a rugged, honest old farmer, a veteran soldier of war time, and, more than that, a Christian man who dares to come out in the open and indorse and back up the Anti-saloon League of Ohio. I will not repeat here the speech he gave us, for most of you have probably seen it in the papers. But I happened to be near when the Governor got off the train; and not only did each one in the Boys' Brigade have a little flag, but a like number of little girls dressed in white also had flags, and back of them were some larger girls with flags. By the way, it may not be out of place here to say that I not only love little boys of the State of Ohio, but I love the little *girls* too, and I do not know but I might almost say, as somebody else has said, that, the bigger they get, the more we love them. Yes, I am going further than he did. After the little girls with the flags, and the bigger ones, came the grown-up mothers, also dressed in white, and each one had a little flag, and then came the old grandmothers, perhaps a hundred of them, and *they* had flags; and they were not only dressed in white, but they had *white hair*, and I felt glad *and happy* to find that, away down in my heart, I loved and *admired* the white-haired old ladies more than I did *any* of the rest. May God bless the mothers and grandmothers of our land.

Now, friends, that bright little woman with that pleasant smile on her face (enhanced by the slight color because of the nature of her undertaking) was right. She was doing God's work. She was right in line with the second one of our texts where it says "the king's business required haste." We were all glad to see her come, and we were perfectly willing to be interrupted. I think I omitted to state that she announced at first she was a W. C. T. U. woman, and *such* a woman can never interrupt or hinder the *Anti-saloon League.* They have been our greatest aid and our greatest help. In fact, the Anti-saloon League would perhaps never have existed had not the W. C. T. U. "started the ball rolling."

Let me tell you something else that rejoiced my heart. When the so-called Personal Liberty League holds its meetings the members of it desire secrecy, for all liquor people keep closed doors. They do not want any spies to get in. But it is not so with temperance workers. We can say as Jesus did, "In secret have I done nothing." Our deliberations are all wide open. The W. C. T. U. women or anybody else on the face of the earth can come right in. We should be glad to have even the *saloon-keepers* with us to listen to our reasoning. Some speaker at one of the committee meetings said something like this: "If you turn a strong searchlight down into a rat-hole, that hole is *spoiled* for rat purposes." The rats can not bear the strong light.

* When Senator Rose, the author of the county local-option bill, was introduced to that great audience, the applause was almost deafening. They could not make any noise by stamping with their feet on the sawdust floor, and so they clapped their hands, and shouted until they were tired. Then somebody started the waving of handkerchiefs and the outstretched hands of fully 5000 people made a flutter such as I for one never saw before. Senator Rose is not only a great reformer, but he is a great orator.

"Men love darkness rather than light because their deeds are evil" *Our* deeds are not evil. They are right, in the sight of God; and the more light there is thrown on them the better it suits us. The enemy has just been saying that the Anti-saloon League people dare not tell how much money they have received nor what they did with it. That is a vile falsehood. Our receipts and expenditures have been fully given, in print, in black and white, ever since the League was started. It may be true that the names of the donors have not always been given to people who have no right to them, for the saloon sympathizers might boycott these donors or do them harm, and every one has a right to have his name kept out of print if he so desires.

Bishop Luther B. Wilson, President of the American Anti-saloon League, is a great orator. His subject was "The American Flag, and the American Saloon." He put in a tremendous protest against having the American flag float over our saloons and breweries exactly as it does over our schoolhouses. The first time I visited the city of Indianapolis I inquired what massive brick building it was that overtopped every thing else in the city. I was told it was a *brewery;* and floating over this brewery was perhaps the finest and largest American flag I ever saw. If I remember correctly, the flagstaff was held up by a huge statue of Gambrinus. I hope and pray that Governor Frank Hanly will have that flag hauled down before he ceases to be Governor of Indiana. May be he has had it pulled down already. Bishop Wilson said he was one day waiting for a street-car in one of the large cities of the East. A man whose business it was to take care of a little station was sweeping up around his post. The bishop noticed that the man had an American flag tacked up on his little booth. Then he began asking some questions something as follows:

"My friend, why do you love this American flag more than you do that of your own nation where you came from?"

The man replied something like this:

"I love the American flag more than any other flag in the world because it means a square deal to every citizen, no matter whether he is rich or poor, white or black, educated or uneducated. My girl here in America goes to school. She has just the same chance and the same care as the girls of the millionaires. She goes to the library and gets books, and the librarian takes just as much pains to find what she wants as if she were rich or educated, or held some high position. If they do not have the book she wants, the librarian tries just as hard to get it for her as he would for any one else. That is why I love America, and why I love the flag that has stars and stripes on it. It means a square deal to all this country's people."

I will take space to relate two incidents in the bishop's talk. He remarked that, in the natural order of things, crime is of gradual growth. The criminal usually goes along step by step; but by the aid of whisky and the American saloon, criminals are sometimes made in an hour. An incident that most of you doubtless read in the papers some two years ago was related, with some sidelights that the papers did not contain. A young man of good family and pretty good habits married a nice young girl, I think in New Jersey. It is true he had been with some questionable companions; but his friends hoped that, after his marriage he would turn over a new leaf —and he did, at least for a time. He had been sowing some wild oats, but not very many. Not long after his marriage some visitors came to see them, and the young wife asked him to go down town and get some needed things for dinner. Before he made his purchases, however, a couple of his old boon companions said to him, "John, we were just wanting you. Come in and have a drink."

John replied, "You will have to excuse me today, boys. Some company has come, and I must hurry back with the things my wife wants for dinner."

Please note he did not tell his old friends that, since his marriage, he had not used any drink, or, better still, that he had joined the Anti-saloon League, and was on a different track. He only asked them to excuse him that day. I wonder if some boy or man will not make a mark right here and learn a lesson from this. But these old chums were not to be so easily put off. One of them said, "Well, John, you will certainly come and have a cigar? You can smoke that while buying your stuff;" and as there was no good reason (as it looked to him) why he should not have a cigar he went along with them. We shall have to draw the curtain now for the time being, for the saloon has screens over its doors and windows. It would be like the searchlight and its effect on rat-holes if people could see inside. Let me digress enough to tell you there was a very pretty girl in that neighborhood who had a widowed mother. John, before his marriage, had been on rather intimate terms with this girl—at least she was well acquainted with him and trusted him. These two fellows who invited John to drink had got an eye on her. They knew she would not speak to them nor have any thing to do with them; but if they could make a catspaw of John they thought they could get hold of the girl. The next morning the whole city of Paterson was startled by the information that this beautiful young girl was found on the banks of a river, among the stones and bushes, *dead.* She had no father nor big brothers to protect her, and these two devils in human form had planned to get John drunk, and then persuade him to get that girl into their hands. The long trial that ensued showed that John had been seen to invite the girl to go into some place and have a glass of lemonade that afternoon. Of course, it made a stir in the papers, and we all felt glad when those three men were sent to the penitentiary for a long term. Not very long ago, however, my blood was made to boil by seeing a notice in the papers to the effect that a petition was being circulated to get those fellows out of the penitentiary. The excuse was that they did not *intend* to *kill* the girl. It was only an unfortunate accident. Now, that may be true—that they did not *deliberately* plan to take the girl's life. That could have been no object. But I want to ask you all, *in Heaven's name*, how much *better* was it than *death* that they did plan to do? Now, friends, it is not at all unlikely that the stars and stripes are just now floating over the saloon that furnished the liquor—yes, the *drugged* liquor—that took the life of that

girl Is it not high time that our flag that floats proudly over our schoolhouses and other places of learning should be hauled down and kept down when seen floating over dens of infamy like the American saloon?

Governor Frank Hanly is one of the greatest speakers, and one of the most fearless speakers, in my opinion, that the world contains; and if there should ever be a chance to vote for him as President of the United States, I would vote for him and work for him as I never worked for any other candidate or anybody else in my life. I hope the papers will give a report of his wonderful talk on that occasion.

I will close with one more incident from Bishop Wilson. It seems he has recently been sent to Porto Rico. When nearly back to New York the officers of the vessel blundered in their reckoning. The bishop did not tell us the crew had been drinking, but I can not understand what else should cause the pilot and officers of a great vessel to lose their reckoning. The bishop heard the breakers, indicating that they were nearing danger, and informed the officers of it. They laughed to think that a landsman should presume to tell them where they were. While he was insisting that he was right, and that they were off the track, the vessel struck the ground. They signaled a life-saving station near by, and got all the machinery they could muster to get the vessel off. By wireless telegraphy they finally got a powerful tug, with a tremendous rope, from the city of New York; but for quite a time all their efforts were unavailing. When a great ship, from stupid management, runs at full speed into a sandbar it is not an easy matter to get it off. After the steam-tug and all the appliances for such work had exhausted every resource without avail, they were quietly told by some one to keep on and not give up yet, for the *tide was rising*. And the tide kept on rising, and soon they got off. Do you see the point, friends? The Anti-saloon League has been working for some fifteen years trying to wake the people up, and trying to get our good and righteous laws enforced—Sunday-closing laws, for instance. But the great vessel of state was too strongly foundered on the sandbanks. The enemy was almost too much for us, and at least *some* of us were almost ready to give up; but for the sake of the mothers and little children we kept on. Meanwhile the tide of public indignation was rising, and we did not know it. When the good brother away off in California told us that the Lord Jesus Christ was coming to shake the earth we did not believe it.* One of the first indications we had of his "footsteps" was away down in Georgia; and then other southern friends fell into line and declared that the saloon must go. We who were pulling on the rope did not know any thing about the great agency that was *bound to envelop and engulf and sweep the whole earth*. We were surprised when the news came about the *unexpected* help. Of course, the enemy is making resistance. The brewers are massing their millions. The riots in Springfield and Chicago, Ill., are waking the people up as they never were awakened before.

The W. C. T. U., the Anti-saloon League, the Prohibition party, and all the other temperance agencies and leagues and organizations, have been working and praying, and perhaps wondering, many of us, why our prayers were not answered. We were like the big cable and the steam-tug, together with the people at the life-saving station, and just when the job seemed too much for us, a new and unexpected agency—a great tidal wave, in fact—started up, unbeknown to us, and the enemies of righteousness were as much astonished as we were to find the work done before we knew it.

The churches of our land are massing together; and there are some indications that the political parties are going in a like manner to mass together. The farmers, and their wives and mothers who have stayed at home and attended to their own business, are waking up and massing together, and a mighty tide that bids fair to sweep the whole world is chained to this one thing—*the saloon must go*. SATAN IS BEING DRIVEN OUT, AND THE LORD JESUS CHRIST IS COMING IN. "BEHOLD, THE BRIDEGROOM COMETH."

* As an indication of what is going on right here in Ohio, see the following, just received from Wayne B. Wheeler:

*Mr. Root:*—Tell your people that between forty and fifty counties are already organized to vote the county dry. In some counties, like Meigs, over one hundred public meetings have been held. Scioto Co. has had the campaign on for over six weeks, and has held between one hundred and two hundred meetings. Every thing is redhot in that county.

Columbus, O., Aug. 21. W. B. WHEELER, Supt.

# HIGH-PRESSURE GARDENING

By A. I. ROOT

I notice in GLEANINGS, page 1084, an account of a new variety of wheat, also statement of seven-headed wheat, or Egyptian wheat. In 1856 I was farming on Trinity River, 15 miles from Weaverville, the county-seat of Trinity County. My brother was in Salt Lake City, and sent me by mail a small package of seven-headed wheat which I planted and got several quarts of wheat, which I planted the next year and got at the rate of 80 bushels to the acre. I took some of it to the mill and got it ground to flour. It would make sticky dough like hulled barley, but would not make bread that could be eaten. I could not sell the flour or wheat as people were afraid to feed it to their horses, so I quit raising it. Some of it had the seven heads all right. I wish I had it now for chicken feed. Encourage this 277-bushel humbug, as it may grow 80 bushels per acre for chicken feed, and be profitable for that alone. O. S. LOOMIS.

Fountain, Col., Sept. 4.

Many thanks, friend L.; but please remember that you can get a much larger yield per acre from a little piece of ground than you can where you prepare and sow a whole acre. Perhaps it is not easy to explain why this is so; but our experiment stations will tell you that small plots, as a rule, give a much greater yield than where you sow an acre or several acres, even with the best care that you can give the larger plot. If it is good for chick feed, by all means let us have it. Who can tell us where to get the seed?

### SWEET CLOVER—HOW LATE IN THE FALL CAN THE SEED BE SOWN AND STILL WINTER OVER?

We are desirous of planting sweet clover for bee pasturage. Our land is in Mount Lebanon, Columbia Co., N. Y. The land is high and our winters rigorous. We are uncertain as to the best time to plant—this fall or wait until spring. If planted soon, would the clover gain growth enough to live through the winter? If so, would it blossom next summer? Your answer would greatly oblige two bee sisters who have had wonderful success in their three years of bee culture. Our knowledge has

been gained from the A B C book and GLEANINGS, which latter always comes to the rescue in every emergency. A healthier and more beautiful apiary could not be desired. Thanks to all our bee friends who so generously give their experiments and experience from which we profit. Any suggestion will be most graciously received. ALICE S. CRANE.

Mt. Lebanon, N. Y., Aug. 15.

My impression is that if the seed is worked well into the ground, and there is plenty of rain, the seed, if sown any time during September, will probably make root enough to stand the winter. The roots of sweet clover go away down into the ground, as most of you will admit who have tried to pull up the plant, and especially on hard dry ground; and it takes an unusual amount of freezing to throw it out. Now, I wish the others who have had experience in this line would tell us about how late the seed can be put in and still winter over. I will sow some seed at different times and report.

MIRACLE WHEAT; THE SATURDAY EVENING POST SENDS A MAN TO INTERVIEW ABRAHAM ADAMS.

We are glad to know that the *Saturday Evening Post* has had enterprise enough to get down to the real facts in the matter. We clip the following from their issue for Sept. 12:

*The Saturday Evening Post* dispatched a thoroughly reliable man to Idaho to examine the wheat on the ground, and his wired report, which follows, pretty thoroughly disposes of this agricultural marvel:

"Assertions of huge crops or good flour-making qualities not justified. Adams' only claim of proportion of two hundred bushels an acre is with an eighth-of-an-acre patch two years ago. For last year, admits farm average only thirty bushels. So far this year only twenty-five to thirty-five an acre. Offers excuses such as weeds and undersowing. Not true that wheat has been successfully grown elsewhere. Misleading to say frost-proof, for admits some injury by snow. Flour-making qualities unknown. Adams was given experiment-station analysis last year, and told with it that milling test was necessary to show the quality with certainty. Has not had the test. The wheat in appearance is much like certain large coarse wheats; not valuable for flour."

The *Indiana Farmer* suggests that this person should be punished under the United States postal laws for using the mails for fraudulent purposes. We heartily second the suggestion. The Department of Agriculture sent a special agent to Idaho, and here is his report:

Alaska yielding twenty-five bushels an acre. Badly mixed. Grain inferior. Quality soft and white. Ordinary wheat yielding fully as much. Best varieties, more.

THOMAS W. LAWSON.

When this man first came out with his *expose* I commenced to read carefully every word of his writings. I continued until I was satisfied the man was but little if any better than the *other* men he claimed to be exposing; and just recently I have been reading his paid-for advertising in the daily papers. Now, I hope it is not true that money has been pouring into his coffers at the rate he tells us it has. Farmers, gardeners, and fruit-growers generally are prospering; and I am glad to know that some of them have a little money ahead, and perhaps most of them have. But God forbid that their hard earnings should ever go to support and encourage men of the Thomas W. Lawson type. Just now I am rejoicing to see such a grand home paper as the *Ohio Farmer* come out boldly as they do in the following:

This man is again spending thousands of dollars, advertising in papers all over the land. Now he booms or bulls a certain stock or line of stocks, advises all his "customers" to send him their checks and orders for "margin investment," and the mails and telegraph offices (he declares) are choked with buying orders. Of course, the stock rises for a time, and he reaps his percentages. Or, now, he "bears" the market—advertises that certain stocks are sure to fall, and selling orders crowd the mails and the stocks fall and he gets his percentages on all the sales. Let him and similar men alone. Speculating on margins of grain or railway or other stocks is one of the most dangerous, delusive, and harmful kinds of gambling, and the "lambs" usually "get shorn." Gambling is exactly what it is. Let us call a spade a spade. It is the business of the farmer to *grow* wheat, corn, and oats—not to *gamble on them*, and he is foolish, not to say morally wrong, wherever he "bets on the other fellow's game."

# HEALTH NOTES

SHREDDED-WHEAT BISCUIT.

*Mr. A. I. Root:*—I have been reading what you say about the use of shredded-wheat biscuit. I had a severe fit of sickness last spring, which lasted about six weeks. Since then I have used largely of the biscuit as an article of diet. My practice is to soften the biscuit well with hot water, then flatten it and cover with butter, then pour on a liberal quantity of best extracted granulated honey, and eat with a spoon. I have made a larger use of eggs than ever before, but use no meat. I am now 77, and have taken care of 100 colonies of bees this season. I have used no tea nor coffee for years. EDWARD BEVINS.

Leon, Ia., Sept. 6.

Here is a newspaper clipping sent me by a friend. I do not know what paper it came from.

SECRET OF LONGEVITY.

Wu Ting-fang, the famous Chinese diplomat, recently said he had discovered the secret of longevity, and averred that by his system of diet he could live 200 years—a term greatly exceeding the longest possible period as fixed by Prof. Metchnikoff, of the Paris Pasteur Institute. Naturally the Chinese minister's statement excited much curiosity, and a Boston man wrote to him for particulars, receiving the following plan as adopted and put in practice:

"In answer to your letter requesting my plan of diet I have to say: 1. I have given up my breakfast, taking two meals a day, lunch and dinner. 2. Abstain from all flesh food. My diet is rice, or, when I go out to dinner, whole-wheat bread, fresh vegetables, nuts, and fruit. 3. I avoid all coffee, cocoa, tea, liquors, condiments, and all rich foods. 4. I have given up salt also, because it is found that salt makes the bones stiff. 5. I masticate every mouthful thoroughly before it is swallowed. 6. I do not drink at meals, but between meals or one hour after meals. 7. I practice deep breathing. 8. I take moderate exercise."

Minister Wu Ting-fang's fifth rule aligns him with the followers of Fletcherism, though in other particulars he is a law to himself. Mr. Fletcher eats only when he is hungry, and does not eat meat, though not making this a rule for others.

The plan of the Chinese minister will commend itself to many practical experimenters in dietetics. It is sensible, and combines exercise and deep breathing with frugality—a wholesome scheme of living.

You will notice from the above that Wu Ting-fang agrees exactly with T. B. Terry in No. 1 in recommending two meals a day, and I think he agrees with Terry also in No. 2 in abstaining from all flesh foods. In No. 3 he agrees with Terry and A. I. Root also. No. 4 I do not know about. When I am eating green corn I want butter and salt both, and quite a little salt, and I want milk to drink with it. It may be that one can get along without salt, and that salt *does* make the bones stiff. I shall have to say I do not know, for I never tried living without salt. No. 5, in regard to *thorough mastication*, we all agree on. No. 6 also. I drink only milk, and only about half a teacupful at that. If I drink more than that three times a day, nature, sooner or later, makes a protest. With Nos. 7 and 8 we are all entirely at an agreement. The concluding suggestion, about eating only when you are hungry, might do for *some* people, but I, for one, want to sit down with a lot of other people and have somebody give thanks, and then talk and laugh and feel happy while I chew my food, and try to make everybody else feel happy.

In regard to abstaining from flesh food, after I tried entire lean meat, as I told you, and after having been at another time of my life *four years* a vegetarian, except that I had eggs and milk, I shall have to say I am undecided. In warm weather, when I can have what I want, as I do at home, I think I would give up meat (I am sure I feel better without it, and it might help to break up the "meat trust"); but while I am traveling, especially during very warm weather, or at other times, when I get what is commonly called "summer complaint," I must reserve the privilege of a pure lean-meat diet until I begin to straighten out. *I do not know of any other way.* Last, but not least, especially when I feel out of sorts, I would go to almost any expense or trouble to get *pure soft water.* Rain water that has been boiled has so far always proved to be all right on that score for me.

# POULTRY DEPARTMENT

### THE SECRET OF RAISING CHICKENS IN AUGUST.

I want to say something about my discovery—at least I never heard or read of it in any of the poultry-journals. I think it might be worth $5.00 to many of you. But I am not going to charge $1.00 for it, nor even 50 cents. Here it is, free to all. Get a sitting hen if you can in August, and let her raise a brood of chicks while she is moulting. Moulting hens rarely lay any eggs, so there will be no time lost, and you actually kill two birds with one stone by letting her run with the chickens while she is on a moult. Mrs. Root insisted that it was too *late* to raise chickens. But I set one hen with 17 eggs about the first of August. She hatched 14 chickens, and has 14 now, this 11th day of September. I never saw chickens grow faster or seem happier, and they will certainly be well feathered out when cold weather comes. The hen commenced dropping her feathers when the chicks were about a week old, and now she is fairly feathered out. By the time the chickens are ready to winter, she will be in good condition to lay again. And, by the way, I have got a nestful of small pullets' eggs, laid by the Brown Leghorn "day-old chicks" the 14th day of April. You see they commenced laying before they were five months old, and so they are already paying for their food. Is not this getting your money back in pretty good time? While the old hens are in moult, the pullets are supplying us with eggs.

### THE DAY-OLD CHICKS, AND HOW THEY TURNED OUT.

On page 586, May 1, I mentioned the fact that I took home 25 chicks in a little box. They were hatched April 14. There were 15 Brown Leghorns, 4 Buff Orpingtons, and 6 White Plymouth Rocks. As I had no brooder, and the weather was too cold to put them outdoors, I put them up by the steam-pipes in the greenhouse. Well, the Brown Leghorns *all* lived; but I lost 2 of the Buff Orpingtons and 5 of the White Rocks. It rather looked from this that the Brown Leghorns were a hardier breed, and I feel satisfied from this experiment (and some others seem to think so too) that I need not have lost any of them, had I kept them away from the artificial heat. The Brown Leghorns, when 4½ months old, commenced laying. As every one of them seems to be a true type of the Brown Leghorns, I think Mr. Uhl furnishes very choice stock. The two remaining Buff Orpingtons are both pullets. They are large and beautiful fowls, without a wrong feather—that is, so far as I can discover, and I think they will lay soon. The single White Rock was a male; and when 70 days old—that is, exactly 10 weeks—he weighed an even 3 lbs., and at the age of 4 months he weighed 6¼ lbs. One reason why I weighed him was that friend Philo, in his advertisement in GLEANINGS, said his Orpingtons, bred in confinement, weighed 2 lbs. when 8 weeks old. There has been some criticism in regard to what was called his extravagant advertising; but in view of what I have just said, I do not think it at all extravagant. Chickens when properly hatched, and have plenty of food, without being scrimped a day of their lives, will give no trouble in making such a record as the Orpingtons and Rocks, and may weigh fully as much as he claims. You see, in buying baby chicks you escape all the trouble incident to an incubator, and get *choice stock* for a small sum of money.

The Brown Leghorn chicks cost 8 cts. each, and the Buff Orpingtons and White Plymouth Rocks, 10 cts. each. I sold the big white cockerel, when 4½ months old, for $1.00,* and one of the Orpingtons for $1.50. From some experiments I made in Florida, where grain is much higher than it is here, I decided that a nickel would pay for the feed of a chicken until it is ten weeks old; and 10 cents more would pay for the feed until it is four months old. Now, if this is true, what better business do you want than raising chickens—that is, if you have no more losses than I have had, and start with some choice breeds?

### THE "CHICKEN BIBLE;" SEE PAGE 1025; ALSO SOMETHING IN REGARD TO GOOD BOOKS FOR FARMERS, NOT ESPECIALLY DEVOTED TO POULTRY.

*Mr. Root:*—In your Aug. 15th issue you pass on Mr. Cogswell's inquiry for a "chicken bible." There is no chicken book exactly like the A B C of Bee Culture, but possibly the two most practical poultry writers of modern date are Robinson, of Boston, and Brown, of England. "Poultry Craft," by J. H. Robinson, editor of *Farm Poultry*, of Boston, is certainly the safest, most up-to-date, and most complete outline of the chicken business to be had, using "complete" in the sense of general all-around outline, the book not being large, having only 272 pages. For a more exhaustive treatment of the subject, Robinson's first and second series of Lessons in Poultry-keeping are probably unsurpassed, and his Common Sense Poultry Doctor, published in 1907, is the best book for general use on that subject. Any person much interested in chickens should have Robinson's books and his monthly paper, *Farm Poultry*, as well as the *Reliable Poultry Journal* and the Cypher's series of poultry-books which you list.

While writing on this subject I should like to call your attention to Fred Grundy's (Morrisonville, Ill.) so-called "Perfected System." It is true it is one of these pamphlet poultry systems, but is one of the most practical I have seen; and his "fireless brooder" is much better, in my opinion, than Philo's, whose book I also have (as well as numerous other poultry publications). For a beginner, Grundy's pamphlet is excellent, except his water-tank, which can not be cleaned properly, the two-part tank being better.

There is another book, or pamphlet, of 56 pages, to which I

* After I told the man he might have him for a dollar, we found he weighed 7½ *lbs.* With the free range he had all his life, I don't think his feed cost more than 15 cts., and large spring chickens are quoted in the market at *15 cents per lb.*

have long intended to call your attention. I have never seen it advertised in any paper, and found it only through an incidental allusion in a *Farm Poultry* editorial. It is F. O. Wellcome's "The Trap Nest Text Book," Yarmouth, Maine. Presumably the author does not care to sell his pamphlet except with his nest patent, but he will sell it separate on request, and I advise every poultryman interested in breeding for eggs to get a copy of the very excellent little book, whether he uses any trap nests or not.

While recommending chicken-books I should like to mention two others of general nature. The first is the equivalent of your A B C book. It is the "Farmers' Cyclopedia of Agriculture," by the United States Department of Agriculture officials, Wilcox and Smith (Orange Judd Co.). Prof. Bailey has a large cyclopedia, excellent for libraries, but too expensive for most farmers. But the Wilcox and Smith book, 619 pages, ought to be in every farmer's home, being so up to date and sufficiently complete.

The second general book or books I wish to recommend are the three "Practical Farm Experience" books written by farmers, summarized by Prof. W. F. Massey, and published by the *Practical Farmer*, of Philadelphia, one of your advertisers. Any farmer who has not these books is missing a treat, and will be glad, after reading them, to have had his attention called to them. And I must also highly commend Prof Holden's A B C of Corn Culture (Simmons Pub. Co., Springfield, Ohio), which you recommended a while back. For its price, 10 cents, it is about indispensable to every corn-grower. It ought to be in the library of every farmer and of every district school.

I have no connection with nor personal interest in any of the books mentioned in the foregoing. I merely like to pass a good thing along. GENESIS FARM.

Greencastle, Ind., Aug. 26, 1908.

I am sure we are very much obliged indeed for the above from one who has no interest in any of the books or periodicals mentioned. Friend Grundy's little book, "Perfected System," is certainly a valuable little work, and I would have given it a good editorial notice before this time were it not such a very small book for the price. I believe it was originally sold at $1.00, but the price has been reduced to 50 cents. Perhaps we ought to be satisfied with this latter price, but it still seems to me that a fifty-cent book, especially of such small size, should have better print, better paper, and better engravings. I know there are a good many people who do not agree with me in regard to this matter, and may be I am wrong about it. The trap-nest book, if I remember correctly, is also 50 cents, and I would find the same fault with it that I do with the Grundy book, and something else besides, because the book from beginning to end is an advertisement of his patent-right trap-nest. At the same time, the trap-nest is a good thing—the best one I have ever gotten hold of; and the trap-nest book tells us more about egg-laying, and how to tell absolutely which hens lay eggs, than any other book or lots of books I have ever gotten hold of; and I can heartily indorse all that is said about the A B C of Corn Culture. This book is as large as some of the fifty-cent books, and the price, 10 cts., is ridiculously low. If every corn-grower would get a copy and read it, it would put hundreds of dollars' profit in the pockets of thousands of people. By the way, we are cutting our ten acres of corn to-day, Sept. 14; and I believe the general verdict is that it is one of the nicest pieces of corn in this part of Ohio.


**Don't Buy a Stove or Range Until You First See**

**How Much You Save By Getting**

**"A Kalamazoo Direct to You"**

TRADE MARK REGISTERED

YOU want to make every cent you spend this year, **count for quality and economy.**

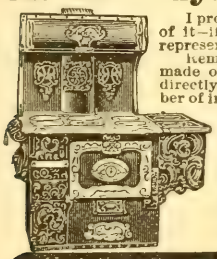
If you need a stove or range, don't buy until you get our **factory** prices.

I promise you that I will save you $5, $6 or $10 on our smallest stoves, and as high as $18, $20 and even $30 on our largest. And I promise you that you cannot get **anywhere** at **any** price, a better stove or range than the Kalamazoo.

Just let me quote you prices. Take our catalogue and **compare** the Kalamazoo **quality** and **prices,** with the best line of stoves and ranges you can find sold at retail. **That** will tell the story. You can see for yourself. You want to save money and you want to get high quality. Why not investigate our plan, then? Why not let me show you the difference between manufacturers' prices and retail prices on stoves or ranges?

We sell to you, direct from the factory, at actual factory prices,

**On 360 Days Approval Test—We Pay the Freight**



I promise, in black and white, to refund your money—every cent of it—if you do not find your purchase in every way exactly as represented.

Remember, every Kalamazoo is of the highest possible grade, made of the best materials and in the best manner. You deal directly with the manufacturers—a company that has a larger number of individual customers than any other stove company in existence. We have sold thousands of stoves and ranges to readers of this journal, and no doubt can refer you to near neighbors who have saved money by buying a Kalamazoo. Many customers write that they have saved enough on a single Kalamazoo to pay for a whole season's fuel. You can save enough to buy a new suit, a new dress, an article of furniture, or perhaps to pay your taxes. Is it not to **your** interest to get our prices?

**Send Postal for Catalogue No. 416**

**All Kalamazoo** cook stoves and ranges have patent thermometers which make baking and roasting easy.

describing more than 300 sizes and styles of Coal and Wood Ranges, Coal and Wood Heaters, Hotel Ranges, Base Burners, Laundry Stoves, Etc.

**I know** that if you get our prices—and see our quality you will not even **think** of buying any other make. Let me show you how much you can save.

**William Thompson, Vice-Pres. & Gen. Mgr.**
**KALAMAZOO STOVE CO., Mfrs. Kalamazoo, Mich.**

# FIX YOUR ROOF

**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

**Roof-Fix** The Perfect Roof Preserver, makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our **free roofing book** tells all about it. Write for it today.

**The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.**

Makes and burns its own gas and produces a pure white, steady, safe, 100 candle power light. No wick, smoke, dirt, grease or odor.

**THE "BEST" LIGHT**

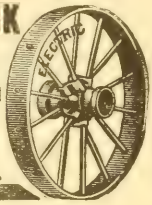
Lighted instantly. Over 200 styles. Agents wanted. Write for catalog

**THE BEST LIGHT CO.**
306 E. 5th St., Canton, O.

# SAVE YOUR BACK

Save time, horses, work and money by using an

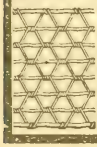
**Electric Handy Wagon**




Low wheels, broad tires. No living man can build a better. Book on "Wheel Sense" free.

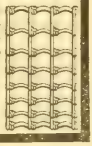
**Electric Wheel Co. Box 95, Quincy, Ill.**

# COIL SPRING FENCE



Made of high carbon Steel Wire Horse-high, Bull-strong, Chicken-tight. **Sold direct to the Farmer at lowest manufacturers prices on 30 Days Free Trial,** freight prepaid. 100 page Catalogue and price-list free.

**KITSELMAN BROS.,**
Box 21 MUNCIE, IND.



# The Rochester Radiator will

SAVE HALF YOUR FUEL or give you double the amount of heat from the same fuel, if you will give it a trial, or we will refund the money paid for it. Write for Booklet on heating homes.

**ROCHESTER RADIATOR CO.**
50 Furnace St., Rochester, N.Y.

Prices from $2 to $12

For hard or Soft Coal wood or gas

Fits any Stove or Furnace

**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLD'G. CLEVELAND, OHIO.**

# Read His Letter

**Read of the economy and profit in this farmer's potato-digging,—how he gets every potato in the field,—how he avoids loss from scarred and crushed potatoes,—how he has made the work easy and fast.**

## It Tells You

how the

# Acme Hand Digger

**ATTACHMENT**

proved out under hard, practical actual field use:

Potato Implement Co., Traverse City, Mich.

Gentlemen:—Two years ago I bought one of your Acme Hand Potato Diggers and after giving it a short trial in the field, my sons, who were digging the potatoes, were so pleased with the Acme Digger that I now have five in use on my farm.

The Acme is just the digger we needed. Unlike the machine diggers it digs clean, gets every potato in every hill, doesn't scar the stock, and is not bothered by the vines. The men work easily, yet quickly, and don't get so tired as with ordinary fork or hook digging.

I know from my own experience that the Acme Digger does better, easier and cheaper work than any other digger I have seen, and the best recommendation I can give anyone is that I continue to use it on my own farm.

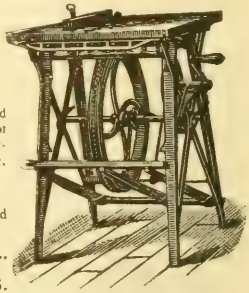
I am, yours truly,
F. LAUTNER, Leelanau County.

**Send $1.00 Today.** Let the Acme Attachment *prove* itself to *you*. Let it prove that your dollar is better than $100 investment in other diggers—that it will dig potatoes better and more economically—that it is the digger you have been waiting for. *Sent prepaid by express.* Money returned if you had rather have it than keep the digger.

Pamphlet and Potato Book free on request. Send now. Address Box 520,

**Potato Implement Co., Traverse City, Mich.**

## BARNES' Hand and Foot Power MACHINERY



This cut represents our combined circular saw, which is made for bee-keepers' use in the construction of their hives, sections, etc.

## Machines on Trial

Send for illustrated catalog and prices. Address

**W. F. & JNO. BARNES CO.,**
545 Ruby St.
ROCKFORD, ILLINOIS.

# BOOKS of All Kinds on CREDIT

You can have all the books you need by our plan. Write for that beautifully illustrated and descriptive book, "A Book Store in your home." It is free. Write today. We guarantee quality and value. Our prices the lowest. Write for catalog. It is free. The largest mail order Book house in the world. 48 years in business.

Dept. GB28 THE FRANKLIN-TURNER CO., 65-71 Ivy St., Atlanta, Ga.

# Fashion Book Free!

I want to send you my handsome new book showing over 400 of the latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for 5 cents each. They are the same patterns you have always paid 10c and 15c for at the stores, made by the same people, and correct in every detail.

**HOW I DO IT.**

I publish **The Home Instructor**, an illustrated woman's magazine and I want your name on my subscription list. **The Home Instructor** is bright, entertaining, clean and instructive—just the sort of a paper you should have in your home It has departments for every feature of home life, and prints the choicest fiction every month. Every issue has several pages devoted to the latest fashions, fully illustrated.

## My Special Offer.

Send me 25 cents and I will send you **The Home Instructor** for **two years** and will send my big fashion book to you free. I will also agree to sell you any pattern you want thereafter for 5 cts. I can sell them for 5 cents because I buy them by the thousand and don't make any profit. I don't want the profit, I want your subscription to **The Home Instructor.** You will save many times the cost of my offer in a year. Write to-day **A. OTIS ARNOLD,** Dept. B **Quincy, Ill**


APPLETON, WIS. Sept. 4, 1908.

THE A. I. ROOT CO., Medina, O.

*Gentlemen*—I wish to acknowledge receipt of the two Italian queens ordered from you a few days ago. They arrived in good condition, and I must say they are fine-looking queens. Thanking you for your promptness in lending, I am Yours truly, GEO. EICKMAN. Rt. 3, Box 4.


Fob 5 inches long, shield 1½ inches square

# Watch Fob Free

YOUR CHOICE OF CANDIDATES

## BRYAN OR TAFT

Handsomest Campaign Badge you have ever seen. You may have it FREE with our compliments. This fob is made of a fine grade of seal grained Russia leather, nickeled buckle, beautiful mother-of-pearl shield, containing a photo of your favorite candidate, either Bryan or Taft. It is guaranteed to be just as we describe it and you will be proud to wear it. We are giving away these handsome fobs to get acquainted with you and to get you acquainted with our splendid and instructive farm paper, "FARM AND STOCK," an up-to-date magazine devoted mainly to corn and live stock. The Watch Fob and a three months' trial subscription given you absolutely free on receipt of 10 cents in coin or stamps to pay for mailing. We will also send you our liberal proposition whereby you can secure other handsome premiums free by giving away several of these fobs to your neighbors. You are sure to be delighted with both fob and paper, so send 10c at once while they last to

**FARM AND STOCK**

**Box 307, St. Joseph, Missouri**



# NEW GOODS! BIG STOCK!

**New Warehouse** **Root's Goods**
**Prompt Shipment** **Low Freight**

EVERYTHING FOR THE BEE-KEEPER AT SAVANNAH, GA.

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

## Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

**HOWKINS & RUSH**
**241 BULL ST. SAVANNAH, GA.**



# FASHION BOOK FREE!

I want to send you my handsome new book showing hundreds of latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

## HOW I DO IT.

I publish the **FARMER'S CALL, a weekly** paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for Women folks, is its fashions in which I show the **5c patterns.** Let me help you to save money.

## MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week** (over 1000 pages) **for one year** and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts because I buy them by the thousand and don't make any profit. I don't want the profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY

**JOHN M. STAHL,** Dept. G, **QUINCY, ILL.**



**20 American Girl** postcards, and membership to our post-card exchange, also 3 mo. subscription to our paper—all for 10c. Up-to-Date Farming. Dept P, Indianapolis, Ind.

**FOR SALE.**—It will pay to get our special proposition. A. G. WOODMAN & CO., Grand Rapids, Mich.

## QUEENS of MOORE'S STRAIN OF ITALIANS

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

Prices: Untested queens, 75 cts. each; six, $4.00; doz., $7.50. Select untested, $1.00 each; six, $5.00; doz., $9.00.

I am filling orders by return mail.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

**J. P. Moore, queen-breeder, Rt. 1, Morgan, Ky.**

## Italian Queens

**GOLDEN AND CLOVER STOCK.**

Choice queens, 75 cts. each; six for $4.00, or $7.50 a dozen

**GEO. W. BARNES, Box 340, Norwalk, O.**

## Golden Italian Queens, 75c

**Six for $4 00.**

Mailed promptly. Safe arrival and satisfaction guaranteed. Circular.

**J. B. CASE, . . . . Port Orange, Fla.**

## Westwood Red-clover Queens

Are the bees that got the honey in 1907. Better try them for 1908. Nuclei and full colonies a specialty. Price list on application.

**HENRY SHAFFER, 2860 Harrison Ave., Sta. L, Cincinnati, O.**

## NOW IS THE TIME

to buy your queens for fall increase. I can mail promptly young vigorous queens —Italian, Carniolan, Banat, and golden. Prices, untested, 75 cts.; $8.00 per dozen; tested, $1.25 each; $12.00 per dozen. Circular free.

**Grant Anderson, Sabinal, Tex.**

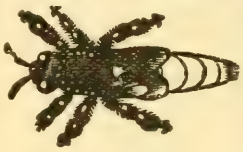
## Taylor's Strain of Italians

**IS THE BEST.**

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3.00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

**J. W. TAYLOR & SON, Beeville, Bee County, Texas.**

## ITALIAN QUEENS



Fine 3 and 5 banded queens till Nov. 15, untested, only 60c or $6.00 a doz.; extra fine queen, $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

**J. L. FAJEN, . ALMA, MO.**

## RED-CLOVER QUEENS

200 lbs. honey from my breeding colony. Mostly red-clover honey. Untested queen, 75 cts.; tested, $1.00; doz., $7.00. Four-frame nuclei and fine tested queen, $4. **G. Routzahn, Biglerville, Pa.**

## ITALIAN QUEENS

Large prolific queens of the Moore strain. Nice to handle, and good workers. Untested, 60c; 6 for $3.25; doz., $6.00, now going by return mail. **S. F. Trego, Swedona, Ill.**

## Queens ITALIAN Queens

BY RETURN MAIL.

Untested, 60 cts. each; 6 for $3.25; tested, $1.00 each; 6 for $4.75. 150 colonies of bees for sale. Write for prices.

**E. A. SIMMONS, . . CREENVILLE, ALA.**

## Extra Fine QUEENS

Queens of the Doolittle-Moore cross, $2.00 each; 3, $5.00; 6, $9.00. Queens of the Moore strain, $1.00 each; 6, $5.00; 12, $9.00. All queens warranted purely mated.

**W. M. PARRISH, Rt. 8, Lawrence, Kan.**

W. M. Parrish, Lawrence, Kan.

Covert, Kan., Sept. 12, 1907.

*Dear Sir:*—The queen I received of you in 1906 yielded, this year, twice as much surplus as any other one colony I have.

Clarence A. Hall.

## CARNIOLAN, BANAT, AND CAUCASIAN QUEENS

Home-bred, $1.00 each; five at 80c each; Imported, $4.00 each.

**FRANK BENTON, - Box 17, - WASHINGTON, D. C.**

# WHAT'S THE USE

## OF HAVING FINE HONEY IF IT IS IN POOR PACKAGES?

If you are among the fortunate ones who have secured a good crop of honey, surely you will not be so unbusinesslike as to sell it in second-hand or inferior cases. Your honey will sell far easier in nice new cases or tins. WE HAVE THEM.

**John Nebel & Son Supply Co., High Hill, Mont. Co., Mo.**

# ITALIAN QUEENS

And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $ 75 | $4 00 | $ 7 00 |
| Tested queens | 1 00 | 5 00 | 9 00 |
| Select tested queens | 1 50 | 8 00 | 15 00 |
| Breeders | 3 00 | 15 00 | |
| Straight five-band breeders | 5 00 | | |
| Two-comb nuclei, no queen | 2 25 | 12 00 | 22 00 |
| Three-comb nuclei, no queen | 3 25 | 18 00 | 32 00 |
| Full colonies on eight frames | 5 00 | 25 00 | |

**All queens now go by return mail** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

**QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.**

# 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5 00 | $9.00 |
| Select untested queens | 1 25 | 6.00 | 11 00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders $5 00 to $7.00

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

**GOLDEN-ALL-OVER and RED-CLOVER**

# ITALIAN QUEENS

My stock is the result of years of careful selection, and is equal to any in the country. The prices are only such as to insure long-lived, prolific queens, whose workers will be hardy and good honey-gatherers Write for 1908 circular.

| PRICES. | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1 00 | $5.00 | $9 00 |
| Select untested | 1 25 | 6.50 | 12.00 |

Tested, $1.75 each; select tested, $2.00 each.

Positively all orders filled in rotation.

**Wm. A. Shuff, 4426 Osage Ave., Philadelphia, Pa**

**Long-tongued**

# Red-clover Queens

**Bred by their Originator**

Do you want to get some specimen queens of the world-famous red-clover stock of Italian bees? Then buy from me, because I am the originator, and surely ought to know how to breed them in their purity. When you get them from me you know you have the real strain. For years I have devoted time and skill to this stock, trying to reach perfection. I can submit many splendid testimonials in favor of this stock to show my work has not been in vain. Try them, and YOU will be pleased also. I endeavor to please the practical man looking for definite results in dollars and cents. Many years' experience as head apiarist of The A. I. Root Co. enables me to fill the most exacting order with complete satisfaction to the purchaser Let me show you how well I can please you.

**Prices**

| | | 1 | 6 |
|---|---|---|---|
| Untested queen | Before October 30, | $1 00 | $ 5 00 |
| Select untested queen | " | 1 25 | 6 00 |
| Tested queen | " | 2 00 | 10 00 |
| Select tested queen | " | 3 00 | 15 00 |
| Breeding queen | " | 5 00 | |
| Select breeding queens | " | 7 50 | |
| Extra select " 1 yr. old | " | 10 00 | |

**F. J. Wardell**

**Uhrichsville, Ohio, U. S. A**

# QUEENS

of the Robey strain of three-banded Italians during the season of 1908. Warranted queens, 75 cts. each; $4.25 per six; $8.00 per doz. Tested queens, $1.00 each. Satisfaction or money refunded.

**L. H. ROBEY, Worthington, W. Va.**

# Queens

**Colden and three-banded.**

Wurth's queens take the lead everywhere; have 600 queens; can send by return mail; untested, 60 cts. each. Send for circular.

**DANIEL WURTH, Rt 3, Fayetteville, Ark.**

# PATENTS.

**Twenty-five Years' Practice.**

**CHARLES J. WILLIAMSON,**

**Second Nat'l Bank Bldg., Washington, D. C.**

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

UDO TOEPPERWEIN W. M. MAYFIELD

# THE BEE-KEEPERS' Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND
**AN IMMENSE STOCK OF HONEY-CANS**
(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

| | |
|---|---|
| 12-in. 4-row shipping-cases with 3-in. glass | $17.00 per 100 |
| 9¼-in. 4-row shipping-cases with 3-in. glass | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass | 9.35 per 100 |
| 6¼-in. 3-row shipping-cases with 3-in. glass | 9.80 per 100 |
| 7⅛-in. 3 row shipping-cases with 3-in. glass | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 25 cts. cash; in trade, 28 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**TOEPPERWEIN & MAYFIELD**
1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

## CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

FOR SALE.—To reduce stock I offer for sale as follows: 27 cases No. 40, and 44 cases No. 43 at $10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries, being extracted from select all-sealed upper stories. The partly full upper stories are being extracted by themselves (No. 38), and sold at a less price. Money can not buy better honey than lots No. 40 and 44. The above honey was gathered during June and the first half of July, and was extracted the week beginning Aug. 10. This eft-on-the-hive-all-summer honey is sappy, rich, ripe. A free sample will convince you. Other lots at a less price; also a little comb honey left.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—150 cases of No. 1 comb honey, 15 sections in 3-inch glass, no-drip cases, 6 cases in a crate, very fine, at $2.00 per case, f. o. b. cars here. Also 8000 lbs. clover and basswood extracted, in new 60-lb. cans, 2 in case, very heavy body and fine flavor, at 8c, f. o. b. cars here. Sample free. Also extracted in 1-lb. Simplex jars, at $2.00 per dozen.
W. H. TOWNSEND, Hubbardston, Mich.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 9 c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Aug. 16 we finished taking off our clover, basswood, and button-willow honey. It is principally clover, fine and rich. Delivered at station in 60-lb. square cans, two cans to case; 8¾ cts. per lb. Reference, our postmaster or agent, Lakeville, St. Joseph Co., Ind., at which place address C. A. BUNCH.

FOR SALE.—New crop of fancy white-clover extracted honey, thoroughly ripened on the hives before extracting. None of better quality on the market. Put up in barrels, new 60-lb. tin cans, and smaller packages if desired. For prices, etc., address
EMIL J. BAXTER, Nauvoo, Hancock Co., Ill.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, and guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan Ky.

FOR SALE.—5000 lbs. of clover and amber honey in 160-lb. kegs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—5 tons of fine-quality comb and extracted. State amount you wish, and we will quote you our lowest cash price.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Choice white extracted honey, mostly clover and raspberry mixed, in new 60-lb. cans. Price on application. Sample, 10 cts. JAMES MCNEILL, Hudson, N. Y.

FOR SALE.—Fancy clover extracted honey in new cans, two in a case. Send 10 cts. for sample, which may be deducted from first order. EARL RULISON, Rt. 1, Amsterdam, N. Y.

FOR SALE.—8000 lbs. raspberry, milkweed, and basswood extracted honey in new 60-lb. cans, very fine. What am I offered?
P. W. SOWINSKI, Bellaire, Mich.

VERY CHOICEST HONEY.—It is rich, thick, and has that exquisitely delicious flavor of honey ripened in the comb — clover, raspberry, or basswood. HONEY-BUYERS, 'tis your opportunity to buy the *very best* at a *low price*, as I must close it out. State quantity, and I will send sample with very lowest price.
F. B. CAVANAGH, Boscobel, Wis.

FOR SALE.—Extracted clover and buckwheat honey. Write for what you want. D. H. COGGSHALL, Groton, N. Y.

FOR SALE.—Extra fancy white-clover comb and extracted honey. F. M. MAYBERRY, Lederach, Pa.

FOR SALE.—Fancy and No. 1 white-clover comb honey.
ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Two barrels of nice white-clover honey. Box 134. JOHN W. JOHNSON, Canton, Mo.

FOR SALE.—White and buckwheat extracted honey in cans or kegs. A. E. WOODWARD & SON, Rt. 2, Voorheesville, N. Y.

FOR SALE.—3000 lbs. white comb honey at 13½ cts.
W. D. SOPER, Jackson, Mich.

FOR SALE.—Carload of alfalfa honey in 5-gallon square cans.
WM. MCKIBBEN, Ontario, Ore.

FOR SALE.—Honey, clover, or buckwheat, comb or extracted. Write for price. Sample of clover extracted free. State quantity and quality desired. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Basswood extracted honey, left on the hives until thoroughly ripe. One box of two 60-lb. cans, $9.60.
GUSTAVE GROSS, Lake Mills, Wis.

FOR SALE.—1908 crop of white-clover honey—a strictly fancy table honey, extracted from capped combs. If you want good honey, here it is, put up in new 60-lb. cans, square or round Sample free. WARREN H. WINCH, Hopkinton, Iowa.

FOR SALE.—White-clover honey of the finest quality, in new cans, boxed single, and holding 58 lbs. net each. Price per can, $5.50. Postpaid sample, 6 cts.
R. & E. C. PORTER, The Bee-escape Folks, Lewistown, Ill.

## Honey and Wax Wanted

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

Mail small sample, giving quantity you have, how put up, and lowest cash price you will take for it.
E. R. PAHL & CO., Milwaukee, Wis.

WANTED.—We are in the market for white extracted honey, in any quantity up to two or three cars. Mail sample and give source of honey, quality, quantity, and price.
M. H. TWEED & CO., 1175 Penn Ave., Pittsburgh, Pa.

WANTED.—We are in the market for No. 1 white extracted honey in any quantity. Correspondence solicited. State kind, quantity, and price asked. We also have for sale 60-lb. honey-cans, 2 cans in case. Both cans and cases in A1 condition, at 30 cts. per case. MICHIGAN WHITE CLOVER HONEY CO.,
31-33 Griswold St., Detroit, Mich.

## Wants and Exchanges

WANTED.—Refuse from wax-extractors and old comb for cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo. N. Y.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

Indian Runner ducks, Jennings stock, $1.00 each; fine S. C. B. Leghorn cockerels, $1.00. J. A. EVANS,
Ellwood City, Pa.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall.
A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Order your bee-supplies from Superior Honey Co., Ogden, Utah, at Root's catalog prices. You save time and money. Largest dealers in the West.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.— Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

## For Sale

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Shipping-cases, the no-drip kind; overstocked; get our special prices. A. G. WOODMAN CO.,
Grand Rapids, Mich.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS,
(Root's Goods.) Paden City, W. Va.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

FOR SALE.—360 ten-frame hives complete, $1.00, as follows: One hive-body with ten wired combs on full sheets of foundation, H. frames; one Danz super trimmed with full sheets of foundation; lid and bottom; Root's goods, in good condition. Also one Root observatory hive, new, complete, $4.00. All must be sold at once. H. A. ROSS,
1709 Upper Second Street, Evansville, Ind.

## Bees and Queens

FOR SALE.—75 first-class colonies of bees, mostly in ten-frame hives. J. D. HOLDENER, Carlyle, Ill.

FOR SALE.—Fine select untested Red-clover and Golden Italian queens, 60 cts. each. F. M. MAYBERRY, Lederach, Pa.

FOR SALE.—100 colonies at Horseheads, N. Y., complete for extracted honey, $2.50 each. WM. CARDER, Constance, Ky.

FOR SALE.—Improved Italian and Golden Mortgage-lifter queens. Tested and untested, $1.00 to $3.00.
BEST THE BEE-MAN, Slatington, Pa.

FOR SALE.—Italian, Carniolan, and Caucasian queens. Untested, 75 cts.; 12, $8.50; virgins, 40 cts.; 12, $4.50. Stamps not accepted. EDWARD REDDOUT, Baldwinsville, N. Y.

FOR SALE.—First-class apiary of 120 colonies with all supplies. Write for particulars to
J. B. HALL, Box 595, Woodstock, Ont., Can.

FOR SALE.—300 surplus young tested queens, red clover or golden, 50 cts. each as long as they last.
H. A. ROSS, 1709 Upper Second St., Evansville, Ind.

FOR SALE.—Selected young Italian queens, bred for superiority in honey production. Single queen, 75 cts.; 6 for $4.00; one dozen, $7.50. Also golden-all-over, Cyprians, Carniolans, and Caucasians. JULIUS HAPPEL, 414 Fourth St., Evansville, Ind.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

FOR SALE.—500 colonies of bees in lots to suit purchaser, at a bargain. Fine condition; no disease. Will ship, or furnish good locations. No wintering problem here. For particulars write B. F. YANCEY & SON, Angleton, Texas.

FOR SALE.—250 colonies of bees in ten-frame hives at $2.75 per colony; no disease; fixtures for comb and extracted honey cheap; also 22 acres of land; first-class buildings, and improvements. If not sold by Jan. 1 a reliable man is wanted to rent or run bees and farm on shares. J. H. ZEINER, Bard, Ark.

FOR SALE.—Bees, 300 full colonies, first-class hives, each $3.75; three for $11.00. No disease. Must sell this fall. Empty Dov'd hives, $1.00; supers, 25 cts.; 4-frame extractor, $18.00 Other supplies. Extracted basswood honey, 10 cts. per lb.
L. M. GULDEN, Osakis, Minn.

FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. RAILS, Orange, Cal.

FOR SALE.—350 colonies of bees in first-class order on easy terms. I would also sell an 82-acre farm, all in the best cultivation; three acres in orchard and good out-buildings. I would sell the same in 5 and 10 acre tracts on part payments. It is two miles from Caldwell, where the great government project is established. Caldwell is the liveliest city in Idaho. Great work is developing. I also offer a 9-room house and barn, and one block within half a mile of the main street, where I keep one of my yards of fancy poultry, also one river-bottom farm, 240 acres, rich soil, and good water-right; good location for bees. Write for particulars, as I can give you any information desired, for I have been in this country 24 years. OTTO GEISE, Caldwell, Idaho

## Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

FOR SALE.—Delaware farm, public road; good buildings, good water; fruit, wood; rural delivery; school, churches, stores, mills, railroad depot, canneries, blacksmith shops, all convenient; an ideal place for bees, poultry, fruit, and trucking.
L. A. LUDWIG, Marydel, Md.

HOMES.—Deep rich soil, abundance of water for irrigation; best market and climate; wheat, oats, barley, rye, alfalfa; red, alsike, and white clover; vetch; small and large fruits; chickens, hogs. Bees average 100 lbs. per colony.
E. G. GIBSON, Oxford, La Plata Co., Col.

FOR SALE.—Farm of 14 acres near city of 20,000; good soil, market, and bee pasture. L. C. HOOK, Richmond, Ind., Rt. 3.

## Educational.

Any one interested in the education of a child not yet in school, send name and address to
E. WHITNEY, Flemington, N. J.


## KIND WORDS.

*The A. I. Root Co.:*
The tested southern-bred queen was received in good condition, and she is a fine one too. Enclosed find check.
Lime Kiln, Md., Sept. 3. J. F. MCABEE.

*The A. I. Root Co.:*
I received the Italian breeding-queen in good condition. Please forward to me a Caucasian as early as possible.
PETER JAMES HURST.
Nelson, St. Ann's Bay, Jamaica, Aug. 19.

*The A. I. Root Co.:*
Referring to the bees ordered for Judge Woods, of Marion, S. C., I beg to say that they arrived several days ago by express, and at Judge Woods' request I went over to Marion to assist in hiving them. The shipment of hives, etc., from Philadelphia, though badly delayed in transportation, reached Marion in *perfect condition*, and we had no difficulty all in getting every thing in shape. The bees themselves seemed to be in perfect condition. We found *only eight or ten dead bees* in each nucleus. After my experience with black or hybrid bees which I found on my place when I leased it, I was hardly prepared for the extreme gentleness of the Italians, even after all I read about them. With the exception of one sting which I received by mashing a bee with my hand while placing the hand on the bottom of the cage, none of them offered to sting. They were very quiet, even after thumping out those that adhered to the inside of the cages.
L. W. MCLEMORE.

I am now reading my second copy of GLEANINGS, and it is beginning to take some of the wrinkles out of my forehead. I have two stands of bees, and they have filled 120 sections already. Our baes will make honey here till November; no frost very often until then.
Beaver, Ore. A. F. GARDNER.

THE A B C OF GETTING WELL, ETC.

Please send me 100 copies of your health leaflet. It certainly is generous of you to give them free. For some years I have given a year's subscription to the *Practical Farmer* to different people who, I thought, would be benefited. Your leaflets will enable me to reach a great many more people. It certainly is a great work that you and the *Farmer* are doing.
Barium Springs, N. C., Sept. 7. W. B. BAILEY.

A KIND WORD FOR "OUR HOMES" OF MORE THAN 20 YEARS AGO.

*Mr. Root:*—I have been reading one of your sermons, "What doth the Lord require of thee but to do justly, and to love mercy, and to walk humbly with thy God." It is in GLEANINGS for 1886. A friend gave me a lot of them, also a subscription for the year 1908. It was just the kind of sermon I needed, and it helped me very much. I have much to do on Sunday. The children come home, also my mother and husband's brother. They work away, and like to get home for one day in a week. Of course, it is hard; but I like to have them come, and I guess it is the Lord's work and my duty. Sometimes I have doubted and wondered if it were sinful, but I doubt no more. May you write many more of those good stories. HATTIE E. GRAVES.
Walpole, N. H., June 21, 1908.

"CHICKEN" BIBLE.

In yours for Aug. 15, one of your subscribers asks for a "chicken bible." I don't think he could get one to compare with GLEANINGS, as I have had some eight years' experience with the "chicken bible" as he calls it. The one that, in my estimation, comes nearest to the above, is *Poultry*, published by Miller Purvis, Peotone, Ill. It is bright, clean, and nicely printed. I have no connection with it.

I get more eggs without males. I have had as many as 270 eggs per bird. I am in the business for the love of it, and not to make money. R. F. HERRING.
Chicago, Aug. 21.

## Convention Notices.

A meeting of the Adirondack Bee-keepers' Association will be held at Glens Falls, N. Y., Oct. 1, in the parlors of the Hotel Ruliff. All interested in apiculture are invited to be present.
Glens Falls, N. Y. ARTHUR W. CARY, Sec.

The annual meeting of the Northern Illinois and Southern Wisconsin Bee-keepers' Association will be held in the courthouse in Rockford, Ill., on Tuesday and Wednesday, Oct. 20 and 21, 1908. All interested in bees are invited to attend.
Cherry Valley, Ill. B. KENNEDY, Sec.

The annual meeting of the Western Illinois Bee-keepers' Association will be held on Friday, Sept. 18, in the county courtroom at Galesburg, Ill. All interested in bees are earnestly requested to attend and help make this a profitable meeting.
Altona, Ill. W. B. MOORE, Pres.

Bee-keepers in Alabama, Florida, Georgia, Mississippi, and Tennessee, also points along the route, who will join the party of a carload to attend the National Convention at Detroit, Mich., Oct. 13—15, will please write us for rates, etc. This promises to be the best convention yet, and is to your interest to attend.
Elamville, Ala. WM. S. MCKNIGHT.

The annual meeting of the Kansas State Bee-keepers' Association will be held at Hutchinson, Sept. 16, 17. The first session will be held at 2:30 on the 16th. This meeting occurs during the State fair, and it is hoped that a large number of bee-keepers will be present. Several noted bee-keepers from different parts of the country have promised to attend.
Topeka, Kan. O. A. KEENE, Sec.

MEETING OF TENNESSEE BEE-KEEPERS.

The Central Tennessee Bee-keepers' Association met at the rooms of the Nashville Board of Trade on August 8, with about thirty members present. Pres. J. M. Davis occupied the chair. The meeting was opened with prayer by Mr. Ayres, of Cedar Hill. Nine new members were enrolled.

Among the subjects discussed were the following:

Cement hive-stands; home marketing of honey; transferring bees, etc.

Mr. Leslie Martin, of Lebanon, read a paper entitled "Further Experience with Caucasian Bees." He is of the opinion that the Caucasians have held their own with the average Italians in regard to honey-gathering. They are much more gentle, easier handled, and but very little more given to swarming than the Italians. However, he thinks it will take several years, through both good and bad seasons, to test them thoroughly.

J. M. Buchanan spoke on "Bees and Honey at the State Fair." It was decided to place a nice exhibit at the State Fair this fall, as this is one of the best methods of advertising our products.

A committee was appointed to confer with Southern bee-men in regard to getting up a carload of bee-keepers to attend the National convention at Detroit. It was decided to extend an invitation to the National Bee-keepers' Association to hold its 1909 convention at Nashville, Tenn. Our local association has now about fifty members, and at our meeting last spring we voted to join the National in a body.

Most of the members reported a rather short crop this year, owing to too much rain during the flow from clover.

The convention adjourned to meet on the second Saturday in March, 1909, on which date occurs the annual election of officers.
Franklin, Tenn., Aug. 17. J. M. BUCHANAN, Sec.

# SPECIAL NOTICES

## BY OUR BUSINESS MANAGER

NEW MANAGER IN OUR NEW YORK OFFICE.

Mr. L. W. Boyden, who has been manager of our New York office for the past three years, and previous to that in charge of our Chicago office for some time, has come to Medina to take up work in the home office. The new manager in charge at New York, beginning Sept. 1, is Walter E. Thorndyke, a nephew of our treasurer and business manager. Mr. Thorndyke was in the employ of the company for seven years, most of the time in the office, first as stenographer, then as assistant book-keeper. For two years past he has been with the American Steel and Wire Co. in their Cleveland office. He returns to the service of the company with increased responsibilities. We commend him to the patrons of our New York office, with confidence that his previous training fits him for efficient service.

QUEENS.

We have a large number of queens, untested, tested, and higher grades, ready for immediate mailing, safe arrival guaranteed to any point in the United States, at our regular prices. For untested, $1.00 each; 6 for $5.00; tested queens, $2.00 each; 6 for $10.00; secect tested queens, $3.00 each; 6 for $15.00.

The above refers to our home-bred Italian stock, red clover, leather-colored strain. Commenting on the queens he had received of us, Mr. E. R. Longenecker, of Lytle, Texas, to whom we have sent fifty queens this season, writes: "There is no question about your queens being superior, and their progeny excelling as honey-gatherers on *any* flora that I have seen them work. I first bought six queens of you in 1903, and have ordered a number of times since, and have no kick coming." We are sending queens by first mail; and as the season is nearly at a close, orders ought to come in at once to be sure of getting this stock, for we shall be unable to ship after cold weather has fairly set in.

# Special Notices by A. I. Root

THE WRIGHT BROTHERS AND THEIR AERIAL FLIGHT UP TO DATE.

I suppose you all know that our two friends, the Wright Brothers, are not only "up in the air," but they are, perhaps, standing out more prominently before the whole wide world than and other two persons now living. Not only are the accounts of their successes found in almost every magazine and daily paper, but almost every periodical of any sort is giving them recognition. As we go to press, Orville has made his third long flight, each one of about an hour or a little more. He has been able to manage it perfectly, making figure 8's as well as circles, and making turns with the wind blowing at the rate of ten to fifteen miles an hour. It is true that it staggered the machine somewhat when he turned about from going with the wind, and proceeded directly against it; but after he had become accustomed to handling the craft he made each turn more easily than the one before it. Fifty-seven times the machine came around to the starting-point during a period of 70 minutes and 24 seconds. After this he took Lieut. Lahm, the army's aeronautic expert, along with him for a flight of 6 minutes and 26 seconds. This was the first time he had been accompanied by a passenger in the present series of tests, and the result was the breaking of all previous records for that sort of flight. The first time that he succeeded in making a flight of almost an hour, when his friends came around to congratulate him on his wonderful achievement, the papers tell us that he actually shed tears—yes, tears of joy to think the moment had come, after all the long years of hard work on the part of himself and his brother, when they had actually demonstrated to the world that men can fly as birds do, and make use of the air above for a general thoroughfare for trade and travel, as well as the waters and the solid ground underneath the skies. I especially admire these two young men because they have worked so slowly and carefully. When a young bird essays to make its first flight from the nest, it has to learn how to use the wonderful wings that God has given it, little by little. Well, these two men not only figured out how to build the machine by cutting and trying, but at the same time they were obliged to learn how to use it, just as the bird has to learn by *actual practice* how to use its wings. We may congratulate them on having had the good sense and steadiness of mind to work so carefully that no accident worth mentioning has ever happened to either of them; and above all and over all I wish to emphasize the fact that from beginning to end they have steadily refused to use their machine on Sunday, or even work with it that day. They have also set an example before the youth of our land and others by abstaining from the use of intoxicants in every form. When I was taking breakfast with them one morning I ventured to ask why it was that neither of the brothers accepted coffee. I think it was Wilbur who replied with his peculiar pleasant smile:

"Mr. Root, we expect to make some flights this morning, and we have learned by experience that our heads are clearer and our nerves steadier if we abstain from coffee at breakfast."

Is it really true that the time is coming (or *has* come) when the world will accord and pay a premium to those who live pure and temperate lives as do the Wright Brothers?

Many are just now asking the question why these brothers do not take a straight flight, say from one city to another, and let the whole wide world see what they are doing. I presume it will be better just yet for them to keep the machine reasonably near the workshop where their tools and appliances are kept. Another thing, they are just now negotiating the sale of one of their machines to France, and another to the government of the United States. When these preliminary tests are completed we may expect to see these machines, or similar ones, flying over the whole wide world, perhaps including even the *north and south pole* that have been so much talked about.

STILL LATER IN REGARD TO THE WRIGHT BROTHERS.

From the *Woman's National Daily* we clip the following:

CAN EQUAL BROTHER'S RECORD.

LE MANS, Sept. 13.—Wilbur G. Wright says that defects in his motor are all that have kept him from equaling the flights made by his brother Orville at Ft. Myer, in America. "My motor has not worked smoothly yet, but I expect to get it in shape soon. Just as soon as I find that it is all right I expect to make a flight that will be as startling as that of my brother. There is no reason why I should not, as our machines are practically the same."

From the same paper we learn that Orville Wright, when asked why he did not stay up still longer during the last and longest flight, replied as follows:

"Well, the fact is I came down solely because I was tired and hungry. I could have continued the flight another hour just as easily. I knew by the figures chalked on the shed-roof by my mechanic that I had bettered my previous record, and I thought that was enough for one day."

It seems that the city of Dayton, where the Wright Brothers have lived and experimented all their lives, has just been waking up to the importance of giving the brothers a reception or ovation on their return home. The Dayton *Herald* says in regard to the matter:

"Dayton may crumble in dust, but the name of Wright Brothers will endure as long as earth endures.

"Henceforth the names of Orville and Wilbur Wright will be enrolled beside those of Watt, Fulton, Morse, Bell, Edison, and Marconi in history's tablet of fame."

We make a further clipping as follows:

"No one read the reports of the three flights of the Dayton aeroplanist with greater avidity, or discussed the accomplishment with more zeal, hope, and inspiration than did the venerable father of Orville and Wilbur Wright—Bishop Milton Wright.

"The venerable churchman fairly radiated with joy, feeling that the toil, planning, hope, ambition of years had became a scientific reality—an accomplishment that would contribute immeasurably to the material wellbeing of society. The venerable gentleman, bowed with the weight of years, looked younger, felt younger. His sons effected a revolution in science."

"GREAT NAVIES TO MAINTAIN PEACE."

We clip the following from the *National Stockman and Farmer:*

The Emperor of Japan wants a great navy to maintain peace. The Russian Czar wants a great navy to maintain peace. The German Emperor wants a great navy to maintain peace. The rulers of France want a great navy to maintain peace. The king of Italy wants a great navy to maintain peace, and the king of England wants a great navy to maintain peace. And so multitudes of men and women are compelled to hard toil and suffering to maintain these great navies to maintain peace. Norway and Sweden and Denmark and Belgium and all the nations of South America get along very comfortably without great navies to maintain peace.

In view of the above I do not know but I shall have to swing back to where I stood first—see p. 1017, Aug. 15. If all the nations of the earth are obliged to maintain great navies to preserve peace, why can't we, especially those of us who call ourselves Christians, "cut it all out" (as the boys say) and substitute in its place "In God we trust"? Then we can consistently breathe the little prayer that ends with "Thy kingdom come; thy will be done on earth as it is in heaven."

"GOD'S KINGDOM COMING."

On the 4th of July four of our saloons closed their doors, and on the 15th of August the other one will close and then our town will be a dry one. I would like to see them all dry.

Bevier, Mo. V. B. GUFFEY.

# 20 AMERICAN GIRLS FREE

Country Girls, City Girls, Western, Southern, and Eastern Girls; Skating, Riding, and Bathing Girls, and many other views of the beautiful American Girl—**all free**; also a membership to the Post-card Exchange.

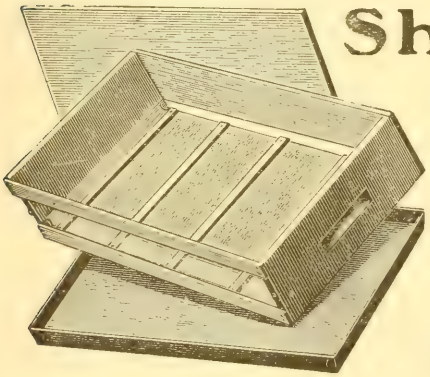
This famous set of souvenir post cards is considered the most popular set ever issued. Twenty different views of the beautiful Americnn Girl; all worth framing—the gem of a post-card collection. I want to place a complete set in the hands of **every American woman free.**

## MY SPECIAL OFFER

In order to place *Up-to-date Farming* in your home I will send it to you for **three months for 10 cents**, and include, with my compliments, **a complete set of American Girl post cards.** Every woman should read the family and household pages of *Up-to-date Farming*; the boys will be interested in the stories and puzzles, while the men will read its agricultural and marketing features with much profit.

Remember, 20 souvenir post cards (American Girl set) and a three months' subscription to *Up-to-date Farming*, all for 10 cents (stamps or silver).

**Garrett Wall, Up-to-Date Farming, Indianapolis, Ind.**



# Shipping-cases

for any number or size of sections desired. These cases are made of fine white basswood, and the workmanship is first class. Owing to the shortage in the honey crop last year we have a good stock on hand and can make immediate shipment.

Twelve-inch case, with follower, to hold 24; or eight-inch case, with follower, to hold twelve beeway sections. shipped when no size is mentioned. All cases single tier unless otherwise ordered.

## Honey-packages in Tin.

Standard packages for storing and shipping extracted honey. Less chance for leakage or taint from wood; being square they economize space. Five-gallon cans boxed two or one in a box; gallon cans 10, ½-gallon cans 12 to box. Five ½-gallon cans not boxed if desired. Prices on application for any quantity.

Place your order now; prices and prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY COMPANY**
**123 Nicollet Island, Minneapolis, Minn.**

Oldest Bee-paper in America

# This Coupon Worth 35 cents

Now in its 48th Year

(*New Subscribers Only*)

*Name* .....

*Post office* .....

*State* .....

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

**AMERICAN BEE JOURNAL**

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

**It Will Increase Your Honey-Money**

If you will send us your name and address with 40 cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

**American Bee Journal, 118 West Jackson, Chicago, Illinois**

# HONEY

We have on hand a fine lot of new extracted white-clover honey which is excellent, and which we offer at the following prices:

| | | |
|---|---|---|
| Barrels (about 550 lbs. each) | 8c | per pound |
| Ten 60-lb. cans or more | 8½c | " |
| Two 60-lb. cans or more | 9c | " |
| One 60-lb. can | 10c | " |
| Six 10-lb. cans or more | $1.15 | each |
| Twelve 5-lb. cans or more | 60c | " |

After September 20th we can furnish amber fall honey at the same prices as above.

Sample free

**DADANT & SONS, Hamilton, Ill.**

# FOR OVER 25 YEARS

our make of goods has been acknowledged to be in the lead as regards WORKMANSHIP and MATERIAL.

## Our AIR-SPACED HIVE is a most excellent winter hive,

and fully as good and convenient for summer management as the single-walled. Same inside dimensions as regular Dovetailed hives; all inside material interchangeable with Dovetailed hives.

## We manufacture full line of BEE-KEEPERS' SUPPLIES.

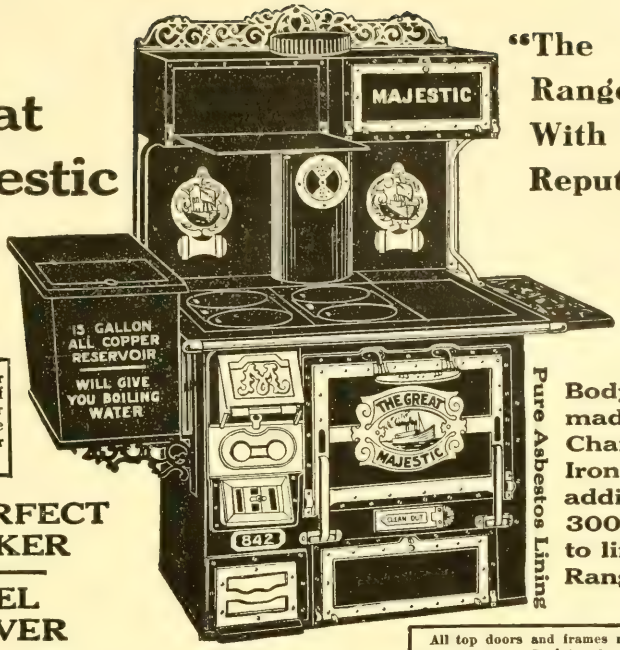
| | | | |
|---|---|---|---|
| FALL AND WINTER DISCOUNTS: | Sept., 7 per cent. | Nov., 5 per cent. | Jan., 3 per cent. |
| | Oct., 6 per cent. | Dec., 4 per cent. | Feb., 2 per cent. |
| | | | Mar., 1 per cent. |

Catalog free.

**W. T. FALCONER MFG. CO., Jamestown, N.Y.**

# The Great Majestic

"The Range With A Reputation"




With water fronts if wanted for pressure or other boilers.

**PERFECT BAKER**

**FUEL SAVER**

Pure Asbestos Lining

**Body made of Charcoal Iron, adding 300% to life of Range**

All top doors and frames made of malleable iron. Can't break or crack.

***You*** don't buy a range every year. Therefore when you ***buy*** one, ***buy*** the ***best.*** At first the Great Majestic may cost you a very little more than an ordinary range, but in the end it is ***much cheaper.*** It has ***durability*** and will out-last three ordinary ranges. It is scientifically built—***no heat can escape or cold air enter***—will ***save half*** on your ***fuel bill.*** A perfect baker—***not one day good—next day poor—but always uniform.*** Will save you from disappointment and poorly cooked meals. Your Best Guarantee: 1st—The reputation of the plant behind the range. 2d—Hundreds of thousands in use every one giving satisfaction. We want you to see ***The Great Majestic.*** If no dealer near you has it, write us—we will send you free our booklet "Range Comparisons," and tell you where you can see a Majestic—the range that gives satisfaction and out-lasts all others.

**THE MAJESTIC MFG. CO., St. Louis, Mo.**

***The Great Majestic Is For Sale In Nearly Every County In Forty States***

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If YOU are in want of anything for **Orchard, Vineyard, Lawn, Park, Street, Garden or Greenhouse,** why not patronize the old, reliable, up-to-date, **S. & H. CO.,** who have made a specialty of dealing direct with planters over half a century?

**Seeds, Bulbs, Roses, Shrubs, Vines, Mail-Size Trees, Etc.**

by mail, postpaid, safe arrival and satisfaction guaranteed. Large orders and large trees by express or freight. Catalogue No. 1 FREE to buyers of Fruit and Ornamental Trees; No. 3 to buyers of Holland and other Bulbs, Roses, Ferns, Palms and Greenhouse Plants in general. Try us. 54 years. 44 greenhouses. 1200 acres.

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**Box 4, Painesville, Ohio.**

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**MICHIGAN LAND** for fruit, stock, and diversified farming. Write S. S. Thorpe, 10 McMullen Bldg., Cadillac, Mich.

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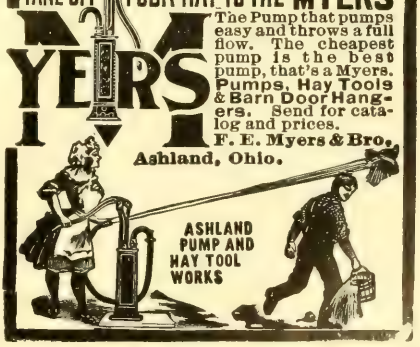
**SPRAY PUMPS**

"TAKE OFF YOUR HAT TO THE MYERS"




The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

**F. E. Myers & Bro.,**
**Ashland, Ohio.**

ASHLAND PUMP AND HAY TOOL WORKS

# CALIFORNIA PRODUCTS

DIRECT TO YOU

# WE PAY THE FREIGHT

**Guaranteed First Class and this year's crop**

## Dried Fruit

**Apricots Peaches**
**Prunes Pears**
**Muscatel Raisins**
**Seedless Sultana and**
**Seeded Mus'l Raisins**

Packed in two-pound cartons, except seeded raisins, which are packed in one-pound cartons. Then cartons packed in cases, 25 cartons to the case. Our dried fruit retains all the flavor and goodness of the fruit.

## Pure Extracted Honey

Made of the blossoms of the orange and sage—the finest flavor in the world. Put up in one-gallon and five-gallon cans. *It will keep indefinitely.*

## California Soft-shell Nuts

**Walnuts Almonds**

## Canned Fruit

**Our Brands**
**"Ware-da-gro"**—The large selected fruit put up in heavy cane syrup.
**"Direct-tu-u"**—The smaller pieces put up without syrup.

Packed 24 cans to the case in assortments comprising these different kinds which gives a good variety. This is the regular-sized can that you purchase at the store.

**Apricots Peaches**
**Pears Grapes**
**Plums**

## We Guarantee

every California product which we sell, and stand ready to refund your money on any goods not satisfactory.

Our reference:—First National Bank, Colton, Cal.

## We Shipped Our Products

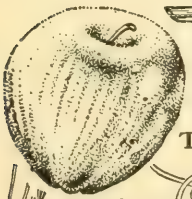
last season to every State in the Union, also Mexico.

THREE SOUVENIR POST-CARDS FREE. Also price list. Write for them.

## CALIFORNIA FRUIT PRODUCTS COMPANY

DEPT. I. COLTON, CALIFORNIA





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## Delicious Apple & Banner Grape

Tree & Vine Free

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**THE FRUIT-GROWER**

three months, Free and Our Offer to give away 2 Superb New Fruits. Handsomest farm paper published, interesting and helpful, even if you have only a few trees or plants. New fruits are finest ever introduced and would cost $1.50 at nursery. Both perfectly hardy. Delicious sold high as $6 bushel. Grapes are just grand. One of the Three handsome FREE trial copies will be

**Our Homeseekers Edition**

telling about wonderful new fruit districts in Northwest, West and Southwest. Our editor personally visited these sections and tells honestly and vividly all about them. This number alone worth hundreds of dollars to those seeking new and profitable home lands. Write now to The Fruit-Grower, Saint Joseph, Missouri.

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Send paper 3 months FREE and tell how to get New Fruits without cost, after which I will accept offer or notify you to stop the paper.

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By our wonderful Simplex System—one of the greatest inventions of the age—anyone of ordinary education can learn by mail to play piano or organ

**IN 20 EASY LESSONS**

You need not know the first principles of music. By this wonderful system you can in 20 lessons become a capable musician. The work is easy and fascinating—you will be wonderfully surprised at the progress you will make. In a few weeks, by this method, you can play popular, sacred or classical music. Considered better than a 3-year conservatory course as a time and money-saver—teaches the practical and usable in music and does away with all unnecessary theory. You should have this course of lessons. The cost is a mere trifle compared to the real value of the instruction you get. Send for our **FREE BOOK** today. State whether you have piano or organ.

**Simplex School of Music**
Conservatory 17
**Kansas City, Mo.**

# Gleanings in Bee Culture

BEE-KEEPING IN SOUTH AFRICA—*Courtesy of W. N. Scott, Queenstown.*

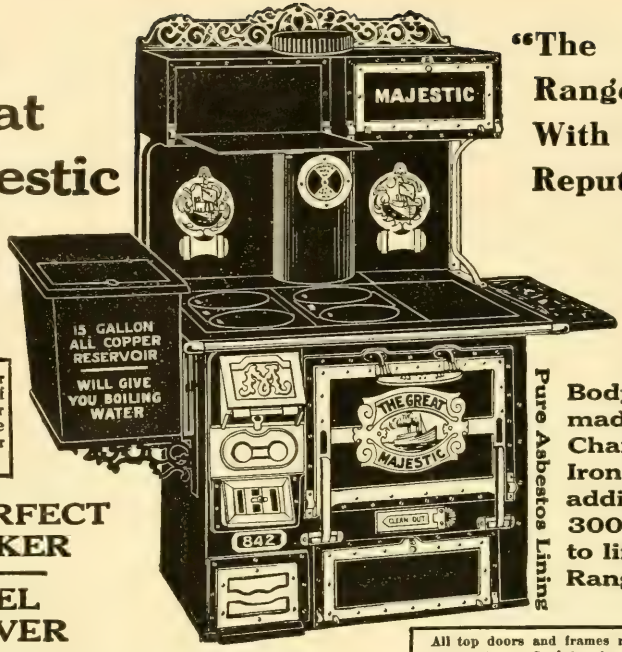
***Published by The A. I. Root Company, Medina, Ohio, U. S. A.***

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI October 1, 1908 No. 19

# The Great Majestic

"The Range With A Reputation"




With water fronts if wanted for pressure or other boilers.

**PERFECT BAKER**

**FUEL SAVER**

Pure Asbestos Lining

**Body made of Charcoal Iron, adding 300% to life of Range**

All top doors and frames made of malleable iron. Can't break or crack.

***You*** don't buy a range every year. Therefore when you ***buy*** one, ***buy*** the ***best.*** At first the Great Majestic may cost you a very little more than an ordinary range, but in the end it is ***much cheaper.*** It has ***durability*** and will out-last three ordinary ranges. It is scientifically built—***no heat can escape or cold air enter***—will ***save half*** on your ***fuel bill.*** A perfect baker—***not one day good—next day poor—but always uniform.*** Will save you from disappointment and poorly cooked meals. Your Best Guarantee: 1st—The reputation of the plant behind the range. 2d—Hundreds of thousands in use every one giving satisfaction. We want you to see ***The Great Majestic.*** If no dealer near you has it, write us—we will send you free our booklet "Range Comparisons," and tell you where you can see a Majestic—the range that gives satisfaction and out-lasts all others.

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by mail, postpaid, safe arrival and satisfaction guaranteed. Large orders and large trees by express or freight. Catalogue No. 1 FREE to buyers of Fruit and Ornamental Trees; No. 3 to buyers of Holland and other Bulbs, Roses, Ferns, Palms and Greenhouse Plants in general. Try us. 54 years. 44 greenhouses. 1200 acres.

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**SPRAY PUMPS**

"TAKE OFF YOUR HAT TO THE MYERS"

The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

**F. E. Myers & Bro.**
**Ashland, Ohio.**

## SAVE 30 TO 60 PER CENT. BUY DIRECT. BUILDING SUPPLIES OF EVERY KIND

**The Chicago House Wrecking Co. Purchased at forced sales, 50,000,000 feet of new lumber.** We are making special concessions to those who buy at once. Our prices today are far lower than prices have been for years. Order now for immediate or future use. Quick action will save you big profits. Remember prices elsewhere which are even now high, are bound to rise. We can quote you 30 to 60 per cent better prices for the same lumber than your local dealer. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouse and yards at Chicago and see the lumber we are offering and you will recognize that it is all we say of it. Make your own selection and see it loaded. It is not necessary to come to Chicago, however, unless you wish to. **We can fill your order by mail** with just what you want and guarantee you absolute satisfaction. Ours is the largest direct to the consumer lumber headquarters in the world. We sell millions of feet annually. Orders filled from every part of the United States. No matter where you live you can save money by supplying your building wants here.

We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can save you money on it. Our tremendous business of millions of dollars annually is your best guarantee of complete satisfaction of every purchase made from us. In our enormous stock of new lumber of every kind we have just what you need for every purpose. Don't buy a stick of material until you get our prices. We offer you everything in the lumber and building supply line needed for residences, farm homes, stores, churches, barns, outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 60 per cent less than your local dealers or lumber yards ask for it.

## IMPORTANT! Send Us Your Lumber Bill For Our Estimate

Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which means sacrificed prices and enables us to sell even as low as cost without loss. You take no chances in dealing with the Chicago House Wrecking Company. Whether for $1 or $10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

We also furnish you building and barn plans absolutely free upon request. Write us for any information or advice you want and we will have our staff of architects answer every inquiry promptly. Our free book of plans is sent if you mention this paper. We simplify your building proposition.

Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of every detail. That is what our Special Builder Service is for. Be sure and send us your lumber bill for our estimate. Feel free to write for anything you want to know along the line of building supplies, furnishings, etc.

## WE PURCHASE OUR GOODS AT Sheriffs' and Receivers' Sales

***Hundreds of Big Money Saving Bargains for Every Builder. Don't Build Your House, Barn, Store, Corn Cribs, Church, Etc., without getting Our Big Lumber Offer. Lowest Prices on Millwork Supplies, Roofing, Water Supply Outfits, Paints, Plumbing Supplies, Hardware, Heating Outfits, Furniture, Carpets, Linoleum, Etc.***

## DOORS 40c WINDOWS 20c

1,000 good doors, various sizes, secured by us in connection with dismantling operations, most of them with hardware. Prices range from **40c up.** Fancy front doors, all designs, **$1.50 up.** 10,000 window sash, 20c up, all sizes. Complete line of everything in mill Work. All brand new, best quality. Barn sash, 6 sizes, **25c up.** Cellar sash, **37c up.** Clear yellow pine mouldings, 25c per 100 ft. up. Porch columns, **54c up.** Stair newels, **$1.78.** Stair rail, **10c per ft.** Pilaster casing, O. G. base, **1 3-4c per ft.** Base blocks, **4c each.** Quarter round, **25c per 100 ft.** Hardwood thresholds, **4c.** Porch brackets, **3c.** Porch spindles, **4c.** We handle everything in the Building Supply Line, including light and heavy hardware. **Send us your lumber bill for our estimate.** Ask for our new special mill work catalog. It prices everything needed for building purposes. Sent free.

## Rubberized - Calvo Roofing

**$1.25 per sq.** Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Weather-proof and fire-proof. We furnish with each order sufficient cement to make the laps and large head nails. Price is per sq. of 108 sq. ft. **1 ply, $1.25. 2 ply, $1.40. 3 ply, $1.75.**

## OUR NEW 500-PAGE CATALOG NO. 633 FREE.

**This Wonderful Bargain Book** is just out and ready to be sent to you at once. It is a book such as every shrewd buyer must have. **500 Pages** with thousands of items of the very best merchandise and supplies bought at the Sheriffs' and Receivers' Sales. It will pay you to keep it handy. Its pages contain a full record of what we still have on hand from the wonderful St. Louis Worlds' Fair. Merchandise, Machinery and Supplies, articles for every one. You will find it useful in the home, in the workshop or in the office. Write today. **Cut out coupon in corner.** Fill in answers to questions. Sign your name and address in full and mail to us. We will send you our Catalog free upon receipt of coupon and answers to questions.

***CHICAGO HOUSE WRECKING COMPANY, 35th and Iron Streets, CHICAGO, ILL.***

## FREE CATALOG COUPON

***Fill out, cut out, and Mail to Us.***

When do you expect to build or improve?.....

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What kind of building or buildings?.....

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What items in this advertisement interest you the most?

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Name.....

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R. F. D. or P. O. Box .....State.....

I saw this advertisement in Gleanings in Bee Culture.

Send me free of all cost your 500-page Catalog Address

**Chicago House Wrecking Co., Chicago**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

INDIANAPOLIS.—The demand for the best grades of honey is good. Producers are offering fancy white comb honey at 12½; No. 1 white at 12; white-clover extracted, in five-gallon cans, at 7; very little demand for amber at any price. Many bee-keepers seem to be holding their honey for higher prices. Beeswax is steady at 28 cts. cash, or 30 in exchange for merchandise.
Sept. 21. WALTER S. POUDER, Indianapolis.

DENVER.—We quote No. 1 white comb honey, per case of 24 sections, $3.15; No. 1 light amber, $3.00; No. 2, $2.85; strained and amber extracted, 6¾ to 7¾; light amber, 7½ to 8¼; white extracted, 8½. We pay 24 cents for clean yellow beeswax delivered here. Owing to a large supply of fresh fruit in this section the demand for comb honey is light at present.
THE COLORADO HONEY PRODUCERS' ASS'N.,
Sept. 19. Denver, Col.

CINCINNATI.—The marked decrease in the demand and consumption of honey this season is not due to an oversupply; but after careful investigation of the conditions we find there are two causes. In the first place there was more white comb honey shipped last year from the West into the Eastern markets than could be sold, and even to-day there are stacks of it still remaining in every market of any importance. On the other hand, the consuming trade has not wanted as much comb honey as was supposed would be the case, and for these reasons that article is going begging. Fancy and No. 1 comb honey are selling at 12½ to 16. Lower grades must be sold at a sacrifice. The extracted-honey market is experiencing the same conditions, and is undergoing the same ordeal. Quote amber honey at from 5½ to 7 in barrels, according to the quality and quantity purchased. White clover is selling at from 7½ to 9½, according to the quantity.

For beeswax, from good to choice, we are paying 27 cts. delivered here. This must be free from dirt.
Cincinnati, O., Sept. 17, 1908. THE FRED W. MUTH CO.

SCHENECTADY.—New crop is coming forward rather slowly, and quality is hardly up to the standard. Buckwheat is a short crop in this locality. We quote fancy white, 15 to 16; No. 1, 13 to 14; mixed and buckwheat, 11 to 12; extracted, light, in kegs and 60-lb. cans, 7 to 9; dark, 6½ to 7½. Beeswax, 28 to 30. CHAS. MCCULLOCH,
Sept. 18. Schenectady, N. Y.

BUFFALO.—Demand for honey here is just fair, not what it ought to be. Prices are not too high; hard times is the reason, I think. I look for dull low prices all the season. No. 1 to fancy white comb, 14 to 15; No. 2, 10 to 12; extracted, white, 6½ to 7½; dark, 6 to 6½. Beeswax, 28 to 30. Tumbler honey, 85c to $1.00 per doz. W. C. TOWNSEND,
Sept. 19. Buffalo, N. Y.

NEW YORK.—Receipts of comb honey are now quite heavy, from New York and Pennsylvania mainly. Demand is fairly good, especially for No. 1 and fancy white; also for fancy buckwheat. Lower grades are not in as good demand. We quote fancy white, 15; No. 1, 13 to 14; No. 2, 12; dark, 10 to 11. For extracted honey the demand is improving, especially for Californian, which, on account of the short crop, is ruling rather high in price. We quote California white sage at 9; light amber, 8; amber, 7; white clover, 8 to 8½; light amber, 7 to 7½; dark, 6½. Very little doing in beeswax; good supply, and market easy at 28 to 29. HILDRETH & SEGELKEN,
Sept. 21. New York.

PHILADELPHIA.—This market is well supplied with local honey, the fall crop having been gathered at this time. It is one of the largest we have had here for years. Outside of the Eastern States, later reports show the crop is much below the first reports. This condition makes our market very unsettled. We quote: Fancy comb honey, 15 to 16; No. 1, 14 to 15; amber, 12 to 13; extracted, white, 7 to 8; amber, 6 to 7. Beeswax, 28.
Sept. 21. WM. A. SELSER,
Philadelphia, Pa.

TOLEDO.—Extra fancy Ohio and Michigan clover honey, in no-drip shipping-cases, brings 15 to 16 cts.; No. 1, 14½ to 15½; No. 2, 14. Extracted, in barrels is bringing from 7 to 7½; cans the same. Beeswax, 28 to 30. These are our selling prices. The demand for honey has not been very brisk, owing to the large fruit crop, and most dealers seem to have carried over quite a quantity of honey from last year. However, we look for a better demand within the next 60 days. Prices will be considerably lower than last year. Arrivals of new honey exceed the demand. THE GRIGGS BROS. & NICHOLS CO.,
Sept. 18. Toledo, O.

COLUMBUS.—The movement of honey has not been up to the usual volume which takes place at this time of the year, and we presume it is due to two causes—in the first place, the supplies throughout Ohio this season were unusually large, and the great part of our grocery trade received honey from local growers. In the second place, quite a good deal of western honey was carried over by the retail merchants, and it has made them rather backward about buying. Our market to-day is as follows: Fancy white, 15; No. 1 white, 14; No. 2 white, 12; amber, 10.
Sept. 21. EVANS & TURNER,
Columbus, O.

PITTSBURG.—At this writing very little honey is in the hands of the jobber; but several large shipments are moving this way. Demand is good, prices firm. Jobbers are getting from the retail merchants $4.00 per case of 24-sections, fancy and No. 1; white clover or alfalfa, $3.75, jobbing, buckwheat, $3 75; water-white extracted in 60-lb. cans, 8½ to 10; amber, 7 to 8½.
Sept. 18. J. A. W.

BOSTON.—We quote fancy white comb honey at 16 to 17; No. 1, 15 to 16; extracted, white, 10; light amber, 8; amber, 7; in barrels, 6 to 7. Beeswax, 30. BLAKE-LEE CO.,
Sept. 20. Boston, Mass.

*Continued on page 1167.*

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY
Purchasing Department,
Washington Blvd. & Morgan St.
CHICAGO, ILL.

If your honey crop is short, and you need something fine to supply your customers, write to us, for we have it.

FINEST Water-white Mountain-sage Honey (extracted).

BEST White-clover Honey (extracted).

WATER-WHITE Sweet-clover Honey (extracted).

All in crates of two 60-lb. cans each.
Also FANCY COMB HONEY.

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The Busy Bee-Men
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of all kinds.

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523 Monroe St. .. Toledo, Ohio

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# HONEY

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Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT CO., Medina, Ohio.
J. T. CALVERT, Business Manager.

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**THE A. I. ROOT COMPANY, MEDINA, O.**

# Reasons for the Price
## OF MY
# Raspberry Honey.

I ask ten cents a pound for my raspberry honey. This is slightly above the market price, but there are reasons.

In the first place, very little raspberry honey is produced. It is a novelty—something out of the ordinary—like orange-blossom honey for instance.

In addition, it is of very superior quality; so much so that it was awarded the gold medal, in competition with other honeys, at the Jamestown Exposition. It has a flavor all its own—a flavor that smacks of the wild red raspberry of the woods.

Another most important reason why I should get a good price for my honey is the manner in which it is produced. It is left on the hives for weeks after it is sealed over, and thus acquires that finish, that smooth, oily richness, that thick, rich deliciousness that can be obtained in no other way.

It costs more to produce such honey, there is not so much of it, and it is worth more than the ordinary honey; just as big North ern Spy apples, streaked with crimson and filled with juicy spici ness, are worth more than ordinary fruit.

As a finishing touch the honey is put up in bright new 60-lb. tin cans, securely boxed, and the boxes bound with iron so that they will bear shipment; in fact, I will guarantee safe arrival in perfect condition.

For a single 60-lb. can the price is $6.25; for two cans in a case (120 pounds) the price is $12.00 a case, regardless of the number of cases that are taken.

If you are not acquainted with this honey, send me ten cents and I'll mail you a generous sample, and the ten cents may ap ply on the first order that you send.

**W. Z HUTCHINSON, Flint, Mich.**



# HONEY-JARS
## from
## New York City

We consider the No. 25 jar with solid metal cap and waxed liner the best jar made for honey.

Gross crates . . . . $5.00; 5 gross, $4.75 per gross.
12-oz. screw-cap jar . . 4.50; 2 gross, 8.25 per gross.
1-lb. sq. jar with cork . 5.00;
Italian queen . . . . 1.00. Catalog free.

Apiaries, Glen Cove, L. I.

**I. J. STRINGHAM 105 Park Place, New York**


*Honey Market continued from page 1164.*

KANSAS CITY.—The demand for honey is quite brisk at present, although the supply is somewhat limited as yet. Strictly No. 1 white comb in 24-section cases is selling at $3.25 per case; amber comb, $3.00; extracted, 8 cts. per lb.

Sept. 18. C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

CINCINNATI.—The demand for honey has improved considerably, but no high prices have as yet been obtained. We quote No. 1 white comb honey at 14; off grades are not wanted at any price. White-clover extracted honey sells at 8 to 8½; amber, in barrels, 5½ to 6. Beeswax is selling slowly at 31.

Sept. 18. C. H. W. WEBER, Cincinnati, O.

ST. LOUIS.—The receipts of new crop honey are very much in excess of the limited demand, especially comb honey, which rules very dull. Fancy white comb honey is freely offered at 12½, with very few takers. Choice amber comb honey is quotable at 11 to 12. There is absolutely no market for broken or leaking comb honey. Extracted honey is also a slow seller. The choicest amber honey is quotable at 5½ to 6 cts. in barrels, and 6½ to 7 in 5-gallon cans. Dark and inferior grades rule at considerably less. R. HARTMANN PRODUCE CO.,

Sept. 18. St. Louis, Mo.

SAN FRANCISCO.—The greater part of the honey crop has been shipped, and only scattering lots are now arriving. The white and water-white grades are in good demand and there is a fair demand for the lower grades. Producers are receiving the same prices as before, and the following prices rule in the market: Water-white comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5¾.—*Pacific Rural Press*, Sept. 19.

LIVERPOOL.—The honey market continues steady with a good demand for lower qualities. We quote: Chilean, 4½ to 6 cts.; Peruvian, 3½ to 4½; California, 8½ to 11; Jamaican, 4½ to 5; Haitian, 5 to 7. Beeswax continues firm—African, 29; American, 30 to 34; West Indies, 29 to 33; Chilean, 30 to 36; Peruvian, 34 to 35; Jamaican, 34 to 35. TAYLOR & CO.,

Sept. 20. 7 Tithebarn St.

*The A. I. Root Co., Medina, O.:*—Some say the locality is the prime requisite in bee-keeping; others say the hive; others, the man; but what about the smoker? It plays a mighty important part in modern bee-keeping. It is needed at every hive and at almost every movement.

Your Jumbo brass smoker is certainly the best I have used in twenty-seven years, and my help grab it first out of three makes; and as the price of a good smoker is soon gained in time and comfort, send me at once two more. R. L. HOLTERMANN.

Brantford, Ont., Can., July 10, 1908.

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THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

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**Established 1889**

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*By the Bee Crank*

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As if the distinction of having the bee-supply house that holds the record for the most perfect and prompt delivery service was not enough!

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I have not permitted baseball nor any other attraction to interfere with my specialty of prompt shipments. The following letter is not unlike many others that I receive. Read what the other man says—note how it agrees with what I say:

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Indianapolis, Ind.
*Dear Sir:*—The bee-supplies that I ordered on the 29th reached me on the 2d. I am much pleased with the goods, and you surely do get them out promptly. You may count me as one of your customers as long as I am in need of supplies.
Yours very truly, JOHN DAVIS.

Root's goods at Root's prices, Pouder service included. You may order from the Root catalog if you like, but you should have mine. Ask for it.

Upon all cash orders received during October I will allow a special discount of 6 per cent. It will pay you to anticipate your wants, even if you can not use the goods for several months. At that your money will earn good interest.

Send me your beeswax. I pay highest price, cash or trade, and make settlements as promptly as I make my shipments.

# Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

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THE LORE OF THE HONEY-BEE.

The above is a new book on the life and work of the bees. It is on the same general plan as Maurice Mæterlinck's masterpiece, "*The Life of the Bee*," but is far more accurate. The author, Mr. Tickner Edwardes, is not only accurately informed on practical bee-keeping, but is well up on the science of the honey-bee. He is not so facile a writer as our modern Shakespeare (Mæterlinck) yet he is a gifted author, and writes with fluency, ease, and fine diction. THE LORE OF THE HONEY-BEE is one of those books the bee-keeper will buy to read through carefully during the long winter evenings when his pets are snugly asleep in the cellar. After he has read it through he will commence right over again, as it makes good reading—for a bee-keeper. It contains a number of beautifully executed engravings, some of great interest. One is a fac-simile of Butler's "Bees Madrigall" copied from the edition of 1623, giving both words and music. The half-tone work is excellently well done, and the typography is in keeping with it.

Some of the ideas advanced by the author are calculated to cause the average bee-keeper to sit up and take notice. It is evident the bee has been well studied by the author, and that the striking features of bee life are familiar to him, but mean something different from what the ordinary bee-keeper believes to be the truth. This is all done in an easy, graceful manner that is sure to win many readers.

The work is dedicated to his friend, Mr. T. W. Cowan, chairman of the British Bee-keepers' Association. The publishers are Methuen & Co., of London, England. For price see advertisement elsewhere in this journal.

MAKING THE HENS LAY WINTER EGGS.

It is now well known where the money is in the poultry business. It is not in producing eggs in summer when poultry-fruit is cheap, neither is it in producing early chickens. Where the expert shows his skill is in producing eggs when they are worth 50 or 60 cts. a dozen, which, of course, is around Christmastide. There are no bugs, grasshoppers, grubs, and other insect food to be obtained then so that, perforce, we must find a cheap substitute. There is not enough protein (albumen) in two bushels of corn to produce a dozen eggs. Fresh-cut raw bone will do the business for us. In fact, hens can be made to lay more eggs in winter than in summer. Mr. H. B. Humphrey, manufacturer of the Open-hopper bone-cutter bearing his name, says he can do it and we believe it, judging from what others have said about green-cut bone. He cites an instance of a man owning 70 hens that averaged 40 to 50 eggs a day during December, January, and February, getting occasionally 58 eggs. Such a man is a successful poultryman.

If you desire more information relative to these helpful bone-cutters, write to the manufacturer, H. B. Humphrey, Joliet, Ill.

SUBURBAN LIFE.

One of the handsomest magazines published in this or any other country is *Suburban Life*. Recently it has taken on a new lease of life, and in time will probably lead all other magazines of its kind, though it is, comparatively speaking, very young in years. Its publishers are among the most enterprising firms in America, who will not hesitate to spend money to make it the recognized leader in the field it occupies. These fancy country magazines are doing a great deal to make farming popular among the young people by showing them the beautiful homes other folks have in the country, and also how their own farm can be improved to any extent by the judicious expenditure of brains, time, and money. Many farmer boys will not believe farm life can be made so attractive until they see the splendid pictures which adorn the pages of *Suburban Life*. The girls are delighted to see the pictures of the interior furnishings of the country homes belonging to others more fortunately situated in some respects. From these pictures young ladies gain ideas which would be difficult for them to obtain in any other manner. Thousands of readers have put these ideas into practical use, and many an American farm home is the happier and brighter for it. By proper attention to landscape gardening, 90 per cent of our farm-houses can be set off to great advantage. At present they look too plain and uninviting. Look at the question in this light, and you will decide that a subscription to *Suburban Life* is a cheap investment.

# ONLY FOUR AGRICULTURAL PAPERS ON THIS LIST.

(GLEANINGS IN BEE CULTURE ONE OF THE FOUR.)
(The Little Magazine with a Big Field.)

If more evidence were needed than we have already given on these pages the following letter should be conclusive. When a large concern like the Potato Implement Co., and a large agency such as the Long-Critchfield Corporation, select GLEANINGS for page advertisements they do so because they *know* it pays well.

## LONG-CRITCHFIELD CORPORATION

The Most Complete Advertising Service in America

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CHICAGO January 7, 1908.

Gleanings in Bee Culture,
Medina, Ohio.

Gentlemen:-

Please find attached, an order for the advertising of the Potato Implement Company, Traverse City, Michigan.

We trust you will give this advertising your hearty co-operation as there are only four agricultural papers in the United States that are getting this advertisement at the present time.

For the page advertisement which is scheduled to appear in the March 1st issue, we must urgently request that you insert this ad opposite a solid page of reading matter, and please give the 56 line ad the best possible position.

Thanking you in advance, we are

Yours very truly,
Long-Critchfield Corporation.
R. C. Goldstein

DCG-8

The cost of a page advertisement is only $50.00. A half-inch space costs $1.75. If suitable space is selected and good copy furnished the results are certain. For particulars address

**ADVERTISING DEPARTMENT GLEANINGS IN BEE CULTURE, MEDINA, OHIO**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**
**Dubois, .. Pennsylvania**

# Odds and Ends Sale on Exhibition Goods While They Last

If you will send us a list of goods that you could use right away, or in the near future, we will quote you prices on such exhibition goods as we may have in stock. Don't wait, because this sale will be over in 30 days

**Blanke & Hauk Supply Co.**
**ST. LOUIS**

THE A. I. ROOT CO. MEDINA OHIO U.S.A.

Standard the World Over

**Traps**

*Syracuse The A. I. Root Co. New York*

**Veils**

*Syracuse The A. I. Root Co. New York*

**Hives**
**Frames**
**Smokers**
**Sections**
**Foundation**
**Wax-extractors**
**Honey-extractors**
**Shipping-cases**
**Bee-appliances**

# BIENENZÜCHTER!

**von Deutschland, Schweiz, Oesterreich, u. s. w., senden Sie fuer unsere 1907 Preisliste von**

Bienenwohnungen, Honigschleudern, Bienenschleiern, Futterapparaten, Rauchapparaten, Handschuhen, Walzwerken, Porter's Bienenflucht, Fluglochschiebern für Kasten, Königinenabsperrgittern, Weiselkäfigen, Schwarmfangbeuteln, Entdecklungsmessern, Dampfwachsschmelzern, Wabenenentdecklungsapparaten, und allen anderen Bienengerätschaften der

**A. I. ROOT COMPANY**
**Grösste Fabrik ihres gleichen in der Welt**

**EMILE BONDONNEAU**
General Vertreter für Europa und Kolonien
**142 Faubourg Saint Denis, Paris, 10me.**

## "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

*Cash or goods for wax at all times.*

**George E. Hilton**
**Fremont, . . Michigan**

## WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

A FULL LINE OF

## Shipping-cases,

**Honey-extractors,**

**and all other seasonable goods now on hand.**

We are also prepared to supply goods for next season's use at special discounts.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

## 6%

Cash Discount for October orders for "Root Quality' Bee-supplies for next season's use.

Beeswax wanted for cash or exchange

**M. H. Hunt & Son**
Lansing, Mich.

# "The Information I Got From The Farm Journal Helped Me To Make $137.00 In Clear Cash"

*Mrs. Ollie C. Krieder, Jamestown, Pa.*

*"I can make $50.00 a year more with the help of the Farm Journal. Would gladly pay $5.00 a year rather than do without it."—M. N. S., Haines Cr.*

*"The 'Farmers Problems' of the last few months have been worth more than the subscription price"—Hiram Entrekin, Ohiowa, Neb.*

These are only a few of the thousands who take the trouble to tell us how they have profited through the Farm Journal.

No matter whether you live on a farm large or small—or whether you live in town and only keep a few bees, or a cow, or a horse, or care for a small garden, you will find the Farm Journal filled with timely suggestions for making your work more pleasant and profitable.

No other paper helps the farmer or villager with such valuable information and suggestions, based on facts and experience and not on theory, as does the Farm Journal.

The October issue will contain helpful articles on the following subjects, that will show our readers how to make more money.

Poultry, Pigeons, Hogs, Horses, Cows, Bees, Flowers and Vegetables. But these are only a few of the subjects handled in this October issue.

"High Farming at Elmwood" by Jacob Biggle—"How to Keep Well", "Some Troublesome Insects and How to Deal With Them", "Farm Problems and How to Solve Them", are a few more articles to be found in the October issue, any one of which is worth more than the price of a single copy.

Remember all this is in a single issue and each issue seems better than the last. Every article goes straight to the point, telling you what you should know.

The Farm Journal now has over 500,000 subscribers, the greatest circulation of any farm paper in the world.

We want subscriptions for 5 years. The price of a five-year subscription is NOW seventy-five cents. This offer is good until January 1, 1909, after which the price will be one dollar.

If you subscribe now we will date your subscription from Jan. 1, 1909 and you will receive the October, November and December issues FREE. For $1.00 you can secure a five year subscription and any one volume of the Biggle Farm Library.

## You Need this Handy Farm Library

These eleven books, each an authority in its own line, are wonderful storehouses of advice, and information. Farming in any of its branches, with their aid is simplified. They are from the pen of Jacob Biggle, for the past 30 years a contributor to the Farm Journal. His long personal experience in farming, stock and poultry raising and fruit growing, supplemented with the best counsel and help of other specialists, has gone into these Books. They are like the Farm Journal itself, concise, practical, modern, comprehensive and handsome.

PROFUSELY ILLUSTRATED, several with fine colored plates.

**The Garden Book** tells how the author made money in the business—a remarkable record.

**The Orchard Book** is crowded with new fruit facts and fine illustrations. By an expert.

**The Berry Book** is a handbook of practical pointers by famous berry growers. Fine colored plates.

**The Horse Book** covers the subject thoroughly, health and diseases, history, training, care. 55,000 copies sold.

**The Poultry Book** is tremendously popular—by far the best handbook for the farmer's or villager's flock. 6th edition.

**The Cow Book, Swine Book, Health Book, Pet Book and Sheep Book** are also condensed encyclopedias of information. Each Book is a handy size to slip into the pocket and consult during the day's work. They cost only 50c per volume, postpaid, $5.00 for set of ten.

## Let Us Send You a Biggle Book on Approval

Don't send us any money. Just fill out the coupon in the lower right hand corner stating which book you want and we will send it with a sample copy of the Farm Journal for your approval. If after you have looked them over carefully you don't honestly feel that a five years' subscription to the Farm Journal and one of these Biggle books is the biggest value you ever saw for *only one dollar*, send the book right back and we will return the postage you have spent.

*If you think it is a good offer*, send us *One Dollar*, keep the book and we will enter your subscription for the Farm Journal for five years.

Don't lose by putting it off. Your horse may get the colic. Maybe your hens are not laying as many eggs as they should. Perhaps you are going to buy some fruit trees and unless you have some reliable information on how to plant and care for them, they will fail to thrive. Then, dear reader, you will wish you had the Farm Journal and the Biggle books which will help you solve these and many other problems. Fill out the coupon and send it in today and in addition to sending you your choice of the Biggle books on approval—we will tell you how

**YOU CAN SECURE THE OTHER 9 BIGGLE BOOKS FREE!**

Cut out coupon here and send it in Today.

Pub. Farm Journal.

Please send me on approval your Biggle

.....Book

If satisfactory will send you $1.00 for the book and a 5 years' subscription to the Farm Journal, otherwise I will return the book inside of 10 days.

Name.....

Town.....

State.....

1003

**FARM JOURNAL**

1003 Race Street, Philadelphia, Pa.

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

H. H. ROOT, Assistant Editor
A. I. ROOT, Editor Home Department

E. R. ROOT, Editor

A. L. BOYDEN, Advertising Manager
J. T. CALVERT, Business Manager

VOL. XXXVI OCTOBER 1, 1908 NO. 19

## STRAY STRAWS

DR. C. C. MILLER

O. O. POPPLETON may be alone in using the Long-idea hive in this country, p. 1118, but he has plenty of company in Europe.

Mr. R. BEUHNE says that in California they have introduced the eucalypti that are rapid growers, but the slow growers are the best kind for honey.

W. K. M., p. 1117, says bees are better judges of sweets than we are, and we might as well cater to their prejudices. That's to the point. Now tell us what they have shown as to their prejudices.

SMALL PLOTS of grain give better yields than plots of several acres, and it is not easy to tell why, says A. I. Root, page 1144. Is it not just possible that plants, like folks, do better for having lots of air, and that the small plot has an advantage in this respect?

A. I. ROOT, do you ever have trouble breaking up sitting hens? Here's the way my brother-in-law does it: He brings the sitting hens up to our place, where they wander about the strange premises with no thought of sitting, and after a few days' visit they are taken back home, and are all right.

J. A. CRANE, referring to Straw, p. 799, says he removed queen from colony in the morning, found cells started about mid-afternoon, when he returned queen, putting all but one brood above excluder, as described page 757, and got six fine cells. Certainly that was small interference with the laying of the queen.

THAT PICTURE of the Ebrito apiary, p. 1130, makes me think I'd rather like something of the kind covered with Virginia creeper (*Ampelopsis quinquefolia*) or grapevine. For the north, with trellis running east and west, I suppose the north row of hives should be outside the trellis and the south rows somewhat toward the center. That would keep them more in the shade all day long than to have both rows square under the trellis.

MR. PRITCHARD'S plan of selecting larvæ for queen-rearing, page 1119, seems admirable. Let me add that, for the every-day honey-producer, there can hardly be any thing better than to let the bees do their own selecting, giving them newly built comb filled with eggs and young brood. At any rate, that plan works best "in this locality," and I've tried pretty thoroughly the other plans, although I don't think I selected as wisely as Mr. Pritchard.

YOU'RE RIGHT, Mr. Editor, in thinking that the plan of putting paper between hives when uniting colonies, as given by Wm. Beuglas, p. 1139, will work. I have used it lots of times in ordinary uniting, and gave the plan in print years ago—in GLEANINGS, I think. Just put a sheet of newspaper between the two stories, and the bees will do the rest. [Since you speak of it, we recall that this method of uniting colonies has been before exploited in these columns.—ED.]

F. H. CYRENIUS, p. 1135, advocates Oslerizing the old bees in the fall. The same thing was exploited considerably in the bee journals years ago—by Hosmer, wasn't it?—but nothing came of it. It is just possible that there may be some advantage in having the larger bulk of bees in the first part of winter, even if they do consume honey only to die before spring. [We shall be glad to hear from others as to whether it pays to carry the old bees through the fall and early winter.—ED.]

A QUEEN is made to lay eggs in cells covering an area as large as one's hand in perhaps an hour, on page 1119. That area will probably contain 500 cells on one side. To fill it in an hour means 12,000 eggs in 24 hours. The best layer ought hardly to be asked to lay more than 5000 eggs in that time. Yes, I have my opinion of any man who goes around picking at little things like that; but I thought some one would be sure to do it, and I'd save him the trouble of making himself disagreeable.

THE ADVICE given to that bee sister about sweet clover, p. 1145, is good, only she should be told that if the ground is soft the plants will all be dead in spring. I once sowed several rods with oats at the usual time of sowing oats. There was a beautiful stand, but the next spring not a plant was alive—every one heaved out. The ground should be *very hard*. It might be all right in soft ground if the ground was covered. Replying to one of her questions, if growth is started in fall, plants will bloom the following season.

AS TO SUGAR, I wish the discussion might continue till we know absolutely how much or how little difference there is between cane and beet for feeding bees, and then further till we know just how we may be sure we are getting cane, if cane is the better. For years the *British Bee Journal* has held most emphatically that cane sugar is the proper thing to feed bees, and beet sugar unfit. Is it not likely that it has good ground for its position? The sugar-beet industry has become an enormous affair, and I suspect most of our granulated sugar is made from beets. I know

that large dealers advertise, "We do not handle beet sugar," but I wish they'd tell us how they know they don't. [The United States neither produces nor consumes much beet sugar. Michigan is the only eastern State which cuts any figure. California, Utah, Idaho, and Colorado are large producers, but it is consumed there. We import little or none. Possibly about one-seventh of our consumption is beet sugar. England consumes vast quantities of beet sugar, more than any other country by far.—W. K. M.]

YE EDITOR wants me to tell why the bees gnawed away the splints in the combs pictured on p. 1127. If the splints were boiled in wax and used at such temperature as to be well coated, and then given to the bees at a time when they were building comb, I don't know why they should make such bad work. E. F. Atwater's plan of spooning wax over the splints may work, but I believe I'd rather paste over each splint a small strip of foundation. In that case there would be no need to wax the splints. [Do you think there is any real difference between boiling the splints in the hot wax or covering them over with a thick film of wax as described by Mr. Atwater? We should like to hear from the latter as to whether he has tried boiling the splints; and if so, whether it prevented the bees from gnawing them. Possibly your strain of bees, doctor, are not as much inclined to do this thing as some other strain.—ED.]

PARDON ME, friend A. I. Root, if I disagree with you when you object to having the stars and stripes floating over a brewery, page 1143. Why not, so long as the brewery is doing a legitimate business under the protection of that flag? On the whole, isn't it a good thing thus to proclaim that the United States government is especially interested in the brewery business? If we object to the proclamation of that fact, let's get rid of the fact. Come to think of it, we're steering pretty surely in that direction. One after another the States are going dry so rapidly that one can hardly keep track of them. See if you can tell offhand just how many. Well, there are 8—practically 9, for the election just held in Arkansas makes it morally certain that State-wide prohibition will be enacted at the meeting of legislature. Take good care of your health, Brother Root, so as to live until there shall no longer be a brewery or a brothel over which the American flag can wave.

# EDITORIAL

By E. R. ROOT.

### DEATH OF E. W. ALEXANDER.

IN our issue for Aug. 15 we announced that our correspondent, Mr. E. W. Alexander, of Delanson, N. Y., so well and favorably known to our readers, had an incurable disease, and that it was only a question of days when death would relieve his sufferings. We are now pained to announce that our friend passed away on Sept. 19. He had specially requested, before he died, that Dr. D. Everett Lyon, of Rye, N. Y., another of our correspondents, should preach his funeral sermon. Dr. Lyon knew Mr. Alexander very intimately, and has promised to furnish an obituary sketch, telling something about this large-hearted Christian man.

### SENDING THE SAME MATERIAL TO TWO BEE JOURNALS.

WE wish to protest most earnestly against the practice of some of our correspondents in sending precisely the same photos to two different publications at the same time. Perhaps the thought is that, if one of the papers does not accept, the other will. But a photo designed for publication should be regarded as so much original matter for one journal. Manuscript should likewise be given to only one publisher; and then, if he declines, the owner is at liberty to send it to some other publisher. If one publisher buys manuscript or photos in good faith he should have the exclusive use of them, and the seller has no moral right to accept money for them from some other publisher.

### QUARANTINE ON QUEENS TO HONOLULU.

HAVING heard that a quarantine has been placed on American queens to the Hawaiian Islands, we wrote Dr. E. F. Phillips, of the Bureau of Entomology, who has recently returned from the islands. We give his letter herewith.

*Dear Mr. Root:*—Among the numerous letters which I am attempting to clear up I find a letter from Mr. Gates to you under date of July 25, concerning the quarantine regulations at Honolulu. By this time you have probably heard from Mr. D. L. Van Dine concerning this matter, since he wrote me that you had requested information from him on the subject.

No satisfactory quarantine is yet in force, but there will probably be a good bee-disease law passed this winter. At present all queens introduced are reported to Mr. Van Dine, and he follows them up to see if any disease breaks out. While I was over there I was asked to make recommendations for a satisfactory disease law, and a quarantine was one of those recommendations. Careless queen importation should not be allowed in a country as free from disease as Hawaii is. Then, too, most imported queens are sent to small bee-keepers, who naturally are not competent to diagnose disease. The big men have satisfactory stock, or if they do import they would take care of what they got.

Washington, D. C., Sept. 19. E. F. PHILLIPS,
In Charge of Apiculture.

We have written Mr. Van Dine, but as yet have not heard from him. In view of the circumstances it might be best for breeders of queens to Hawaii to wait until something more definite is learned.

### THE BIG NATIONAL CONVENTION AT DETROIT, OCT. 13 TO 15.

THE convention of the National Bee-keepers' Association, that is to be held in Detroit, in the pavilion of the Wayne Hotel, Oct. 13 to 15, promises to be one of the biggest and most enthusiastic meetings of bee-keepers ever held in the history of the Association. We have had reports from bee-keepers all over the country who expect to be present. The editors of this journal intend to be on hand.

Detroit has always been an ideal convention city, as it is right in the heart of the best bee country, taking in Canada and some of the best sections of the United States. Rates by water are always very low, and hence it is possible for bee-keepers to get to this convention at a low rate, and comfortably. Then, moreover, Detroit has connections by trolley in every direction.

The program is given elsewhere under head of Convention Notices (see page 1225). It will be observed that there are some new and attractive features. Secretary Hutchinson has spent a great amount of time in working it up. Every thing at the present time goes to show that this will be a great convention—something that no bee-keeper within two or three hundred miles of Detroit can afford to miss.

The convention itself is to be held in the Sun Palace just back of the Wayne Hotel, and on the water's edge, away from street noises and dust. It has very often happened that our National conventions have been held in halls where it was difficult to hear the speaker, owing to the traffic on the streets below. But this year we shall have every thing quiet by ourselves.

The rates at the Wayne Hotel are $2.50 a day, two bee-keepers in a room, provided 150 register there. There are other hotels near by, with rates ranging from $1.25 to $2.00 a day.

Remember the date, Oct. 13 to 15, at Detroit.

---

### WHEN HONEY IS QUOTED ON THE MARKET, OR IS SOLD AT A DEFINITE FIGURE, DOES THAT FIGURE INCLUDE THE WEIGHT OF THE SHIPPING-CASE AT THE PRICE PER POUND?

A SMALL producer inquires, when he sells a case of sections at, say, 15 cents a pound, whether that price includes the shipping-case. In reply we would say no—at least that is the rule here. Again he asks, "If a case weighs 24 pounds does that mean the 24 sections alone weigh that, or that the case, sections, and all represent that weight?" It is a universal rule that the case is not included. Where there are very large shipments, a few representative cases may be weighed up, and an average struck of the weight of a single case. The whole shipment is then weighed, when the tariff per case, as shown by the aforesaid average, is eliminated. In some instances, where the parties are very particular, every case is weighed, and the sum of the total weights of the empty cases is extracted from the total gross weight. As a general thing, the buyer will find net weight and tare showing in two separate sets of figures on the case. If the producer is one in whom he has confidence he will be likely to accept the net weights, and render payment accordingly. If, on the other hand, the producer is a new man he will weigh up each case and its contents separately. If he finds that the net weight and the tare agree with the figures on the shipping-cases taken at random, he will likely accept the figures throughout.

In the Colorado quotations it is the rule to quote honey by the case, say $3.00 or $3.50, depending on the market. Each case is supposed to hold approximately a certain weight of honey —that is, all the cases in the shipment must average up such weight. But it is understood that the weight of the case is not included in the figures on the case of honey. See Colorado grading-rules on our honey-market page.

It very often happens, after the honey has been through a freight shipment, there are some breakages and leakages. The honey soaks into the wood and makes the case weigh a little more than when it starts. This must all be taken into consideration when accepting the net weight and tare of the producer.

### HONEY MARKET AND PRICES; THE FOLLY OF SELLING TOO LATE.

WE made a special effort, as our readers will see by consulting the Honey Column in this issue, to get complete reports from all the big markets in the United States. They should receive the careful analysis of every producer, not only that he may determine *where* he can do best with his honey, but that he may also seek to *prevent* some conditions that have contributed to a weak market in some sections of the country.

We observe that Boston and San Francisco are offering the highest prices. It will be remembered that the crop was a failure in Maine, and light in many portions of the New England States. This will account for the Boston market being up. Similarly at San Francisco prices rule strong because the main honey-producing portions of California gave a light yield.

The market seems to be weakest in the Central Northern States. Two or three of the honey firms account for this on the ground that a good deal of Western honey was shipped in last winter at just about the close of the selling season. About this time the panic came on, and this honey was left in the hands of the dealers. It began to candy, and sales, of course, began to drag. A large portion of it was left at the time the new crop of Eastern clover came on in July and August; and much is still in those markets. This, together with a very heavy crop of white honey, was a strong factor in weakening the market in the Northern Central States. One dealer at Cincinnati reports a marked decrease in demand, while the other speaks of an improvement at that point. Cincinnati is a great market. It has low freights on account of transportation by water, and in our judgment Southern honey, which seems to gravitate easily to the Queen City, has a tendency to affect prices on white honey.

But Pittsburg seems to be an exception. Not being able to get any definite reports we sent our honey-man to look up the situation. He furnishes a statement for the Pittsburg market, signed J. A. W. Pittsburg is in the center of a large number of middle-class people—artisans and laborers. It is these people who consume honey more largely than those who are able to buy more expensive delicacies.

Another interesting feature is that the St. Louis market is weak while that of Kansas City seems quite brisk. Conditions around St. Louis are practically the same as those that apply to Cincinnati. The Philadelphia and New York markets, especially the former, seem to be fairly good. The former reports that the actual crop of honey secured was not as large as that indicated by the first reports.

Compared with last season, the Colorado market is a little weak, owing, no doubt, to the large crop of Eastern honey. This would make a shipment of alfalfa honey eastward unprofitable, even if Colorado had good crops, which it did not have. But it is expected that the Colorado market will improve, after the fruit has been disposed of.

There is one important fact on which we wish to place special emphasis—namely, the folly of making large shipments of honey to any market after the holidays, or, rather we should say, of

selling too late There is no reason in the world why honey could not be sold in October, November, and early in December. A year ago, for example, all the markets of the East were bare of comb honey. Dealers could not get it for love nor money, in spite of repeated calls for it; but along about the holidays some of the Western producers began to send in their cars of honey, and by the time they reached the East the panic came on, and prices went to the bad. There can be no question but that those late shipments of Western honey last winter are largely responsible for the weakened market in the Central Northern States, where most of this honey was dumped. It was so cold that some of it candied on the way, and then, too, it was too cold for the dealer to ship again, even if there had been a demand for it. While the producers possibly got their money, the majority of them this year will have to take a cent or two less per pound for their honey and for their folly. If they had shipped this honey a month earlier, when they could have done it, and when there was a strong demand for it, it would have sold almost instantly, and the result would have been a clean market ready for fresh goods.

Except, perhaps, in the Central States we should say that the market was stable. Producers would do well not to hold their honey too long. We would especially urge this this year, that the honey be sold around home to grocers and consumers direct. Better peddle some of it, bottle it —do any thing rather than to send to a weak market and make it weaker.

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### TIMELY HINTS ON FALL UNITING.

A SUBSCRIBER wishes us to give full particulars of how to unite weak colonies at this time of the year. As we have had other inquiries of like nature we will take a little space to cover the ground.

If we put two separate lots of bees together that were located on stands remote from each other in the same yard, there will be more or less of returning bees to the old stand. These will be practically the old ones. As they will die along about midwinter, their loss may not be considered very great. But some, and perhaps all, of these old bees may be made to stay in their new quarters. If they be put back a couple of times, the great majority of them will stay put; but this involves considerable labor.

In view of the fact that bees will go back to their old stands, Mr. Doolittle has advised uniting in the brood form early in September. This will leave the hive or the stand to be vacated in late fall with a few old bees. These may be allowed to die, for it may be said they will not be worth much to the strength of the colony.

A very good way to unite, and avoid all loss of returning, is to do so at the very time of putting them in the cellar. For example, A and B are both too weak to winter outdoors. We will place the two together in one hive, making a brood-nest out of the best combs selected from the two hives, leaving the other combs for reserve feeding in the spring. As soon as the two families are placed in one hive they should be put in the cellar immediately, and left there till spring.

Another way to unite without bees returning is to take two weak colonies, one from one outyard and the other from another, and put them together at either one of the outyards, or at the home yard. There will be, of course, no returning; for when bees are taken away from their usual environments for, say, a radius of a mile flight, they will stay where they are put.

But suppose there is no outyard, and it is desired that there be no returning. One may shake into an empty box, or, better, a box having wire-cloth sides, bees from, say, three or four nuclei, and then put the box down cellar. The more different lots of bees one can get in the mix-up, the better. After they have been down cellar for 24 hours, they may be put anywhere on a permanent stand, and there will be very few of them that will go back. But this again involves considerable work.

Thus far we have said nothing about the queens and the possible fighting on the part of the united bees. As to the queens, if the apiarist is not particular the bees will take care of that, leaving but one queen. We said the *bees;* for we do not know whether the bees do the eliminating or the queens fight it out, leaving the victor the mother of the colony. But certain it is, nature seems to take care of it if the apiarist does not take a hand in it.

But suppose there is a choice of queens (and there usually is). He will then kill the least desirable one and introduce the other in an introducing-cage. It may not be necessary to cage; but as a matter of precaution we would advise it.

The queen problem will be nicely taken care of if one of the lots of bees is queenless and the other has a queen. In that case, put the separate sets of combs with the bees together; and if there be no fighting, the queen will be accepted. Another good plan is to put one family up stairs and the other below. But do not mingle the combs at the time of uniting.

But how about the bees fighting when put together? This depends much on the season of the year, the strain of bees, or whether they are well supplied with stores. With ordinary gentle Italians there will be little or no fighting in uniting. But if both strains be hybrids, Cyprians, or other cross strains, there will probably be some trouble; in such cases, feed before uniting. We had two lots of bees united that were entirely annihilated by one fighting the other. It is then always advisable to use smoke. If the two families to be united are separated by a wire-cloth screen for a day or two, there will probably be no battle; but when the bees get to stinging each other to death, the only thing to do is to use smoke, sometimes putting a little tobacco in the smoker.

If the uniting be deferred until quite cool weather there is much less trouble from fighting than if the process takes place early in September.

Where one is running for queen-rearing, and he has reached the close of the season with a lot of weak colonies, it is well to anticipate the work of uniting by putting the hives in pairs. All that is necessary then is to take away one of the hives; and after that, put both lots of bees in one. The hive that contains the two united forces is placed about half way between where the hives formerly stood. This will then catch the flying bees of both hives. If the hives be placed in groups of three, the three families are all placed in the center hive when the other two are removed entirely.

# GLEANINGS FROM THE PACIFIC COAST

By Prof. A. J. Cook.

### POULTRY AND BEES.

There are few inquiries that come to the experienced bee-keeper more frequently than this: "What other occupation can one combine profitably with that of bee-keeping?" While the concentration of effort is wise in all our plans, work, and efforts, and while the specialist is most likely to make a shining success of his work, yet in case of bee-keeping, with its numerous off-years, it is wise to find some supplemental pursuit that will enable one to keep the pocketbook occupied in these same off-years. Is not poultry culture the one best suited to this need of all our rural pursuits? If one has a special leaning toward fruit-growing, then that may well be considered; but poultry culture is interesting, profitable, and there is always sure to be a demand for the product of the chicken-fancier. The same habits of punctuality, alertness, push, that make the successful bee-keeper are just what are demanded to win success in the care and management of poultry. I have been successful with both bees and poultry, and I am persuaded that no other line of work will prove better suited to the average bee-keeper than the care of poultry.

### AN UP-TO-DATE POULTRY-BOOK.

The above is suggested by the fresh reading of Brigham's Progressive Poultry Culture, which is just from the press. It is published by the Torch Press, Cedar Rapids, Iowa. It is octavo, 293 pages, and thoroughly illustrated. The price is $1.50. The writer is not only an expert with poultry, but has a thorough college education, and so has breadth of view, and is doubly well prepared to give his readers the very best that is known regarding this interesting pursuit. He shows his wisdom by suggesting that a thorough college education is desirable in any walk of life, and so the one who is to breed and rear fowls will succeed better if he is thoroughly versed in the several lines of study required in our best colleges.

I am sure that Mr. Brigham is correct in this position. Were I a ditcher I should wish the best education, as that would enable me to dig better ditches; but, more, I should see more in the digging than the ditch. I believe that the great advance just before us is the more general education of the masses. This will tend toward equality; and the more that people are alike in opportunity and ability, the more of fellowship and happiness will be secured.

This volume is by a thorough scientist, and so all the instruction and suggestion is scientific. The author, as a teacher in one of the leading agricultural colleges, is the better prepared to treat the several questions in a scientific manner.

Such questions as care, management, houses, runs, diseases, vermin, food, and breeds are thoroughly and plainly discussed. The author has no pet breed to thrust before his readers, but gives the merits of the several breeds, and leaves the reader to decide which it shall be. There are good illustrations of the several leading breeds, with the merits of each judiciously portrayed. No experienced fancier can read what is said about roup without feeling that he is receiving advice from a real authority. What pleases me very much is the admirable index, as one is able to find at once just what he may need in any emergency. I am sure that any one who wishes to add to his pursuit of bee-keeping that of chicken-raising, or any one who wishes the latest and best in breeding and caring for fowls, will make no mistake in securing and studying this latest book on the subject.

### ROOM AT THE TOP.

I heard a good amendment to the above the other day. There is always room at the top, and the elevator is now running. It is absolutely true that there is always good picking at the top. The crying need of our time is for men of thorough preparation—men who can do things. To be able to do a thing a little better than any one else gives one wonderful independence; but to acquire this proud position requires the hardest of effort. I know a young man who was without means fifteen years ago, when I came here. He is now worth near or quite half a million. The whole secret of the matter is, that he has spared no effort to do the very best. He had a great responsibility placed upon him, and he shouldered it and worked so diligently and thoughtfully that every move was in the line of success. He soon was indispensable; and lest the great corporation that employed him might lose his invaluable care and service he was given a large share of the business on condition that he would stick by for a series of years. He has push, acumen, and integrity. No wonder he has pushed rapidly to the top. That is a trio that will land any one possessing them at the very front. We have many students who are paying their own way entirely in the college. Some of these have done more than pay all their expenses, and yet have led in their classes. It requires no very great foresight to see where these young people will bring up. I wish to add that, in more than one case, these parties are ladies. Does it not make one proud of his kind and country to know that a girl all unaided will reach a first place in college, graduating in the lead of her class, and that our great country makes such achievement possible?

### PEAR-BLIGHT, ONCE MORE.

Our readers will remember that pear-blight a few years ago broke out in the orchards of Central and Northern California, and worked havoc. It will also be remembered that serious complaint was made regarding the bees and the part they were taking in this mischief. Gleanings urged rightly, that, while bees did aid in spreading this dread disease, they were in no wise necessary to the dispersion, and that without bees the havoc would be as great. The disease ran riot, and the bees remained undisturbed. I am glad to report that the malady is much less this year than on previous years. The one remedy that has been applied with more or less thoroughness is severe pruning of all blighted branches, cutting well back from the wilt, and making free use of germicides as the cutting was being done. The

lessening of the disease this year can not be wholly explained by the application of these remedial measures, but it would seem that either the plague had run its course or else some enemy had seized hold of the blight-germs and was destroying them. Let us hope that this last is the case, and wish all success to the blight-killer. Loquats a few years ago were killed about here by something very much like pear-blight, but now are sound, vigorous, and healthy. It will not be the first time that blights have seemed to die out without any action on the part of man to destroy them.

# NOTES FROM CANADA

By R. F. Holtermann.

### SECTIONAL CASES FOR WINTER AND SPRING.

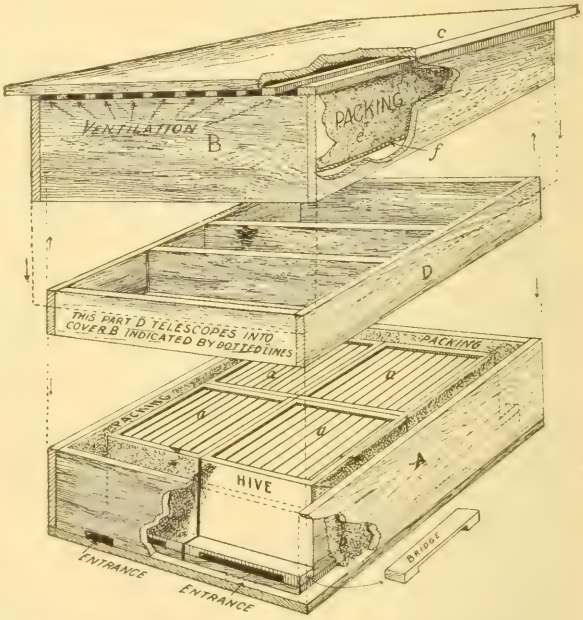
At the fruit, flower, and honey show in Toronto, last winter, Mr. H. G. Sibbald, of Claude, Ontario, one of the six appointed as foul-brood inspectors, exhibited a sectional cold-weather case which, in my estimation, has a very decided advantage over any hitherto used. Especially is this sectional feature a gain in spring management.

A number of successful bee-keepers of Ontario are using with marked success a case holding four colonies, two placed side by side, and the pairs with backs together. The packing is underneath, at the sides of the group and over the top. This case, I believe, was first designed by Mr. Jacob Alpaugh, Eden, Ont., one of Canada's closest bee investigators. Mr. Sibbald states, "The advantage over single cases for packing is the economy of heat and expense. One case holds four hives, and costs less than half as much as four single cases; and four colonies packed together create and retain the heat and comfort not enjoyed in an individual case." The illustration shows one of the cases, the sectional feature of which is the invention of Mr. Sibbald. The lower section, A, holds the four hives *a*, *a*, *a*, *a*, having the usual packing underneath and above them. The wall and packing of this section is high enough to be on a level with the top of the brood-chamber of the four hives. The top section, B, consists of not only the cover, C, but the remainder of the side of the case, D, and the packing, *e*, which is held in the cover by means of a piece of cotton or burlap, *f*, stretched across the bottom. Between this cloth and the roof the packing lies.

To examine colonies in early spring as to stores, etc., it is necessary only to remove the cover, or upper section, to expose the group of four hives. The cover, the packing above the level of the hive, and the side wall of the outer case, are all taken away at one operation. This convenience will appeal to those who have had to deal with the examination of colonies packed in outer cases. It saves an immense amount of time, and it prevents the packing from dropping into the hive and getting into the way of the operator. Mr. Sibbald says that the use of this case reduces the time for the fall and spring work to a minimum.

### THE ASPINWALL ENTRANCE.

At one of the Brant district conventions Mr. L. A. Aspinwall, who has wintered his bees and brought them through the spring with such uniform success, described a device he has for an entrance which is unique, and its features should appeal to the practical bee-keeper during winter and spring. It will be seen in the drawing that the outer entrance is not on a level with the entrance of the inner hive. The object of this is to break the wind and to prevent the rays of light from inciting the bees to fly at a time when they should not. During the last two winters Mr. Aspinwall has had the inside entrance two inches wide. Like Mr. Alpaugh he waants no alighting-board as a part of the bottom-board during the time when the entrance may become clogged with dead bees. The bottom-board, therefore, does not project beyond the front of the hive. The object of this is to reduce the entrance to a

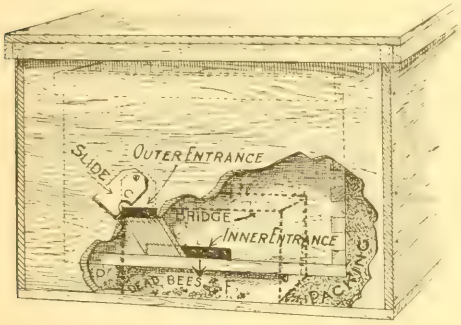



SIBBALD'S WINTER CASE HOLDING FOUR COVERS.

minimum, diminishing the amount of heat the bees have to generate during cold and windy weather, thus saving honey and the vitality of the bee, and yet preventing the entrance from becoming clogged.

By means of this device, the bees dying and making for the entrance by their own efforts, or bees dead and dragged forward by their living sisters, drop down into the "filth-box," as indicated by the arrow, as soon as outside of the hive. In Mr. Aspinwall's device the runway from the inner to the outer entrance is half the width of the 2½-inch entrance to the hive. Up this the

bees must go to get to the outside. The other half of the entrance is to allow the dead bees to fall down into the filth-box as they are dragged to the front of the hive. The entrance being so well protected, the bees have no difficulty in reaching the front of the hive.




THE ASPINWALL NON-CLOGGING WINTER ENTRANCE.

Over the outer entrance is a slide which may be opened or shut according to weather. During unfavorable weather the opening may be left only ½×½ inch. It appears to me that Mr. Aspinwall justly claims that this plan secures an unclogged entrance, yet reduces the opening to a minimum. With the ordinary entrance more space is allowed to prevent clogging.

THE NATIONAL EXHIBITION, TORONTO.

The National Exhibition at Toronto, in its apiarian department, presents no very special features this year. Mr. D. Anguish has a very fine display of comb honey, put up in a style a little different from the ordinary. Messrs. Grainger, Arthur, and Geo. Laing also have fine exhibits, making an attractive exhibit of honey at Toronto, and well representing Ontario honey. Prizes are fairly well divided. Mrs. D. Anguish also shows comb honey.

THE NATIONAL CONVENTION AT DETROIT.

If present interest among Canadian bee-keepers is any guide, there will be the largest turnout of Canadian bee-keepers at the Detroit meeting that has ever been at a convention in the United States. Secretary Hutchinson has worked hard to make a success of the meeting, and Pres. G. E. Hilton will make a good presiding officer. The writer is looking forward to being at the convention.

WINTER STORES.

This is the time when winter stores should be well looked after. Mere weight of hive is not altogether satisfactory. The wood may be unusually heavy, although as a rule this is somewhat uniform. Then the stock may have been queenless for an abnormal length of time, and the combs may contain a lot of bee-bread or pollen. This weighs even more than honey. Again, the combs may be old. Sometimes the colonies that have had the best queens keep the brood-chamber well filled with brood to the exclusion of the storage of honey, and starve, owing to the carelessness of the bee-keeper. This is not a proper selection. It is, in fact, the extermination of the fittest instead of the survival. Let us see that we are not guilty of this folly. Again, the weather has been favorable to the secretion of honey-dew, as it has been dry and the nights cool, Bees have been working early mornings on the oak. I intend to provide every colony with not less than 15 to 20 lbs. of sugar syrup for stores.

# CONVERSATIONS WITH DOOLITTLE

FINISHING UP THE SEASON; WHAT TO DO WITH UNFINISHED SECTIONS.

"Smith wants to know if Doolittle will be offended if he asks him to be a little more explicit about finishing up the season than he was in that conversation given in GLEANINGS a few numbers back."

"Oh, no! Was there any thing you did not understand?"

"I got somewhat mixed on some of the matter, and there were some things which I wanted to know about that you did not touch upon at all, and one or two items that were not applicable to my locality."

"Perhaps I did not take into account, as much as I ought, that different localities require different management, and that different seasons require different methods to meet the varied conditions as they come to the apiarist year by year."

"I think these things are not taken into consideration by the voluminous writers as much as they should be. In other words, it seems to be hard work for such writers as Doolittle, Dr. Miller, and others to get much beyond a circuit of about 100 miles from their own apiaries."

"Thank you. But are you sure that you would do better if you tried to write up my locality, knowing, as I do, that you are living more than 1000 miles away?"

"Perhaps not. But let us try again. Supposing—"

"Yes, supposing, then, that the season is nearing its close, and that each hive has an average of two supers of sections. This means, of course, that some have only one, others may have three or four, while two will be that of the majority, the sections being in all stages of completion."

"Now you are talking something as you should. I want to know just how I can get all these completed, and in the most economical way, as I desire to accomplish such completion as far as possible."

"There is quite an uncertainty along this line, as climatic conditions—cold, wind, clouds, and sunshine—have very much to do with these things. Then very much must depend upon the skill, judgment, and experience of the bee-keeper. I consider it good management to give the bees as nearly as possible the amount of room in the most available shape that they need at all times in which to store honey day by day as it comes in."

"But would it not be better to crowd them at this time of the year, so that they would finish up those sections commenced in, quicker than otherwise would be done?"

"No amount of crowding of the super room will induce the bees to seal over the combs before the honey is ripened to their liking. The raw nectar must be evaporated, or dried out, if you please — ripened and graded, so to speak, in that wonderful manner in which the bees know how to take the nectar product of to-day and make the finished product of to-morrow or next day."

"What do you mean by *graded?* You do not think that each bee-load of raw nectar is graded in accordance with the flowers such loads come from?"

"No, not that. As it is evaporated it is graded in accordance with its thickness or richness, inspected by a company of experts, and sealed up when it arrives at perfection, at the close of the honey-flow, when the wax secretion stops, with quite a few cells of unsealed honey in the last sections worked on."

"But why not feed the bees extracted honey to finish up such sections which are left unfinished?"

"Such unfinished sections have been a great temptation for various experiments by way of what has been called 'feeding back' during the past; but I must say, and that from considerable experience, that such feeding of extracted honey will most likely be unsatisfactory."

"I am sorry to hear that, for I had thought this might be made to pay."

"Some claim it will pay; but the reports that come to me from the rank and file, as well as my own experiments, convince me that the majority of those who have tried it pronounce the same unsatisfactory when every thing is taken into consideration."

"How do you remove the supers at the end of the season?"

"By the use of bee-escapes."

"Do these work as well at this time of the year as they do in midsummer?"

"If it is cold at the time of putting them on, and it continues cold, the bees will sometimes fail to go out of the supers till it becomes warm again; but as a rule I have no trouble along this line."

"How about robbers in taking off honey with the escapes?"

"There is no trouble whatever from this source if there is no crack about the supers large enough to admit a bee. In fact, the overcoming of the robbing tendency at this time of the year is one of the *great big* items which come to the apiarists of the world through the invention of the perfected bee-escape."

"What is to be done with these unfinished sections when taken from the hives?"

"As soon after taking it from the hives as possible the honey should be graded; and the unfinished sections that are not marketable should be extracted, cleaned by the bees, and stored where they can be protected until the next season, when they can be profitably used again as bait-combs."

"Would it not be more profitable to allow the bees to carry the honey out of the sections, or rob them, as it is termed, and thus save the labor of extracting them?"

"I hardly think so. The extracted honey more than pays for the work; and unless the robbing work is done very slowly by the bees they are apt to tear the combs quite badly."

"But does not the extracting break the comb, which is always tender and brittle at this time of the year?"

"Not if properly done."

"Tell me how to extract properly."

"Several wide frames should be provided, into which the unfinished sections are placed as we come across them in grading the honey. As these are filled they are set on shelves near the top of the room in which we work, and where we can have a fire when needed. When we have a lot ready, or are through with all of our grading for the season, a fire is built and allowed to burn long enough to keep the top of the room at from 85 to 95 degrees for four or five hours, at the end of which we can extract the honey from those sections as easily and as safely as though it were midsummer with the mercury at the same height."

"If I remember rightly I have read in some of your writings that, where sections are two-thirds or more finished, or the honey that much capped over, you ship them to market."

"Yes, to the *New York* market."

"Where such are shipped, do you not have to send them off as soon as possible after they are off the hive?"

"I do not. Why should any one do so?"

"Because such unsealed honey, with me, becomes thin, and drips from the cells when handling if I do not get it ready for market as soon as off the hives. This is a very undesirable condition of things, as I have experienced to my sorrow."

"This is because the room in which you store your honey is cold or damp, or both. Where do you store your honey?"

"In a room over the cellar on the north side of the house. I supposed it should be kept in a cool place."

"This is like the old idea of our fathers, who thought there was no place suitable for storing honey except in the cellar. The very best of sealed honey will become thin and watery after a while if left in such a room as you are using. A warm dry room is the only suitable place in which to store honey; for if the room is such that the temperature will stay day and night at from 80 to 95 degrees, all honey in unsealed cells will become so ripe and thick that at the end of two or three weeks the sections can be handled as you please without one single drop stirring in any cell."

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# GLEANINGS FROM OUR EXCHANGES

By W. K. Morrison

### BEE-KEEPING IN BRITISH GUIANA.

Away down near the equator, at Onderneeming, there is a reform school for boys where bee-keeping is taught. Last year they had 11 hives in working order, from which the crop was 1140 lbs. This was sold for $177. The man in charge of that school deserves a gold medal, for I am safe in saying no reform school in all America can come anywhere near his record. Incidentally it shows what can be done in tropical countries when bee-keeping is properly prosecuted.

ANOTHER BUBBLE BURST.

That famous bee journal. *L'Apiculteur*, of Paris, did not fail to notice the editorial in GLEANINGS, giving the editor's experience with Caucasians. It seems to have furnished our French contemporary with a good deal of satisfaction if not downright amusement. At any rate it closes its article with the remark, "Well! another soap-bubble burst."

THE PURITY OF FOUNDATION.

The Abbe Pincot, a well-known contributor to French bee-journals, has lately given way to rather violent attacks on the purity of American comb foundation. His comments may be justly termed "fierce." Mr. Dadant champions the American side of the case. To put it mildly, the Abbe Pincot is "talking through his hat." His idea, apparently, is to boom the Rietsche press, but his way of doing it is unfortunate.

PLURALITY OF QUEENS.

The visit of M. Sevalle (secretary of the French Bee-keepers' Association) to England has resulted in a discussion as to the feasibility of retaining more than one queen in a hive. M. Sevalle got inoculated with the plurality germ while in London at the Franco-British conference of bee-keepers. The contagion caught on in France, and no doubt the arguments will wax hot within the next few months. Thus far the discussion has been fair and open-minded.

EUROPEAN BEES FOR ANNAM.

At a meeting of the Central Society of Apiculture in Paris some one called attention to the fact that three hives of bees had been safely sent to Hue, the famous port of Annam (French Indo-China). They were 33 days on the journey, which is rather remarkable, because the voyage was on tropic seas all the way, and the bees were closely confined the whole time, and yet were in extra-good condition on arrival. It remains to be seen, however, whether European bees can compete with *Apis Indica* in so exclusively a tropic country as Annam. I imagine bees from Madagascar or Reunion would fare better.

HONEY VINEGAR.

The bee-keepers of the West are under lasting obligations to the Arizona agricultural experiment stations for more information about the manufacture of honey vinegar. This is contained in their new bulletin, No. 57, dated June 20, at Tucson. These instructions form a supplement to a former bulletin known as "Timely Hint No. 48," which gave full instructions by the station chemist, Prof. A. E. Vinson, Ph. D. We believe this bulletin is still in print, and may be obtained from the station. Prof. Vinson shows that bee-keepers use up too much honey, as a rule, when they make vinegar. It is wasted in various ways. He also notes that honey makes excellent cider, and it is cider first and vinegar afterward. The ancient bee-keepers were well aware of this fact, and made light wines from honey. In the western country, vinegar is high-priced and inferior (it is made from acetic acid), and there ought to be opportunities in this connection. In the West Indies vinegar is high-priced and inferior, and there are probably other places where this is true. By donating the information contained in these two bulletins the Arizona station has conferred a benefit on bee-keeping. Thanks.

THE LUMBER COMBINE.

The Attorney-General of the United States has decided to oppose the chartering or organization of a gigantic combine financed at $300,000,000, to control the lumber trade of the South. The idea of this combine arose out of the proposal for a great forest reserve in the South to be known as the Appalachian Forest Reserve. It was killed in the committee stage in the last Congress, on account of legal objections, but is very likely to be revived again in a new form. A government forest reserve would be different from a lumber combine. In the former the bee-keepers would stand a chance; in the latter, none at all. It would be the greatest bee-preserve in the world.

SUNFLOWERS IN OHIO.

A goodly number of the farmers in this section have small patches of sunflowers in connection with their corn. Probably in all cases it is planted for the benefit of the poultry, for it is a splendid feed for that purpose, To a great extent it forms a substitute for meat when fed to chickens and turkeys, on account of its high protein content and oily character. The oil soon shows its value in the beautiful sheen of the poultry fed on it. When preparing birds for exhibition I used hemp seed to get a luster; but sunflower seed answers just as well, or perhaps better. It requires rich soil for successful culture; but the chicken-pen will furnish that. In combination with chickens and bees, sunflowers are very valuable, more particularly if alfalfa is also grown for hen feed, which is not often. Some doubt the value of sunflowers for honey; but the nectaries of the flowers are very prominent. I should like to keep bees near a few hundred acres of sunflowers properly cultivated on rich soil. It looks now as if more would be grown in the future.

THE HONEY-PALM.

In the September number of *The Guide to Nature* there is an excellent account of how large trees are successfully moved in California, and in connection therewith are some excellent engravings to illustrate the text. These show two very bulky "wine-palms" being moved by special apparatus. These so-called "wine-palms" are simply our old friend the Chilean "honey-palm" of other days. Its scientific appellation is *Jubeæ spectablis*. The trunks of these palms are thick-set, and some in their circumference resemble ho gsheads or large barrels. When cut down, one of these trunks will produce as much as 100 gallons of "honey" or "molasses." I suppose that, if the juice is rightly handled, the product will be termed "honey;" on the other hand, if rather poorly prepared it is "molasses." The blossoms are said to be rich in nectar, which is very likely, as the bloom of all the other sugar-producing palms is valuable for bees. Ta-

ken as a whole, the honey-palm is a very valuable tree. Great numbers have been ruthlessly destroyed by the Chileans. Californians ought to prize this palm.

DEATH OF MONSIEUR GIARD.

*L'Apiculteur*, in its September number, announces the death, on the 8th of August, of M. Giard, President of the Central Society of Bee-keepers in France. Note what kind of men the French bee-keepers select for a leader. He was formerly professor of natural history and zoology in the faculty of sciences at Lille. Later, from 1882 to 1886, he represented Valenciennes in the Chamber of Deputies. Latterly he occupied a chair in the Paris Faculty of Sciences. He was also a member of the city council of Paris, and a prominent member of the French Association for the Advancement of Science. He was 62 years of age. Such a man adds weight to a society.

DR. WILEY HONORED.

Critics of our pure-food laws prophesied, when the glucose decision was rendered, that Dr. Wiley was "down and out." This does not seem to be the case, however, for he has just been appointed president of the first international congress for the repression of adulterations of alimentary and pharmaceutical products. The congress was called at Geneva, Switzerland, on September 8, the principal nations of the world participating in the event. The congress arose out of a suggestion made by Dr. Wiley to the government of France; and Switzerland, a neutral nation, was selected to call the congress together. Its purpose is to establish uniform standards for foods and drugs for the leading civilized nations. Uncivilized nations do not require food laws.

ANALYSIS OF MEAT EXTRACTS.

Bulletin No. 114 of the Bureau of Chemistry, United States Department of Agriculture, resembles very much the honey bulletin gotten out by the same bureau some time ago. The subject-matter relates to "Meat extracts and similar preparations." The object of the investigation to which it relates was to discover just how valuable meat extracts are. There is a great variation in the analysis of the various brands, but it is clearly evident that their real value is very small. Good lean meat has about double the nutritive value of an average brand. This is contrary to the general impression. Most people "imagine" beef extract to be extremely rich in nourishment. According to this bulletin it isn't. Some of the best authorities cited state that the general effect of these extracts is poisonous; others say they are sometimes injurious, and some think they are beneficial as condiments. The general consensus of opinion among these eminent authorities is decidedly adverse. This ought to be known by all. If the American people understood the contents of this book, the sale of meat extracts would be small. It is necessarily very technical, but it shows the Bureau is doing good work.

# General Correspondence

## THE HONEY RESOURCES OF MICHIGAN.

### What the Bee-keepers of the Lower Half of the State have to Depend on for Surplus Honey; the Influence of Weather Conditions on the Flow.

BY E. D. TOWNSEND.

There appear to be two distinct soils in Michigan that are especially adapted to the wild red raspberry, the famous white-honey yielder of Northern Michigan. One is the southern two-thirds of Lower Michigan, which is now a rich farming country. It so happened that this part of the State was cleared off and made into farms before much was known of the value of the wild red raspberry as a honey-producer, and the raspberry honey that was produced in the lower part of the State was mixed with and went for clover honey, many not knowing it from pure clover, when quite a portion of it might have been wild red raspberry.

This lower section of our State is now the old well-settled farming country, and, of course, the wild red raspberry is a thing of the past. When the country was new, and the farms were being cleared off, there were many waste places around stumps, etc., where the raspberry thrived; but this was before there was much of an awakening along the bee-keeping line, so I do not suppose there was any great amount of this honey secured.

One bee-keeper, however, Mr. Denis Gardner, was an exception to the general rule, for he was a little more in advance of his time than the rest of us. He was located with his bees in the southwest corner of Gratiot Co. This was about thirty years ago, when the county was new, and a few small farms were being cleared off. During a dry season all the adjacent woodland was burned over, and in three or four years there came up on this burned-over district a dense growth of the wild red raspberry. Mr. Gardner was there with his bees, and he reaped a fine harvest of honey. My bee-yard at the time was located some 15 miles south of Mr. Gardner's, in Clinton Co., where the fire did not burn hard enough to kill the timber. Then my yard was not established early enough (1876) to take advantage of this flow, even had I had the bees and experience to take advantage of it.

Mr. Gardner had both the experience and the bees. He produced the very finest comb honey, which came in with a rush during just the kind of flow for the best comb honey. I realize now, but could not grasp the idea then, that he had the knack of getting his bees through the winter and spring in good condition for this honey-flow, which came on early in June. He would have honey on the market at about the time my bees had but nicely commenced in the sections. The honey was of a pinkish color, but of a fine flavor; and knowing what I now do of willowherb I'm satisfied that it was of a mixture of clover, willowherb, and raspberry. This raspberry honey, the

production of the black rich soil, was of an amber color (although of good flavor), unlike the wild red raspberry further north, on the light sandy soil, where the nearly water-white red-raspberry honey of to-day is produced. The amber raspberry honey, when mixed with the white, gave a natural blend that was superb, both as to color and flavor.

Another man in the field about Mr. Gardner's time was Mr. Hiram Roop, of Carson City, Mich. Mr. Roop's bee-yard was located some 15 miles southwest of the Gardner bees, in Montcalm Co. This was before there was much known about out-yards, and Mr. Roop kept his bees all in one place until he had 150 to 175 colonies in his home yard. It was one of those early "bumper seasons" that he had the distinction of selling $3000 worth of honey from this one yard, in one season — a record probably never beaten in the State.

At the present time this lower part of Michigan has three main sources of surplus honey—white and alsike clover, and basswood. While there is some buckwheat sown in this territory, I do not include it in the list as a surplus-honey producer, for on the rich soil of Southern Michigan it rarely produces any surplus; and when it does I think it would be when it is sown on a rather poor quality of sandy soil.

Basswood is the most unreliable of the three sources of white honey mentioned above. In the first place, the wood-lots on the farms are getting smaller each year, so that there are but few locations left in Southern Michigan where there is enough basswood timber left to support an apiary of 100 colonies of bees and produce a surplus, except in very favorable years. Our basswood yields only every second year, and but sparingly, even then. Fruit-trees bloom profusely nearly every year, but there is very much less fruit each alternate year. It would seem that the trees do so much one year that they need the next for recuperation.

Basswood is the same in this State; but, unlike fruit, it blossoms only every alternate year to the extent necessary to produce a surplus crop of honey. With bloom sufficient for surplus honey every second year, a crop of honey may be secured provided there is any basswood timber in reach of the bees, and providing weather conditions are favorable. I have seen a dashing rainstorm cut off the basswood flow when but half over. One of these washing showers seems not only to stop the honey-flow but to pound the delicate blossoms so that they turn black. The ideal time for flowers to secrete nectar is during a rainy season when no rain falls. This condition of the weatner is not essential in all cases, for some of the best flows of honey I ever had from clover came when it rained nearly every day—when the bees had to do their work between showers. They made up lost time because the damp weather kept the clover in bloom for a longer period.

I am indebted to Mr. O. H. Townsend, Otsego, Mich., for the idea (which I have since verified) that, when a drouth comes during the middle of a clover-flow, and we are wishing for rain, this is the time of all times when we do not want rain, for this partially dried-up clover would be washed to such an extent as to stop the secretion of honey for the year, or until a new crop of clover is grown. On the other hand, if there is no rain at this time the flow may last several days before it stops entirely.

White clover is more certain than basswood, as a honey-yielder, because it is not quite so sensitive to the weather conditions; and if there is a good stand of clover in the fall that is well protected in winter with a good covering of snow, we may, with fair weather, expect a honey-yield from white clover.

There is one clover that the Michigan bee-keeper can bank on, and that is alsike; and I think I can safely say that it is worth all the other sources of honey in the southern two-thirds of Lower Michigan put together. The bee-keepers in these southern counties are fortunate if they are in an alsike-clover location.

The ideal alsike location for a bee-yard is one where the clover is grown for the seed. In such a place the two red clovers are grown for seed also, especially the mammoth clover, which is a surplus-yielder some seasons. A soil most favorable for the production of clover seed is a very heavy clay, because the stalks do not grow so large, and more of the plant energy goes into the seed. On the rich loamy soil the tops are too large.

So far I have said but little in regard to the several minor sources of honey, such as the willow, elm, hard and soft maple, etc. These furnish honey and pollen during April, which is a great help to the bees in their breeding, since they are in bloom nearly or quite up to the fruit-bloom in May. The fruit-bloom in the fore part of May is the most important of all the natural spring stimulants; and if the weather is favorable, and the bees strong, one may expect them to put into the hive some honey in addition to what they need for their daily use. It so happens in late years that the weather is usually so unfavorable that the bees can not fly during this period; but, taking it all in all, this little honey the bees do get during the spring months helps wonderfully in stimulating the bees to breed up and get strong for the main honey-flow in June.

In some locations there are a few asters that may help to fill out the last end of the season; for in those locations where they yield, the flow lasts clear to the time of the frosts in September or the first of October.

In Sanilac Co. large quantities of this aster honey are secured some years; but with such food the bees nearly all die during the next winter, so it is a question whether the aster should be called a good haney-plant from the bee-keeper's standpoint.

Remus, Mich.

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## WINTERING BEES IN A COLD AND DAMP CELLAR.

### A Properly Ventilated Bee-room in a Cold Cellar Made with Building-paper.

BY GEO. W. BABCOCK.

It may be as gratifying to some of your readers as it has been for me to be able to winter bees in an ordinary damp cold cellar under con-

ditions which are admirably adapted to the requirements for success.

Our cellar is much larger than required for my colonies, and since the temperature often remains but a few degrees above freezing for weeks at a time, I built, out of building-paper, a center room (in the center, by reason of its being less affected by the outside temperature), having only a framework to fasten the paper on—one thickness of good quality, red or brown building-paper being used, fastened by lath nailed around the edges of the paper, each strip of paper overlapping the adjoining strip, and thus making a practically air-tight room, care being taken not to puncture or tear the paper in putting it on.

Now, my method of getting the right temperature, and dry, warm, and pure air circulating within this paper room, during the entire winter, is the unique part, and is accomplished by an inlet and an outlet ventilating flue, one connected with the chimney in the house, the other with a room above the cellar. These air-passages I made of paper for the purpose of experiment, as large in diameter as the paper would allow. The inlet was long enough to reach from the floor of the bee-room nearly to the ceiling of the room above. The outlet was connected with the chimney, and it created the draft, causing the warm dry air in the top of the room above to pass downward through the inlet tube nearly to the floor of the bee-room in the cellar, displacing the cellar air which passed upward through the outlet tube to the chimney. The connections were as nearly air-tight as could be made by the lath cleating. The circulation would probably be stronger if the inlet-tube were left out and the air admitted to the bee-room direct through an opening in the floor of the room above; but such a plan would raise the temperature in the bee-room but two or three degrees, while with the tube extending nearly to the ceiling the proper temperature is obtained. The circulation was barely perceptible, yet adequate for the purpose.

There were three angles in the tubing, and, though constructed of cheap material, these were not made without some difficulty; but the cost covering the running expense is practically of no account. I could not observe that we burned a pound more coal, nor did the room seem in any wise affected by this connection with the cellar or chimney, and this was probably due to the few degrees of heat required to maintain the temperature of a bee-room in a cellar thus constructed; and as my increased number of colonies will fill this room half full this winter, I am expecting the animal heat to increase the temperature so as to require a damper or the admittance of cooler air to this room.

The outlet tube was placed in a partition, thus making no rupture in the appearance of the room above.

I close the entrance of my hives in winter with a strip of wire cloth after placing on the bottom of the hive two sheets of thin paper (the first sheet having a tack or two at the rear), and thus add to the purity of the air in this bee-room by removing the dead bees twice during the winter. When only the lower cleat, the one holding the wire cloth is removed, a paper can be withdrawn in nearly all instances without a bee escaping.

Clarkson, N. Y.

## BEE-KEEPING IN BRAZIL.

### The First Bee Congress in Rio Grande do Sul.

BY DR. A. L. GREGORY.

Five years ago, when Mr. Emil Schenk came to this State from Parana, there were very few men who used a movable-frame hive. Mr. Hahmemann was the most practical man in the state, but he had to give up the business on account of his age. He loves the bees yet, but he is too old and feeble to work with them. Mr. Schenk bought a stock of blacks and began business, continuing his experiments with both German and American systems, which he began in Parana. We have no supply factories here from which we can obtain what we want. We make all fixtures by hand, or order from abroad, which is very slow and expensive. Finally Mr. Schenk adopted a system of his own, fitted to the needs of the country, then mounted a mule, and for months at his own expense sold models to bee-keepers and took subscriptions for a small bee-journal which he published. It was not a lucrative affair, so after many hardships he finally sold the paper to a company in Porto Alegre, the capital of the state, he remaining editor. This company in some way interested the governmental authorities in bee culture, As a result of this the government sent Mr. Schenk to Germany two years ago to import Italian bees. He returned late last year. By hard work some queens were raised, and a few distributed at government cost. This year there will be more sent out.

The "Centro Economico," which is under state direction, asked Mr. Schenk to write a treatise on bee culture. He composed it in German, and the authorities ordered it printed in German, Portuguese, and Italian. The Portuguese, which lies on my desk, has 54 pages and 32 illustrations. American bee-men, imagine your bee literature to consist of only one number of GLEANINGS! That is all we have in this state in Portuguese or Italian. The Germans lead in bee culture. Mr. Schenk is editor of the *Brasilianische Bienenpflege*, a monthly publication of 20 or 30 pages.

In September, 1907, was the first bee congress in our State. The outside attendance was mostly German, though the people of Taquary took a lively interest. Steps were taken toward organization; instructions were given as to hives, foundation, queen-rearing, etc. A society was formed to aid the producer in obtaining better prices for his products. By the aid of this society the bee-man is to receive about 9 cts. a pound for good extracted honey. There is very little comb honey as yet.

There is some talk of an experiment station. If this should materialize we expect bee-keeping to receive an impetus. This year, however, is bad, as the country is full of locusts, which are eating up all vegetation.

In case any of our readers want to become missionaries we can assure them there is much to be done in Brazil in instructing the people in the arts of living as well as in bee culture. To the extent of our ability we are trying to help the people spiritually, scientifically, and physically.

Taquary, Rio Grande do Sul, Brazil.

# ARE BEES REFLEX MACHINES?

## Experimental Contribution to the Natural History of the Honey-bee by H. v. Buttel-Reepen, Ph. D. Translated by Mary H. Geisler.

*Continued from July 1st issue.*

THE LOSS OF MEMORY FOR LOCALITY THROUGH SWARM DIZZINESS, ETC.

Through swarm dizziness as well as through stupefaction (as before mentioned), memory pictures are extinguished, or, at least, are without influence.

If a so-called artificial swarm is made by sweeping the bees from the frames of a strong colony with their queen into a new hive placed upon a new stand, then all the flying bees return to the original hive, and only the young bees remain in the new one with the queen. In a genuine swarm, on the other hand, all the bees remain in the dwelling of their choice. They have forgotten their old dwelling. But it is not a complete forgetting, for, if a swarm becomes queenless within the first few days, then the bees return to the mother colony—the memory for the old home is reawakened. The extinction of the memory for locality is not, therefore, as final as in narcotization, etc. The old nerve-paths are maintained, but are no longer traveled over, because there is a diversion into other nerve-paths; but if the stronger influences are removed by queenlessness (Weiselunruhe, see p. 12), then the old-trodden paths come into effect again and adjust the direction of the stimuli in the former way; i. e., earlier memory pictures are reawakened and the bees return to the mother colony.

An extinction of the memory of locality is brought about likewise by the apparently narcotic influence of buckwheat honey[79] in the cases mentioned before.

Also bees kept in a dark room for many days, and those numbed with cold[80] appear to lose their earlier memory for locality to a certain extent. Further, the throwing of bees into water, the bathing of a colony, will cause the disappearance of the acquired power of orientation.[81] A colony thus handled can be placed in a different position without a return to the accustomed place of flight. Time has a substantial influence upon the disappearance of memory pictures too. In approximately five or six weeks, or often sooner, bees removed to a new position forget the influences of the old place. After this length of time the hive can be changed back and put in any chosen position of the old location without fear of the bees seeking the original spot. Memories disappear quickly if new impressions obliterate the old. If bees stay in a hive, wintering for months, therefore receiving no new place impressions, the impressions which were received before the wintering commenced remain. In very many cases it can be determined certainly whether a transference shortly before the first spring flight can be undertaken without much loss to the colony. If the first weather for flying is inauspicious, as is generally the case, and the temperature scarcely reaches the 7° to 8° C. in the shade necessary for flight, the bees fly out, lingering for only a short flight with slow orientation, and execute the necessary cleansing. They thereby impress upon themselves the new position. But if, as happens now and then, after a long period of cold, a relatively very warm spring day breaks in, the excitement in the hive is great; thousands press forth, and many hasten off for a longer flight with only a hasty, careless orientation. Under such circumstances a greater or less number, in coming back, return to the old place.

François Huber[82] reports that in the fall he had fed some honey to great numbers of bees from a window; then the honey was taken away and the hives were kept closed all

[79] "If the buckwheat-honey flow is strong, then the bees seem to be unmistakably intoxicated, and they go into the nearest hive-entrance with filled honey-sacs. The observation has been made that hives which are passed over by bees from hives standing further back increase perceptibly in population and honey at the cost of the hives behind" (Bw. Centralblatt, Nr. 3, p. 35, 1894).

[80] Deutscher Bienenfreund, 35, Jahrg. 1899, Nr. 4.

[81] François Huber, l. c. In men, after a violent illness, after a concussion of the brain, after stupefication, after poisoning with carbon dioxide, etc., a loss of memory and retrograde amnesia occurs (Aug. Forel, Das Gedächtnis und seine Abnormitäten, p. 37, ff.; Zürich, 1885; A. Goldscheider, Die Bedeutung der Reize im Lichte der Neuronlehre, p. 28, ff.; Leipzig, 1898).

[82] Nouvelles observations sur les abeilles, 2d edition, 2 vol., Paris and Geneva, 1814; German by Kleine, Einbeck, 1856; English editions in 1823 and 1841.

winter. When they were again opened in the spring, the bees came again to the window, in spite of the fact that there was no longer any honey there.

Bethe (l. c., p. 90) asserts as follows: "If bees cease to fly in autumn, then (as I have proven myself) hives may be placed even inside a circle three kilometers in diameter, each in a chosen spot. The bees do not return to the old location of the apiary when they begin to fly in the spring, but from the first come to the hives in their new positions."

This experiment of Bethe's is not conclusive and I would not recommend any investigator or bee-keeper to try it in the way described, for in nearly all cases all the flying bees will be lost.

If, following Bethe's suggestion, a colony is put in a different place in the fall when "the bees have ceased flying" because of the cold weather, one can not tell whether, in spite of the apparent approach of winter, in the next few days or in the first three or four weeks, a warm period with weather suitable for flight may not set in, during which the bees still have the old position securely in memory. If this happens (and it frequently does), then all the flying bees return to the old place and are lost. The next spring, of course, no return to the old locality can take place, for all or nearly all that would recognize the former position are already dead.

### ASSOCIATION OF IMPRESSIONS.

During a dearth of honey, when bees are usually excessively fond of sweet things (see p. 26), a few bees discovered a honey-comb in my study, flying through the open window. More and more nibblers came, some of them getting caught at the second closed window. To prevent that, I placed the honey-comb in the opened window itself. When, half an hour later, the bees were flying back and forth I drove them away from the honey and closed the window. After perhaps twenty minutes I went into the bed-chamber above the study, the windows of which stood wide open, and found it full of bees. By this time I was observant, and after driving out the searchers and closing the window I went into the garden and noted their behavior accurately. They attempted in vain to press in at the window where I had fed them, then from time to time some flew to the next window and tried their luck there, then further to the next windows above, always keeping about a handbreadth above the window-sill, the height at which the honey had been in the window where they were fed. Thus I noticed bees seeking at all the windows of the house.

If the bees had actually associated impressions and connected the attainment of honey with the form of a window, then it was to be supposed that they would extend their search to the windows of the neighboring house about ten steps to one side, which, in fact, happened.[83]

### MEMORY FOR THE FEEDING-PLACE IN THE HIVE.

If an inner glass or wire-gauze door is kept closed, the back door of a hive may be opened without the bees getting out. Between these outer and inner doors there is usually enough room to place a feeder. If this is filled with honey or sugar syrup, the bees can reach the food when the slide in the glass door is opened, the outer door being closed. If one is feeding for the first time, the bees may be guided to the honey by placing a few upon it, or in some other way, for otherwise they do not transfer the food as quickly as may be desired, because it takes some time for them to find it. To prevent the excitement caused by feeding, this was done in the evening, and the empty dish taken out the next morning, the slide of the glass door being again closed. But on the next evening, or the one after, I noticed many times that, if I opened the glass door, the inmates streamed out so quickly that I had to hasten to close the outer door in order not to crush any. Also, if the feeding were done in the open air the bees often came hours and days afterward to the place where they had once obtained honey.

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[83] Under the designation, "Instinct or Intelligence," I find in the American Bee Journal, Chicago, 1892, the following note: "If a dish of food is placed on the trunk of a tree, bees will soon search for honey in the same place on all the trees in the neighborhood. A similar thing happens if bees are fed from a window facing south. Soon bees are discovered seeking at the south side of all the neighboring buildings."

It would be difficult to doubt that here we have to do with memory processes; for if bees are reflex machines, following "chemotropically" only adequate mechanical stimuli; then we can not understand why, when the stimulus has not been present for a long time, they react again and again as if the stimulus still existed. A plant never reacts heliotropically or chemotropically to a past stimulus, etc., if the respective stimuli are no longer acting upon it. But here we see movements set loose, although the cause—the honey on the feeding-spot in this case—no longer exists. We see bees once fed, often, after two days, seek that place in vain; but then they modify their procedure; they learn that there is no longer anything to be obtained there, and cease from further flight, often after a few hours, as before mentioned.

### CONDUCT OF BEES IN THE BUCKWHEAT SEASON.

If colonies stand in buckwheat, the flight is lively in the mornings until about ten o'clock; then it lessens, and is entirely quiet for the greater part of the day, beginning vigorously again the next morning. The buckwheat honey flows only in early morning; so, as the nectaries dry up, the bees fly out a couple of times and then discontinue their vain flight. In spite of the shimmering sea of flowers, in spite of the strong fragrance, only a few bees may usually be found after ten o'clock in the buckwheat-field.

Here the stimuli of color and scent are constantly present, and there is also the habit of daily flight to the same fields; and, in spite of that, we see that flying is discontinued. Here, undoubtedly, as well as in the preceding feeding experiments described, the processes of learning and remembering may play their important part.

### ARE BEES ATTRACTED BY THE COLOR OF FLOWERS OR BY THE NECTAR?

This might be a good place to consider briefly this interesting question. While Plateau[85] substantially advocated the view that bees are attracted chiefly by nectar and not by color, it was above all Aug. Forel[86] who stood almost alone in opposition to this view, based on many years of admirable experimentation. Recently some younger investigators have been associated with him, who can experimentally verify his conviction that it is chiefly the color which serves to attract. Upon the foundation of the work of Forel, Andreae,[87] Giltay,[88] Detto,[89] Kienitz-Gerloff,[90] we can establish as proven the statement that the honey-bee, *Apis mellifica* L., is attracted substantially by the color of flowers, and not mainly by the nectar. The color of the flower is indeed a gay flag which proclaims at a distance, "Here there is something to sup."

That bees observe flowers keenly, follows from the fact that single bees in foraging practically never visit two kinds of flowers, but always hold to one kind. This may easily be seen by examining the pollen-sacs on the return of the bees to the hive. One color of pollen is always seen; a mixture of colors, I have observed but once.

### PLACE PERCEPTION IN THE QUEEN.

In the literature of apiculture the observations concerning the memory of locality in the queen, so far as the duration of this memory comes into question, diverge very far from each other. Some say that she has capacity for remembering her hive, the outside and surroundings of which she learned to know in her single virgin flight, for more than three years; others say, for some days or weeks. The source of failure in these observations is connected with the frequent unnoticed changes in queens going on unaware of the bee-keeper. He often thinks that he still has the old queen in the hive when she has been replaced for some time by a new one.

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[85] Plateau, Felix, Comment les fleurs attirent les insectes. Bull. Acad. roy. d. Belgique, 3 série, T. 30, 1895; T. 32, 1896; T. 33, 1897; T. 34, 1897; Recherches experimentales sur la vision chez les arthropodes, ibid., 1888, etc.

[86] Forel, Aug., Recueil zoologiques Suisse, 1 série, T. 4, 1886-88 (also as separate); Expériences et remarques critiques sur les sensations des Insectes, partie I.-V.; München (Reinhardt) or Paris (Klingsieck), 1900, 1901; Die psychischen Fahigkeiten der Ameisen und einiger anderer Insekten, München, 1901.

[87] Andreae, Eugen, Inwiefern werden Insekten durch Farbe und Duft der Blumen angezogen. Beihefte z. Bot. Centralbl., Bd. XV., Heft 3, 1903.

[88] Giltay, E., Ueber die Bedeutung der Krone bei den Blüten und über das Farbenunterscheidungs vermögen der Insekten, I. Pringh., Jahrb. f. wiss. Bot., 40, 1901.

[89] Detto, Carl, Blütenbiologische Untersuchungen, Theil I. u. II. Flora oder Allg. bot. Zeitung., 94, Bd., Heft 2 u. 3, 1905.

[90] Kienitz-Gerloff, Professor Plateau und die Blumentheorie I. u. II. Biol. Centralbl., 18, 1898, u. 23, 1903.

It is true that queens which fly away from the comb just taken out of the hive usually get lost because they can not find their way home.

I made the following observation: When a queen flew away as just described, I stood perfectly quiet, exactly as I was when she flew, in the hope that, if she had no memory of her hive, she would surely return to the place from which she flew, since bees which have not before oriented themselves always go back to the place from which they flew.[91] After barely a quarter of a minute, in fact, the queen sank down again, not on the comb, to be sure, but upon a little piece of board which lay in the grass a step distant. There I caught her easily and put her back in the colony. In keeping quiet and not changing the surroundings I followed an old bee-keepers' rule, a practice developed from much observation like the above.

But it has, undoubtedly, been established many times by reliable observers that a queen finds her way surely to the entrance of her hive a month after her marriage-flight.

A young queen often errs when the hives stand very close together, if she returns hastily from the marriage-flight. If hives from which flight will take place are marked, therefore, for example with a twig covered with leaves,[92] her return is very much more assured. This is proof that the queen impresses accurately upon herself the appearance of her dwelling.

MEMORY FOR LOCALITY IN SCOUTING BEES.

In the behavior of the so-called scouting bees we find one of the most conclusive proofs against the vague hypothesis of an "unknown force." They prove most emphatically, in my opinion, that an orientation truly takes place through the sense of sight, through memory pictures.

I can not here deny myself the pleasure of inserting the interesting information about scouting bees which Baron v. Berlepsch, the so-called Bee Baron,[93] sent to the Bienenzeitung, VIII., No. 7, 1852.

"Annually, about swarming time one often sees bees in considerable number at holes in the walls and crevices of old buildings, walls, and trees. They creep in and out, apparently seeking something, run anxiously outside and back, flying to and fro. They buzz about as if in front of the hive, and one must have considerable knowledge of bees to be able to distinguish these so-called scouting bees from the true colony. Even if there is no room behind the hole or crevice, I have often seen them forming a cluster before one from six to eight inches long, two or three inches broad, but not at all deep. In so doing they were always uneasy, which does not happen, as is well known, with bees in front of a real hive. These bees are usually regarded as belonging to colonies about to swarm, sent out to find a good place for quarters for the next swarm, hence the name scouting bees or quarter-makers. I see these bees every year at the crevices of the old knight's castle, and in the garden wall and the barn gable. These crevices are often hardly one inch deep, and one-half inch wide, so that there is not room for even the smallest after-swarm. My observation that, although indeed no year passed in which not one but most of my after-swarms escaped, a swarm never alighted here, led me to doubt the common belief; and in 1844 I determined to make very exact investigations and experiments, and to take careful note of everything. When, therefore, on May 12th of that year I first saw bees on the edge of the wall, I had them sprinkled thoroughly with chalk toward evening by my usual helpers, and the gardener and I stood in front of the hives to see to which the bees belonged, and whether they were all from one or from more than one hive. Soon coming in, they all entered No. 77 ('Solomon the Magnificent'). Early the next day they were on the wall again, and so it went on for four days. Each evening they were powdered, and their return carefully noted (scouting bees had in the meantime appeared at many other places). They belonged, undoubtedly, to the magnificent Solomon. Finally on the 17th, about ten o'clock, the powerful 'Padischah' swarmed out with a formidable host, went in the direction of the scouting bees, but hung on a dwarf tree hardly

[91] Orientation begins, therefore, at the moment of the flying out (see Box Experiment, p. 23).
[92] Dathe, Lehrbuch der Bienenzucht, 1892; Bensheim, p. 279.
[93] As is well known, v. Siebold, demonstrated Parthenogenesis in bees for the first time upon the estate of v. Berlepsch in 1855 (see "Wahre Parthenogenesis bei Schmetterlingen und Bienen; Leipzig, 1856, p. 110 and following).

twenty steps from the hives, fully exposed to the burning sun. I let them hang, and remained standing near. About eleven o'clock they again broke loose, soon alighting in a somewhat shadier place at a short distance, remained there until three o'clock, broke up very quickly for the third time, and went over the garden pavilion toward the open fields. My assistants ran after them. I mounted a horse as quickly as possible, and galloped after them. Before I came up to the assistants the swarm was lost to sight, and we have it yet to see to-day. The scouting bees were still on the wall, went back again in the evening to No. 77, and appeared early on the 18th. This reappearance was indeed a disappointment, for, powdered on the evening of the 18th, they all entered No. 7 ('Dr. Franzia'), and not one to 'Solomon.' On the 19th, quite early, I had the crevices in all places carefully closed with lime, and put up a straw hive with an alighting-board. The scouting bees came, at first crept behind the hive around the closed crevices, then took possession of the hive. I tilted it frequently to see what the bees were doing inside. I saw little; they ran around anxiously as if they might be cleaning out the hive. On the same day at noon a swarm emerged from 'Franzia' and, after changing its place twice, finally alighted about four o'clock under a shady linden-tree. Here it could be observed comfortably. Single bees flew in all directions, each time mapping out the place with the usual circling flight, then returned; and here the swarm hung over night. With the first shimmer of morning red, there I sat again with my assistants, the garden doors open on all sides as on the previous day, the groom (all the implements for capturing swarms on his back, a true Cupid with arrows) at a short distance with two saddled horses. At 5:30 I saw more bees fly quickly toward the south without circling, and none returned. At 7:30 the swarm broke away again, flying low and very slowly in a southerly direction, and the leaders could be distinguished rather clearly. The groom hastily mounted a horse, and I went running *ipsissimis pedibus* beside the head of the swarm nearly to the end of the garden, ever more and more convinced that the swarm knew where it wished to go. The assistant brought out the other horse. I threw myself upon it, hastened out of the garden, and followed the groom through thick and thin. We followed well at a moderate trot for a quarter of an hour, but finally the swarm went so quickly, always at a height of between four and nine feet, and in a southerly direction, that we had to ride indeed *en carrière*. We came to the next village, not three quarters of an hour's ride distant, and the swarm went into a farmer's garden. I went over the hedge as if in hunt, was in the middle of the swarm with the horse, and then saw it enter a hollow pear-tree. This move took place with such celerity and surety that it seemed to me that the swarm without a doubt had chosen this place in Seebach (through scouting bees). A capture without smoke was not to be thought of, so I begged the owner to let me stay in his Eden for a while (for I would smoke out the swarm for him the very day into a hive, and leave it to him as his property). After scarcely twenty minutes the bees began to carry out little chips from inside the tree, went foraging, etc."

Can we explain this interesting procedure only upon the ground of an "unknown force leading back to the hive"? Can we explain it without accepting the existence of a memory, a capacity for orientation through the eyes, through memory pictures? I think not in the least.

Must we not here acknowledge a means of communication, a method of understanding which does not rest upon odor reflexes? I can not think of this going on without some means of understanding, and I presume that the scouting bees lead the swarm by an alluring sound which naturally can not be observed.

It is noteworthy that, of 60,000 to 80,000 bees, about fifty to a hundred serve as scouting bees; but, peculiarly enough, only before the swarming of the unwieldily, usually low-placed first swarm (often with an old queen heavy with eggs), while the colony never or very seldom sends out scouting bees before the issue of the light-footed after-swarm which with the unfertilized easily flying queen generally alights high up.

Now and then the scouting bees make it very convenient for the bee-keeper by selecting an empty hive and leading the swarm there.[94] Dishonest people who wish to capture

[94] Deutsche Bienenz. in Theorie u. Praxis, Nr. 9, p. 144, 1899.

swarms not belonging to them put out so-called bait skeps, or hives; and if the scouting bees discover these they often lead the swarm there.

One of the highest colonies ever found (300 feet high) was in the statue of Liberty on the dome of the capitol in Austin, Texas. How high the scouting bees must have flown to discover this strange place,[95] and what power of allurement the explorers must have used to be able to lead the colony to such an unaccustomed height!

THE EYES OF BEES.

Before we turn further to other interesting observations concerning the memory of locality, let us inquire why there are such large well-developed eyes in the three kinds of bees, if orientation through the sense of sight be denied. This is no idle question, for wherever eyes are but little or not at all used, a gradual stunting takes place, etc.; thus, for example, to restrict ourselves to social insects, in the ant, *Solenopsis fugax,* the workers possess eyes with six to nine facets, while the workers of *Apis mellifica* have about 4000 to 5000, the drones about 5500, and the queen about 5000 facets on each eye, besides the three ocelli which are apparently for distinguishing near objects.[96] Bethe has since rejected the statement that the ocelli are probably used for seeing near objects, as incompatible with the "first principles of physiology." I thereupon replied that the renowned physiologist Johann Müller was the first to advance this view, and that observations in natural history confirm and even substantially support it. I have communicated the details in my "Stammesgeschichtlichen Entstehung des Bienenstaates" (pp. 90-95), Leipzig, 1903.

Bethe credits bees with only "a slight capacity for receiving light stimuli" (Bethe, p. 82), basing his view upon an experiment which I on the other hand can not consider convincing. If a large screen be placed in their way, the routine-loving bees will follow the usual path of flight until within 1 to 1½ meters of the obstacle, then suddenly rise and fly over it. But this does not prove conclusively that the bees had not long before seen the immense screen (two and a half meters high and three meters broad). They follow freely the accustomed path as long as possible. Bethe himself says "that a once used correlation of movements may be retained for a long time" (Bethe, p. 92).

In order to experiment to see that bees, instead of being "near-sighted," are very far-sighted, stand at a distance of about ten steps from the hive at the time of the buckwheat bloom, the nectar of which, as already mentioned, excites bees extraordinarily. The bees coming out from the hive-entrance quickly, wholly indifferent as to the direction of the wind, leave painful proof of their ability to see; and a man presents a considerably smaller surface than the screen before mentioned.

"According to our knowledge, everything in living nature has a purpose" (Bethe, p. 19); therefore the very large eyes of bees must be for the purpose of guiding the insect safely and well.[97]

The brain of the bee, very strongly developed in comparison with those of other insects, is certainly not without purpose. The powerful optic lobes (*Lobi optici*) prove unquestionably the great share that the eyes have in the nervous processes.

THE FLIGHT OF ORIENTATION.

How much bees need eyes in flying out from the hive, shows in a very clear way from their striking behavior during the first flight. As the bees fly out they turn their heads toward the hive, and in the continuous hovering up and down (resembling the gnat's dance), the hive itself, the neighboring hives, and the bee-house are surveyed; and, indeed, I repeat it, the head is constantly turned to the hive, so that even a slight flying backward is shown. This is the so-called first-play (Vorspiel)[98] which is not taken into consideration at all by Bethe, and has not been considered by him as a specially characteristic proof of the orientation by the sense of sight. After this short preliminary flight, small and then larger orientation circles are taken, and thereby the near and distinct surroundings are impressed on the memory.

[95] American Bee Journal, 1892, Chicago.

[96] Thos. Wm. Cowan, The Honey-bee, its Natural History, Anatomy, and Physiology; London 1890; German by Gravenhorst; Braunschweig, 1891. a. o.

[97] Up to the present time no one has doubted that the horse-fly (about 5000 facets), or the dragon-fly (about 12,000 facets), orients itself during flight solely through the excellently developed eyes.

An old bee flies out from the entrance, if the forage is rich, directly and swift as an arrow. It darts from the entrance through which it has often flown, and knows its path of flight. A young bee flying for the first time must first make a flight of orientation. This is a conclusive proof that bees learn.[99]

THE FINDING OF THE HIVE THROUGH THE SENSES OF SIGHT AND SMELL.

While the sense of sight is sufficient under ordinary circumstances for bees to find their way home, still they use the sense of smell also under the following conditions:

If a colony has been brought from another district, and the slide is opened after the hive is in place, then the bees flying out hasten away without orientation, for naturally they do not know of their change of place, and believe themselves in a well-known neighborhood. In such cases they are seen striking out either in graded flight or mounting in the well-known corkscrew lines without turning the eyes to the hive, as is always done in the described flight of orientation. According to my observation, such bees, flying without first orienting themselves, often come back in a surprisingly short time, because, failing to see the customary landmarks, they immediately begin to seek orientation. If the newly procured colony stands between others which look like it, then in finding their way back there is what Herr Roth, the leader of the bee-keepers' school at Baden, wrote to me "a tasting with the sense of smell, which is extended to the neighboring hives." This is a striking phenomenon easily observed. An orientation with the eyes goes on at the same time, so that the real flight of orientation does not have to be carried on later.

As I have said, such unoriented bees that fly out return quickly, often after five or ten minutes, with full burdens if the weather is mild and there is no wind. In cooler weather, and with sharp wind, many go too far into unknown regions and do not find their way back.[100]

Bees remain out on flight seldom longer than one-half hour if the forage is near—almost never over an hour if the forage is distant and in unknown surroundings.[101] They then go home apparently willingly, with a half or a quarter of a full load, as one can easily see in the tiny pollen-sacs and in the slight body.

Let us now hear from Dr. Bethe's description concerning a transported hive (l. c., p. 92). "Lubbock placed some honey out in a room to which some wasps came: he then closed the window which faced the nest. The wasps flew mainly against the window, but finally flew through the other open window. After a few times the greater number flew immediately to the open one. Since, however, a kind of 'accustoming,' based upon an unknown force, seems to enter in finding the way home in this experiment, I hoped to succeed in getting results by observing accurately a new colony of bees. It was bought in a village seven kilometers away, and was placed in the Institute garden about seven o'clock in the morning. At first only a few bees hummed around in the air.[102] A great number sat upon the flight-board and the front wall of the hive, as is generally the case in excited colonies. Between nine and ten o'clock in the morning the first ones flew away.[103]

[98] Dathe, l. c., p. 146.

[99] The following observation proves how little bees accustomed to the hive's place and surroundings regard the place from which they fly in their swift exit. If the second hive-entrance, which is in the upper honey-chamber (super) is opened, for days bees will be seen leaving from this entrance, but never entering it. The entering takes place constantly in the usual path through the entrance below. Only by and by bees begin to fly into the upper one (cf. p. 40).

[100] I quote the following from a private letter from Dr. Dzierzon, a distinguished bee-keeper to whom we are indebted for the discovery of parthenogenesis in *Apis mellifica*. Dzierzon died last year 96 years old. "There is not the slightest doubt that bees find their way back to the hive in the way you have described, guided by pictures of their dwelling and the near surroundings gathered as they flew away. Instinct is the explanation, in so far as they are led to observe accurately the position of their dwelling and the nearest surroundings in the first flight out. On account of this, as you know, in the first flight, (Vorspiel), they turn around; and, forming small and then larger circles, gain an exact impression of the neighborhood and the hive. I have often wondered at the rapidity with which they are able to do this. I brought a hive from a distant apiary, and on opening the entrance a few bees flew out, probably for water, not suspecting the removal. In the mild weather they were not lost, but came back to the same place, and soon the flying after water was going on as if nothing had happened. Thus quickly a part of the bees had become accustomed to flying in the new apiary," etc. Even though this letter contains no new knowledge of the biology of the bee, yet it seems to me that its publication is appropriate, in view of Bethe's opinions following.

[101] As was mentioned before (see p. 19), the leader of the bee-keepers' school at Baden observed that his bees returned from a buckwheat-field six kilometers away, with full burdens, on the average in thirty minutes.

[102] It is a pity that we can not learn how these bees acted, whether they oriented themselves, etc.

[103] Accordingly this appears to have been a cool autumn or spring day, else it is inexplicable why the bees hesitated so long with their flying-out. Or was it windy or rainy weather? Or were the bees wearied with the transportation?

They corkscrewed in widening circles into the air, as bees do when they have just been set out. After three or four circles (in which note well they had never turned their eyes toward the hive),[104] they took their direction and flew quickly to the meadows. A great number of others followed, all corkscrewing into the air.[105] About three o'clock the first ones returned laden with honey and pollen.[106] They came from the east (not from the south whither most had gone), and flew from the place where I first caught sight of them (5-6 meter distance) in a *straight* line to the entrance. If here a noticeable accustoming had played a part, perhaps as a memory process, it would be impossible to think that the insects would fly in such a straight line for the hive. A force then must be present, which draws them like a magnet to this place in space, and the described "accustoming" is something secondary, unnecessary for the occurrence of the reaction."

Since we have not the slightest scientific proof whether these bees which returned at three o'clock, which "flew in a straight line to the hive," did not belong to those which had hummed around the hive in the early morning, and therefore had been able to notice the position of the dwelling accurately, this experiment proves nothing, because we are not informed concerning the method of the flying-out of the later bees.

Bethe speaks expressly of "accurate observations," so we must accept as a matter of course that there were no errors in his observations. If, therefore, the foregoing really happened as pictured, this experiment does not, I believe, present a conclusive proof for but against the "unknown force." According to my long years of experience, a five or six hours' roving and remaining away from the hive under the conditions described is entirely impossible. We may here, from what is known of the natural history of the bee in this direction, count upon the possibilities expressed before. Later on it turned out that the observation was not an accurate one. Cf. p. 90 of my Stammesgeschichtliche Entstehung des Bienenstaates. Leipzig, 1903.

If, indeed, a magnetic force existed to draw bees homeward, then without doubt the bees which flew out would have succeeded in reaching home inside of ten minutes or at most an hour after leaving.

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[104] Bethe appears to consider this the normal flight out; above all, nowhere does he mention the entirely different flight of orientation.

[105] As none of these bees flew off in a straight line, it is natural to suppose that these were greatly irritated by the transportation or suffered by the lack of air during the transportation. The thick gathering on the outside points to the latter supposition, as does also the late flying-out.

[106] Therefore after five or six hours! Doubtless almost all the bees which flew out in the forenoon were lost, or returned again to the known neighborhood, because the village was only seven kilometers distant, for under the conditions cited an absence of five or six hours can not be accepted as true.

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## BEESWAX FINISH FOR WOODWORK.

I read about your beeswax finish; and as I am building a new home I should be very grateful if you would let me know what kind of wood is best to use the finish on, and what proportions of beeswax and turpentine.

Springvale, Ont. Linus B. Gowan.

[The beeswax finish to which we referred is made by mixing turpentine and melted beeswax in such proportions that, when cool, the mixture will be in the form of a thin paste. The proportions we used were about three parts turpentine to one of melted wax, by measure. While hot it should be thoroughly stirred. If not thin enough when cold to spread nicely, more turpentine without heating may be added.

This paste is spread upon the woodwork, covering it thoroughly; then with a brush the surplus is cleaned off, after which it is immediately rubbed down with a rag until a glossy finish is secured.

Nothing but pure beeswax will answer the purpose. The slightest admixture of paraffine will spoil it. The finish, while not glossy like varnish or that of hard oil, has a rich, smooth appearance that brings out very clearly the grain of the wood. Indeed, to our notion it is richer and more in keeping with modern finishes than the old-fashioned glossy cheap varnish look. It does not begin to cost as much as hard oil or any other varnish. While one may use a filler, yet it is hardly necessary, as the effect is very pleasing without it. Indeed, the wax itself acts somewhat as a filler as well as a finish.

As to woods, it looks nice on any wood, either hard or soft, although the effect is much richer with an oak or a maple than with the yellow pine. If we were to use the latter we would advise using what is known as the weathered-oak stain, then apply the beeswax finish. Our offices are all finished in this way on yellow pine, and the effect is certainly very pleasing.—Ed.]

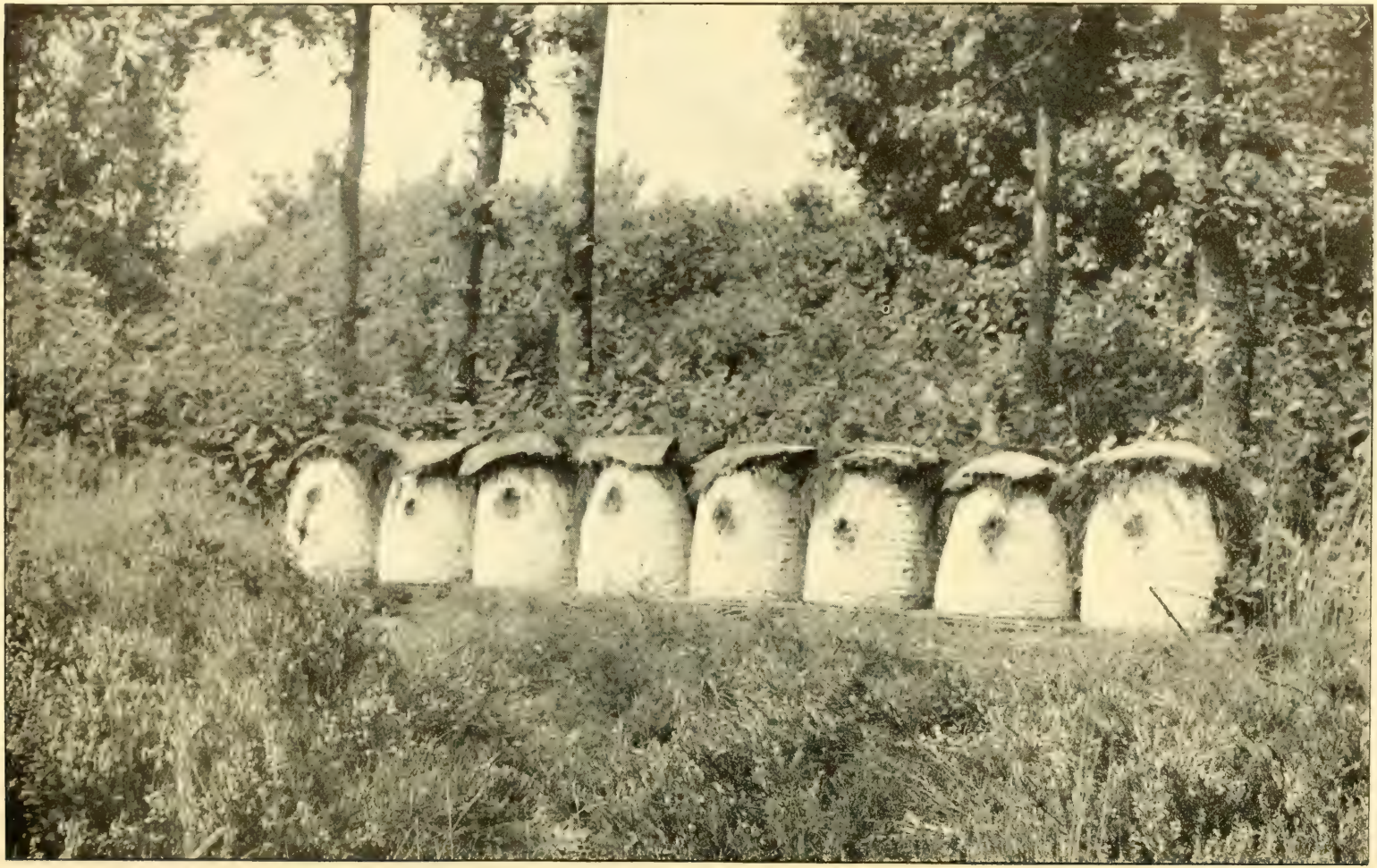

FIG. 1.—HOLLAND SERIES. STRAW SKEPS ON THE HEATH.

FIG. 2.—HOLLAND SERIES. MR. MATTHES AND HIS HELPERS AMONG THEIR PETS ON THE HEATH.

## BEE-KEEPING IN HOLLAND.

### A Visit to the Largest Modern Bee-farm in Holland.

BY J. H. J. HAMELBERG.

Although apiculture in Holland is not of so much importance as it is in the United States it may, perhaps, interest some GLEANINGS readers to learn something about it.

Movable-frame hives have only lately come into general use. It is not many years ago that a modern hive was considered quite a novelty on our bee-farms. Of course, we have had the large Gravenhorst straw hive with movable frames, which is still a favorite with many bee-keepers, and deservedly so, as it is a hive in which bees winter uncommonly well. Its clumsiness is the principal objection. Then there have been in use the Berlepsch, the Alberti, and the Gerstung hive; but the impractical way in which their frames had to be handled, and their cost, made them unpopular. It is only after the American system of handling frames from above had become better known that modern hives gained in popularity. As yet, however, the old-fashioned straw skep is most generally used here; and, when visiting our heather-field in the right season, one can certainly count five skeps to one movable-frame hive.

It is at "The Bee," the apiary of Mr. Hans Matthes, at the quaint old village of Breukelen, where modern apiculture is practiced on the largest scale in this country. Three years ago Mr. Matthes started in business with 200 colonies in straw skeps, which he transferred to modern hives, the invention of his foreman, Mr. R. Tukker, a bee-master of repute and extensive experience.

The Tukker hive is a divisible-brood-chamber hive measuring outside 20×15¾ inches square, and 18 inches high. Within this body are hung, on cleats, two separate boxes, one on top of the other, each measuring 15¾×11¾×5½ inches, thus leaving an empty space between the inner wall of the box and the brood-chamber, thus making the hive practically double-walled. Each of these brood-bodies contains 8 hanging all-wood frames 14¾×4¾; and supers with the same frames can be placed on top.

With this hive Mr. M. has to handle one kind of frame only; and, working mostly for extracted honey, he claims this to be of great advantage, although it would seem the Tukker hive could be improved by having the two brood-bodies in separate casings in order to prevent disturbing the bees when the under box has to be gotten at, which now can not be done without first lifting out the upper box and exposing the bees to the inclemencies of the weather, unless a separate super is carried around when examining the hives. However, Mr. Matthes and Mr. Tukker are well satisfied with their kind of hive.

To make the most of the honey crop in this country, it is absolutely necesary to travel with the bees. Early in the season, generally about May 15, Mr. M. goes with his colonies to Haar-

lem Lake, formerly a broad sheet of water, but now converted into rich farm land, where cabbage and mustard are extensively cultivated for seed. Fruit bloom with us falls about the same time, but the yellow cabbage and mustard flowers yield far more honey than fruit-blossoms (although not of so delicate aroma), *if* the season is favorable, which, unfortunately, has not been the case very often in recent years.

About the middle of June the colonies at Haarlem Lake can also begin gathering from the pastures abounding with white clover; but our main hopes are always fixed on the honey-producing qualities of buckwheat and heather. Unfortunately, however, the cultivation of buckwheat is rapidly on the wane, our farmers not considering it a profitable crop. On the other hand, only very poor soils are now used for buckwheat; and such soils, being mostly found in the neighborhood of heather-fields, the practical bee-keeper can look out for a place from whence his bees can work on both buckwheat and heather, the former blooming during July, the latter from the beginning of August until the early part of September, and sometimes later. However, one night of frost, such as we had last year as early as the 25th of August, will stop the honey-flow at the heath at once.

Until now, Mr. M. has not favored any foreign race of bees. He sticks to the common black bee, believing this kind to be best suited for our changeable climate. Neither has Mr. M. discarded altogether the old-time straw skep. When properly made, viz., with walls two inches thick, bees winter uncommonly well in them, and very often they will begin brood-rearing in them some weeks before they do in wooden boxes, thus giving earlier swarms. Besides, a good many Hollanders are not yet familiar with extracted honey, preferring the comb honey of their youth, especially when gathered on the heath (we being a conservative people, Mr. Editor). To gratify this taste, Mr. M. had made very attractive-looking flat tin boxes of a size to contain a square piece of comb honey of exactly one pound. For the filling of these he mainly depends on the produce of the straw skeps, first killing their bees or transferring them to modern hives. Heather honey being almost inextractible on account of its thickness, that gathered in movable-frame hives is generally left with the bees for their winter stores.

In managing his apiary, Mr. Matthes follows American methods to a great extent, and GLEANINGS keeps him posted concerning such. He is ably assisted by his foreman, also by the charming Mrs. Matthes, whenever her household duties permit it. The old way of putting hives close together in long rows Mr. M. still sticks to, however. At home the colonies stand under cover, which can be removed in parts—a practical idea originating with Mr. M. himself. But considering he has now reached the number of 400 colonies, which he does not wish to increase, it would seem advisable to have the colonies placed in groups with sufficient space between them to put the non-swarming methods or Heddon's way of preventing after-swarms into practice, primary swarms usually finding a ready sale at The Bee.

Compared with the reports GLEANINGS occa-

FIG. 3.—HOLLAND SERIES. RESTING AFTER A HARD DAY'S WORK.

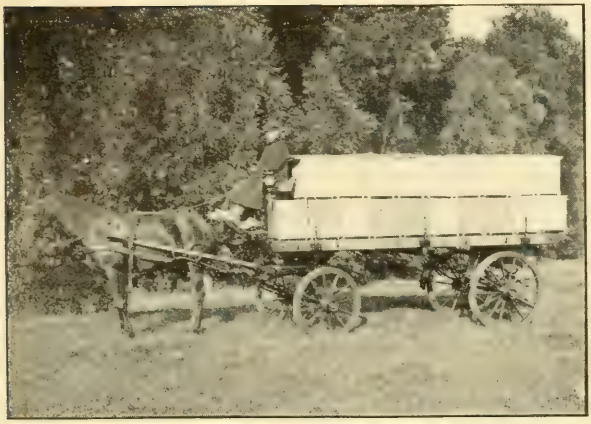

FIG. 4.—HOLLAND SERIES. STARTING FOR THE HEATH.

sionally gives us of some harvests on the other side of the pond the production on The Bee is rather small. More than 50 lbs. a year per colony is hardly ever gathered in this country, and usually the production is far less—30 to 40 lbs. of surplus being, on an average, the yearly harvest per colony. However, as good extracted honey sells here at 35 cents a pound, while Mr. M.'s tins of comb honey find a ready sale at 40 cents each, the business can still be profitable.

Visitors are always gladly welcomed at The Bee, Mr. M.'s hospitality and courtesy never being called upon in vain. His farm is situated in one of the most picturesque parts of Holland. Readers of GLEANINGS, when visiting our country, will do well to take at Amsterdam an early train for Nieuwersluis, a trip of but 20 minutes, when a walk of about two miles through a beautiful alley of gigantic old oaks will bring them to Mr. M.'s residence.

[• In conclusion it may not be out of place to mention here that our government is slowly awakening from the torpor it has until recently remained in with regard to the promoting of the interests of bee-keeping. As yet our Department of Agriculture has no separate division for apiculture; in fact, I do not believe the whole department holds one single official able to distinguish a queen from a worker. But we have one very active society for the promotion of bee-keeping, and, of late, the government has increased the subsidy for this society from $500 to $1000, thereby enabling it to appoint a scientifically and practically trained person to give all desired information to its members, and to expound the methods and theories of bee-keeping at public meetings in our bee-center. Besides, our organization issues a monthly review, and appoints yearly a commission chosen from our best-known practical bee-keepers and entomologists, to examine candidates for a diploma of bee-master. A program of the requirements for this degree has been carefully considered and finally agreed upon by the society, and it necessitates serious studies indeed to go up for this examination, very few candidates having succeeded until now. Some day, perhaps, we shall have one of these at the head of a separate bureau for apiculture in our agricultural department; but first, as we say here, much water will yet have to flow to the sea. However, slow but sure is our way, and so we work steadily on and don't complain.

Maarssen, Holland.

[It has been supposed that a very highly cultivated country would be unfavorable to bees; but the foregoing article would indicate otherwise, for no country surpasses the Netherlands in this respect. Probably the results per acre are 100 per cent greater than the best portions of the United States. It is evident that the Dutch are fast adopting the latest ideas.—W. K. M.]

FIG. 5.—HOLLAND SERIES. MR. R. TUKKER EXAMINING HIS COLONIES.

MR. LEVI HUMMELL AND HIS HOME-MADE HIVES.

## NAILS FOR SUPPORTING FRAMES.

### Leaves for Winter Packing.

BY LEVI HUMMELL.

I make my own hives, which are 18 inches long, 12 wide, and 12 deep inside. I made the frames after the Hoffman pattern, with the exception that the top-bar does not extend out. For a support I use a finishing-nail. I think if more would use nails to support the frame there would not be so much trouble with propolis.

I built a bee-house 8 ft. wide and 10 feet long. In it I can winter 44 colonies packed with leaves.

Winfield, Pa.

[The use of nail supports as here described has been before mentioned. We have tried them, and so have others. The trouble seems to be lack of strength, and, moreover, they are unpleasant to handle; but some, doubtless, will like them.—ED.]

## BEE-MOTH.

### How and Why it Becomes Destructive to Stored Comb Honey.

BY WM. W. CASE.

It is not the intent of this article to enter upon a dissertation on the bee-moth, its life, habits, etc., but to answer the oft-repeated question, "Why is it I can not keep my comb honey from being ruined by the bee-moth unless I fumigate it at least twice?"

The quality of honey is never improved by sulphur, and quite often it is more or less injured by the fumigation—a process never necessary if we rightly know the conditions under which the bee-moth becomes destructive. There are but two causes of damage to comb honey by the bee-moth. The first is slovenliness; the second is ignorance. Now, it is a well-known fact that the larvæ of the bee-moth, like all other larval life, can not grow and develop without some source of nitrogen, and that, deprived of nitrogen, it immediately dies; and when we consider that the pure honey-comb contains absolutely no nitrogen, then we must also look to some outside source of destruction separate from the comb itself—a source of nitrogen.

In stored comb honey there are just two sources of nitrogen, without which it is impossible for larval life to develop. The first, isolated cells containing pollen; second, excessive travel-stain—that ear-mark of slovenliness in the bee-keeper. No matter how healthy a larva may be at hatching, unless it can immediately find some source of nitrogenous food it almost immediately dies, after, perhaps, having gnawed a pinhole ¼ to ½ inch in length—one not sufficient to mar a comb in the least—in fact, hard to detect with the naked eye, and leaving its little pink starved body in plain view on the surface. If it hatches in the immediate neighborhood of a cell containing pollen it grows with amazing rapidity, and in a very short time, especially in hot weather, may muss and spoil half a dozen sections. Prevention—store no honey containing a cell of pollen unless you expect to fumigate, and that thoroughly.

Again, if the larva hatches upon a comb more or less travel-stained it will live for quite a long time on the footprints, and in its frantic search for nitrogen it will eat almost all such cappings off before it dies, its roads (about the width of a common pin) running in all directions over the stained surface, ruining the comb, while it eventually dies of starvation—its work, however, being frequently laid to the lesser wax-moth, *Achræa grissella*, where, in fact, such lesser wax-moth does not exist.

Of course, such honey should never be placed with clean honey; in fact, there is neither business nor excuse for such honey at all, its very condition without moth damage rendering it unfit for market, and deservedly reducing the price from 25 to 40 per cent, and also lowering the tone of the whole honey market wherever exhibited.

It will be readily seen from the foregoing, that, if honey is taken from the hive when it should be—that is, as soon as sealed, and before becoming travel-stained, and each comb held to the light to reveal pollen-cells, it can be stored with the assurance that absolutely no damage can result to such honey from moth-larvæ.

A cupboard filled with more than 800 sections, without fumigation, during July, 1907, and packed for market the last week in November, revealed but three combs injured by moth-larvæ—one in which a cell of pollen had been overlooked; the other two, slightly travel-stained near the bottom, were well "roaded" as far as the stain extended.

The few if any sections containing pollen-cells may be placed where easily inspected, and, together with any travel-stained ones, may be placed in a box, and fumigated if necessary; for while travel-stained comb will rarely bring larvæ to full development, the larvæ will ruin the comb surface. Of course, where honey is left on the hive until much of it is badly travel-stained, fumigation becomes an absolute necessity.

Fumigating a large lot of honey may not always damage the quality; but it is also quite certain that the quality is never improved by it; and if not done by an expert it may not be complete enough to eradicate the larvæ, especially when well encased in roads, or, it may be, overdone to the extent that much of the surface assumes a greenish cast and a flavor condemned by most epicurean noses.

Baptisttown, N. J.

## AUTUMN OR SPRING FEEDING.

### Extracting Honey and Feeding Back, vs. Furnishing Bruised Combs of Honey.

BY J. GRAY.

I have read with interest the articles on the above subject. The truth lies midway between the two, and is equally applicable to your country and England. During my tours, extending over a considerable number of years, I have met many advocates of both systems, and have been enabled to judge the effects of both systems impartially.

Alexander is right in extracting to give the queen room. I doubt not many of your correpondents have reached the same point, only by an easier path, which I much prefer.

There are four vital points in successful spring work, each essential to the success of the colony, as follows: 1. A good queen; 2. Bees to cover her work; 3. Plenty of stores; 4. Stocks well established on good old combs. It's the third point this article deals with; it is unwise to force nature too early, hence the waiting for "settled warm weather." Bees void their fæces only on the wing, and active brood-raising means the consumption of more pollen, which means more fæces to get rid of. A bee fills its large air-sacs with air, when on flight, by closing its spirales and contracting its muscles. It is enabled by the air pressure to empty its colon.

Autumn feeding, or reserve combs of stores, are essential up to this point of the season. Now comes the strenuous work when the skill of the apiarist must be directed toward changing a few thousand workers into a mighty roaring force. It is turning food into bees, and it matters little if the food is inside or out.

*Pollen.*—Open a typical brood-nest. Here are four combs of brood, and on either side a comb containing freshly gathered pollen. In no case shift these pollen combs. It is where the bees require it. Seldom is it necessary to feed pollen, for, with settled warm weather, the bees gather enough.

If honey is in the hive we can extract it as per the Alexander method, and feed back, or let the bees extract it, which is easier and better. Take a comb of honey; bruise it—that is, flatten it down with your spatula till your comb is level and every cell-capping broken. Place it in the center of the brood-nest, and at once the bees set to work to clean up and remove the honey, leaving a full comb nice and clean for the queen to occupy. In carrying out this work, the queen is fed more lavishly; the more the queen is fed, the greater the number of eggs, and soon she will be laying the weight of her own body in the course of twelve hours. In fourteen days this operation can be repeated, using two combs, one each side of the center comb. In fourteen days you can repeat the process, only this time your ten-frame hive can spare one comb of sealed brood and adhering nurse-bees to strengthen weak colonies. Thus the strong stocks become feeders to the weak ones; and if we reach full strength right through our apiary ahead of our harvest, new colonies can be formed. Feeding during this great activity of the colonies, much water is required, and also some feed. Take a vessel; fill it with pebbles; make your feed one pint of water to one pound of sugar, and fill the vessel. There is no fighting; but if the unexpected happens, it is easily stopped by filling up the vessel with water instead of syrup. Your feeder acts as a barometer to the various sources of nectar, for the feeder is quickly deserted for the natural source.

The method outlined means opening up the stock periodically, and feeding. Alexander reaches the same point by extracting and feeding back. The difference in the two systems is, in the first, the bees do the extracting; in the second, the apiarist does the extracting. It is for each of your readers to accept the way that best suits his locality.

Long Eaton, Eng., June 1.

## SUGAR SYRUP VS. HONEY AS A WINTER FOOD.

### Does it Pay to Trade Sugar Syrup for Honey?

BY LEO. E. GATELY.

Some eight years ago some bees came into my possession which the owner had intended to destroy. After removing all of the honey that was fit for table use these bees were taken home late

in the fall, and fed about half a dollar's worth of sugar to the hive. Imagine my surprise when, the following spring, they came out ahead of any thing else in the yard. In an experimental way, sugar for winter stores was tried on a fair part of our apiary the ensuing year; and the results obtained were so gratifying that, of late years, it has become a part of our system to feed every colony for winter.

When using the Langstroth hive, very little feeding was done; and for those wishing to avoid fall feeding I can recommend the Langstroth or a deep hive as being admirably adapted to that end. Situated as we are, in what one might call a rather poor locality for bees, where there is no heavy flow, but a moderate one lasting throughout the summer season, bee-keeping in such hives is unprofitable. Under such circumstances the brood-chamber will become literally jammed with the choicest honey, while supers will be left comparatively empty. It was for this reason that the necessity for changing from the Langstroth to a shallow frame became imperative.

A frame 5½ in. deep, properly handled, will throw most of the honey into the sections, when sugar syrup can be profitably substituted for winter stores. At the current prices at which honey and sugar are being offered, there remains no question as to whether trading sugar for honey can be made to pay; at the same time, it is true that the feeding of the sugar syrup can be gone at in such a way as to be decidedly unprofitable. In order to put the practice of winter feeding upon a paying basis it is, first of all, essential that the feeding be done at such a time and in such a way that the loss in syrup while being stored be reduced to a minimum. The amount of unsealed brood that may be in the hive at the time the feeding is done will usually determine the extent to which this shrinkage will occur. I have seen as much as 50 pounds of sugar fed to a colony, in small amounts, at a time when brood-rearing was at its height, and there would be less stores in the hive at the finish than before feeding was begun, though the combs would be solid with brood in various stages of development.

ANOTHER SMILE THAT WON'T COME OFF.

Mr. Chalon Fowls, of Oberlin, Ohio, numbers among his customers an amateur bee keeper who has the faculty of seeing the bright side of life under adverse circumstances. This picture, sent to Mr. Fowls as a postcard, shows that it pays to "grin and bear it."

While there are other causes for the loss in syrup while being fed, such as the condition of the colonies, atmosphere, rapidity with which it is given, density, etc., the principal factor will generally be found to lie almost wholly in the season. Too much stress can not be laid on this point, for it is the key to the whole situation. If feeding for winter be begun directly after harvest, you need not be a bit surprised if there is a loss of one-half by the time the syrup is stored and sealed. Very little feeding during the warm months will usually start the queen to laying heavily, and wax secretion will begin, even if no new comb is constructed.

Rapid feeding, I find, lessens the shrinkage in syrup fed to bees. Especially is this noticeable when feeding is done a little early in the season. Later, when the frost has stopped pollen-gathering, so egg-laying will not be started, smaller amounts may be safely given.

One other point deserves consideration; and that is, the density of syrup fed for winter stores. Regarding the shrinkage when a thin syrup is used, I can not agree with some who claim that no difference can be observed between it and that having a greater density. Too thin a syrup has at least to be worked over to a greater extent by the bees before capping, and thus becomes a further drain upon their energies, which should be conserved as much as possible at the approach of cold weather. For winter feeding we generally use a syrup containing three parts of water to four of sugar; but we prefer a two-to-three ratio to one half-and-half. For spring feeding, the latter is about right.

Fort Smith, Ark.

[We believe it is generally considered throughout almost all beedom that sugar syrup as a food is superior to honey for winter. Experiments conducted over many years by our best bee-keepers have shown this beyond a question. Where the bees have a fine grade of extracted honey they will come out almost as well—so well, indeed, that it is not generally considered profitable to extract the honey and feed syrup. The cost of the labor and the loss in feeding will make up for the difference in the price secured for the honey over the sugar.

But our correspondent finds it profitable to substitute the syrup for the honey — not by extracting, if we may judge by what he writes, but by so placing the shallow frames that the honey in them will be carried into the supers, where it will be in marketable shape. If he can make the bees do the extracting, or, rather, move the honey into sections, there is no question but that it will pay to trade the sugar for the honey that was taken away in the supers. But it is not always that bees will take honey from one compartment of a hive and put it in another. A good deal depends on conditions, and on how the hive is manipulated. We shall be glad to have our correspondent tell us just how he does it, for therein, it would appear to us, is the secret of his success.

We also wish to indorse what Mr. Gately says regarding the losses that one encounters in feeding, especially when unsealed brood is in the hive. If the hive is full of old bees, say during the latter part of August, after a heavy harvest, the sugar converted into brood or young bees is not a loss, but a splendid investment. Indeed, after a colony has gone through a honey-flow it will have a lot of worn-out bees which will die off in the fall or winter; and unless there are a lot of young bees brought about by a late honey-flow or by feeding, the probabilities are that such a colony will succumb before spring. By feeding the thin honey in little dribs in the fall, there will be a large shrinkage; and if there should be a lot of young blood already in the hive, with very few old ones, such kind of feeding would, to a great extent, be unprofitable. We are now using a thick syrup, and giving it in large feeds where we only desire to supply a colony with stores; but if the colonies generally are short of young bees, then we feed to stimulate. It seems to be the verdict now that it is much more profitable to feed in the fall than in the spring.—Ed.]

## THE CALIFORNIA SAGE.

### Some of its Enemies; Raising Queens Above Excluders.

BY M. H. MENDLESON.

Mr. Ralph Benton, of Berkley State University, has been sent as a representative to investigate the sage-worm that is doing us so much harm here. He is competent, and doing good work. He is also experimenting in other lines of the business. Results will be published in bulletin form. Mr. Benton is teaching bee-keeping at the college, fitting young men to assist in and take charge of apiaries. Mr. Benton uses good judgment by visiting bee-keepers on this coast, getting information advantageous to his teaching. He has been making frequent trips among us. He has a fine disposition, and is capable, and is well liked at the college.

Dodder is spreading at an alarming rate among the sages and other honey-producing plants. It also does much harm in the alfalfa regions. It is a yellow fungous growth, attaching itself to the sages and other plants, and saps the life from them. It produces seed which drops to the ground and takes root (during the wet season), then attaches itself to the plants. It worries me considerably, and I shall watch its development and general results. I have never seen so much of it as this season.

Much rust, also, is forming on the sages, turning the leaves yellow. The University professors think this rust is not harmful, but I notice that the sages are drying up wherever this rust affects it. Lack of moisture in the soil might be the cause; and cloudy, foggy, dewy nights might also affect it.

There was much frost-bitten sage this season, the frost affecting the new growth only. It then turned yellow, and new growth (after good rains came again) was checked later, from lack of sufficient moisture to develop it.

The great number of worms on the sages is remarkable. They eat to the base of the bloom and destroy the source of secretion, like the cutworm. These worms can not withstand extremes of heat from the run's rays, and yet they can withstand a much higher temperature than the cutworm if we attempt to destroy them. The amount of heat or temperature that will destroy them will be reported later on. In the 80's they were destructive near the coast. Each season they seem to be on the increase.

All the enemies of our honey-producing plants seem to be on the increase. I think this is caused by conditions unfavorable to nectar secretion, which conditions, in turn, are favorable to their development. Cool cloudy weather is favorable to the development of the cutworm; the same for this worm. The difference is, these sage-worms are so very much smaller that they can get in the shade away from the rays of the sun.

For the past few years California has not been the great honey-producing country as of yore. Bee-keepers here are of a hopeful, persevering class; but these continuous adverse seasons are a trial to any patient person, and eventually will cause many to look for other sources of a livelihood.

For the past few weeks I have been quite successful raising many fine virgins above a queen-excluding brood-apartment, to supersede old worthless queens below; but one needs plenty of bees in the super to protect and keep cells warm. If there are insufficient bees in the super to cover cells well, then I raise up some capped brood and some advanced larvæ. There must be plenty of bees in the super, with some honey coming in, to insure success.

Heretofore I have had many fine queens raised and fertilized from the super, the old queen continuing egg-laying during the whole process—a continuous increase of bees coming on without loss of time. To me it is the best practical method to supersede old queens. and for divisions and surplus of queens for out-yards during the beginning of the season, and especially during short seasons when laying up honey for winter stores. It is a poor success when the honey-flow slackens, for then cells will not be drawn out. I am thankful to Mr. Doolittle and others for this process, with some of my own methods combined.

I had Mr. Erwin Williams, of Colorado, raise many fine queens for me one season by the combination of the Doolittle, Alley, and Atchley methods, all from the super. That season in two

of my apiaries there were about ten per cent of the colonies with two queens in a hive, and Mr. Williams had some difficulty in introducing until finding both queens.

These off seasons are the ones to supersede old stock when we can have more time to examine each individual colony properly.

Our seasons are so varied, or have been so for the past number of years, that we can not judge the future by the past. It is necessary to be prepared with one's cup right side up; consequently when good seasons approach, good results may be accomplished. It is best to have supplies on hand and made up, and protected from the vermin and the elements, even if we have to wait for the seasons of flow, providing one's means permit; otherwise it pays to do with fewer bees.

Speaking about the varied seasons in California, one year I extracted a carload of wild-sunflower honey, and also a carload from phacelia before the sages came in, but never before or since have I extracted much of either of these grades. The above bloom has since varied as to the time of its appearance.

I have noticed, with but few exceptions, that bees will not work on or gather from inferior sources when there is an abundance of the superior honey like that from the sages. In 1884 one colony out of 200 gathered exclusively from an abundance of mustard bloom; the 199 gathered from the sages. This was an exceptional extreme.

With but few exceptions these out-of-season blooms are our short seasons, or seasons of failure.

If all California bee-keepers would breed up their colonies during these seasons of partial failure they could greatly increase their profits. It is short enough as it is, and all are not able to do so.

I am now breeding from a queen whose colony has done wonders for such a bad season. It is now three stories high, and nearly full of honey, while many others are needing stores for the winter. An apiary bred up from a colony like this will produce good profitable results, and is of high value.

All California bee-keepers who have kept all weeds cut clean from their apiaries will save themselves a great deal of loss and trouble thereby. A clean apiary lets in the sun, keeps down dampness, and helps much to prevent spring dwindling. The worst-affected apiary from "tremors" I have ever seen was one shaded by weeds, and, consequently, damp. Many a fine apiary has been lost by letting the weeds grow and dry up, awaiting the destructive mountain fires during the dry season. Brush and weeds should be cleared away from the apiaries and buildings for a hundred feet or more. It pays to take time to do this.

By a clean-kept apiary many bees and an occasional queen can be kept from loss from vermin. Of course, skunks must be killed off also. They do a great deal of damage here as they are plentiful.

Much more honey can be produced by keeping obstructions to the entrances down for a good distance from colonies. To us, time is money: to bees, it is honey. It pays to be orderly. Putting things in their proper places saves time and worry when we need them. Hoes, shovels, etc., after using them, should be put away clean and bright. They will work the smoother and better, and it prolongs the life of them.

Many useful cleats and boards are wasted for want of order. If kept from under foot, and put in convenient places, it many times saves dollars when needing them. It is the cents that make the dollars. It does not pay to make a practice of piling up useful things promiscuously for future time to place. That time never comes.

When working with your bees, set your lids, supers, combs, contrivances, and tools within easy reach. Tools dropped on the ground are sometimes lost or ruined. You can do more work, and save valuable time, by saving useless steps.

It pays to watch your bees and give them proper attention at the right time. Colonies should not always be left to supersede their queens. Conditions are not the same with all colonies. I always have complete success if I am well and have time to attend to each individual colony. Many good colonies could have been saved this season if confined to space according to strength and a limited brood-apartment. It is better to have queens crowded to the limit with winter stores.

This is the season for those who are fortunate enough to have a fumigating-house. It would pay for itself many times over—that is, if one has a large number of empty combs on hand. Such combs are a boon in the following good seasons.

There will not be enough of the best honey produced in California this season for home consumption.

Ventura, Cal., June 10.

## SUPERANNUATED QUEENS.

### How They May be Utilized to Good Advantage in Rearing Queens; Why it is Not Best to Kill Queens on Account of Age; Conditions Under Which Two Queens Live Peaceably Together, and When Not.

BY R. BEUHNE.

[When Mr. R. Beuhne was here last spring, the plural-queen discussion was then on, or, rather, we had decided to close our columns to it for the time being. Mr. Beuhne has had a very large experience in rearing queens under the supersedure impulse, and using two queens in a hive at a time. Now that the discussion is opened temporarily we thought best to allow him to present one phase of the question that has not, so far as we remember, been exploited in these columns. It is our opinion that it will help to explain conditions when two queens will live together and when they will not. We commend this article to expert bee-keepers, who will find it of much value.—ED.]

Fifteen years ago I made use, for the first time, of the two-queen system for raising queens. Finding two laying queens, mother and daughter, in one hive, I removed the young queen to supply a queenless stock. A month later I found another young laying queen in the same hive, as well as the old one. It then occurred to me that, if I possessed a number of such hives, I could make use of them for raising first-class queens, such as are raised under the superseding impulse.

The first requirement I found was three-year-old queens in strong colonies. By reference to the record-book I located them and supplied them with a cell, each started by the Doolittle method. In almost every instance the grafted cell was accepted and drawn down into a beauti-

ful cell from which, in due course, I got a laying queen, while in every instance the old queen was also still there. I removed the young laying queens and started another cell in each hive. I continued this until the end of the season, leaving the last young queen in the hive to winter together with the old one, which latter would, however, always be missing in spring.

This method I practiced for three or four years; but being unable in this way to get sufficient queens three years old, I next tried it with two-year-old ones, and then trouble began. In some cases the cell was not accepted; in others the newly hatched virgin would kill the laying queen; and in others, again, the bees would kill the virgin queen, and once in a while there would be a swarm when the cell was sealed. I therefore abandoned the idea of using two-year-old queens.

To save time I gave some of the colonies with three-year-old queens from three to six cells each to raise, and when these were sealed I removed all but one, giving the spare cells in cell-protectors to other like colonies, from which the young laying queen had just been removed.

To save time still further I kept the spare cells, after removal, in a super till within a day or two of hatching, when I would use them as before; but here, again, I was up against trouble, for the newly hatched virgins were nearly always thrown out or worried. Evidently the bees had not yet become aware of the absence of the young laying queen; for when I gave another cell, some days after, the virgin would be accepted.

Thus I continued till three years ago, when I succeeded in getting another queen fertilized in a super above a queen-excluder and an upper entrance by putting a sealed protected cell in the lower chamber containing the old queen, and another one in the super containing some combs of brood in all stages. Thus I got two young laying queens at the same time from a hive having a three-year-old queen, the old queen laying all the time. To succeed, it is, however, necessary that the colony be strong, and bees flying freely from the upper entrance; for in a colony of only moderate strength the virgin in the super will worry at the excluder in an effort to get below, and usually enter at the lower entrance when returning from one of her flights.

Two years ago, having some old queens to spare which I wished to keep in reserve, I introduced these in the supers of colonies with old queens below the excluder, and next gave a cell each below and above the honey-board, got a young laying queen at top and bottom as I expected.

In speaking of old queens I do not wish to be understood as meaning useless and exhausted queens, but those which at three or even four years old are still of (and sometimes above) average prolificness. Old age in a queen is a quality, not a defect. I kill many queens before they are three years old, but never because of it. If we kill all queens when two years old we can not breed for the longevity of queens, and therefore of workers, which is such an important factor in honey-production.

Another use for three-year-old queens, I find in replacing inferior or undesirable queens, particularly at times when it is difficult to introduce young laying queens, owing to robbing or climatic influences. I replace the condemned queen with a three-year-old one and a week later give a sealed cell. Within a fortnight I have two laying queens. I then shift the old queen to another colony for the same purpose, and so on. During last season some of these old queens passed through six and seven hives in succession, and finally into nuclei. These old queens are always readily accepted anywhere.

For the purposes enumerated, I find the two-queen system very useful and profitable; but for the purpose of increasing the worker force and the yield of honey it is not a success in my experience. Early in spring, even a poor queen lays all the eggs the number of bees then in the hive can attend to. Later on the amount of brood raised is regulated more by the workers and the conditions of pollen and honey supply than the prolificness of the queen, provided the queen is of average capacity. If she is not, it is better to replace her than to give another queen to assist her, because her drone progeny is undesirable for breeding. Under unfavorable conditions queens lay numberless eggs which are never utilized by the bees. It is, however, possible that, under certain conditions, two queens in a hive may produce better results than one.

Tooberac, Aus.

[When Mr. Beuhne was here he made the casual remark that he could explain why it is that two queens sometimes can not be maintained in a hive, and why, under other conditions, they may live in peace. Said he, "You must have considerable difference in their ages before they will work together. The old queen must be failing, or at least three years old, before she will tolerate a younger one by her side. Of course," said he, "during the honey-flow, by use of perforated zinc, two queens of the same age can be kept in a hive; but after the harvest one of them will be missing." In the case of mother and daughter or of a young and a three-year-old queen there seems to be a sort of notion in the colony that the old queen will soon die, and whatever good she may do in egg-laying is just that much to the good. Apparently the young queen acquiesces in it—at all events, the old queen sooner or later disappears.

If this teaching or this theory is correct, it may explain a good many things in bee-hive economy that have hitherto been a little hazy.

But it seems Mr. Beuhne visited Dr. C. C. Miller, and during the course of that visit they discussed this very question. We will now let the doctor tell what he thinks of it.—Ed.]

## THE EUCALYPTUS HONEY OF AUSTRALIA.

### Mating Queens from a Colony that is Superseding an Old Queen.

BY DR. C. C. MILLER.

There are some bright bee-keepers in Australia, even if they do stand on their heads. I had an interesting call lately from one of the foremost —Mr. R. Beuhne. I had always pronounced his name Bu-ny, thinking of him as an Englishman; but a lingering brogue betrays his foreign

origin, even though he left Germany 25 years ago, and so his name is pronounced Boi-nay.

Mr. Beuhne is a genial and interesting talker, and I learned some things. I have always admired the persistency with which Australians seek to make a London market for their eucalyptus honey; but after having sampled it I could hardly believe that any but depraved tastes would take to it kindly. But I've changed my mind about eucalyptus honey. Mr. Beuhne kindly brought samples of half a dozen kinds, and some of them, at least, are very palatable, and I think one would come to be very fond of them.

One reason why Australian honey is almost entirely extracted, is that, about the time sections are sealed, a plant comes into bloom that they call dandelion, although it is not at all like our dandelion, and the surface of a section is discolored by this dandelion.

One feature of that country I should not like. The heat and dryness is at times intense, and grass becomes so dry that, if fire starts in it, even though short, it may run for miles. If one wishes to fire any thing like a brush-pile, he must give 48 hours' notice to neighbors, and then be responsible for any damage that may occur.

A year or so ago my brother-in-law, Ghordis Stull, hitched a horse at a post quite a distance from the bees—so great a distance that in all reason it ought to have been entirely safe. A number of bees attacked the horse savagely, stinging it about the head and neck. My wife insisted that it was because kerosene had been rubbed on the head and neck; but I hardly believed it. From what Mr. Beuhne says about kerosene as a disturber in an apiary, she was probably right. He says that, when he is about to go into an apiary, if for any reason he has occasion to move a kerosene-lamp, instead of touching it with his own fingers he gets some other member of the family to move it for him. The odor of it at a hive not only enrages the bees in that hive, but for two or three hives distant. If that be correct, it is hardly the right thing to use kerosene in lighting a smoker.

G. M. Doolittle, at the close of the harvest, advises putting a queen-cell of choice stock into any colony likely to supersede its queen, and in most cases the occupant of the cell becomes the ruling sovereign. Mr. Beuhne goes a step further. Into a colony that has a three-year-old queen, still better a four-year-old, if she has vigor enough to keep up a fair supply of eggs he puts a queen-cell, and then when the young queen lays in company with the old queen he removes the younger queen and repeats the performance. This he has been doing for a number of years, and last year he was successful in doing so right in the middle of the harvest.

I'm not sure about it; but if I understood correctly, Mr. Beuhne does this with full colonies. Now, if this be generally successful in the hands of others, why would it not be a good thing to keep one of these aged dames in a nucleus? Would it not be more in the line of nature to have a young queen constantly superseding instead of having queenless nuclei? Is it not generally true that a nucleus freshly formed is j st a little better than one that has been used for rearing one or more queens? and would not an old laying queen keep the nucleus constantly fresh?

Since Mr. Beuhne was here I've tried the thing on a small scale, only instead of a cell I've given a virgin to the nucleus. It has not been a great success. Possibly a cell is better than a hatched virgin. Possibly the old queens were too nearly played out. At any rate, so far the old or the young queen has disappeared, or both.

Somehow I'm not a great success with virgins. Others tell about a virgin killing the old queen if she gets into a strange hive. With me the virgin is taken into custody by the workers. If a young queen on her return from her wedding-trip enters the wrong hive, I am told she will kill the old queen. I once saw a young queen as she entered the wrong hive on the return from her wedding-trip, and she was promptly balled by the workers. I can have a very young virgin accepted in any colony, no matter what the age of the reigning queen, and she is kindly treated while a baby; but as soon as she begins to put on airs as an aspirant for the throne she disappears. I'm not sure but I've always failed when the queen was old; but the point I'm making is that with me the entrance of a strange virgin is not likely to endanger the queen.

This year I had an unusual case. No. 42 had a 1904 queen. I watched the case closely. May 9 I saw a virgin in the hive, and the presence of eggs showed that the old queen was present—at least had been within three days. May 22 I saw the old queen and a sealed queen-cell, but I suppose the virgin had disappeared. June 2 I saw a virgin that I suppose came from the sealed cell. June 9 I saw both queens. June 13 I clipped the younger. June 26 I was surprised to find eggs in queen-cells, and on searching I failed to find any queen present but the 1904 queen, easily recognized, not only by her old appearance but by the more distinctive fact that both wings were clipped. Poor old thing! I killed her. That young queen may have disappeared because—but that's another story.

Marengo, Ill.

## THE CAUSE OF THE DIFFERENCE IN COLONIES.

BY WM. M. WHITNEY.

*Mr. Editor:*—Noting your comments on page 949, Aug. 1, regarding the difference in the conduct of colonies of bees under apparently quite similar circumstances, I feel like making further explanation of conditions which often exist in the spring, and which are often puzzling to bee-keepers. The case you mention, it seems to me, raises an important question, and one that should set an apiarist who is given to experimenting to investigating. Take the case as you give it in your last statement, that "there was a moderate amount of brood, a large amount of honey and plenty of storage room," unless you knew the queen to be old, which sometimes is indicated by drones being found in worker-cells (but then it would seem that there should have been an attempt at supersedure), I should be more than half inclined to attribute the cause of listlessness and lack of energy to something else than a poor queen. In the case you mention, your conclusions were doubtless correct; but I venture the statement that in seven cases out of ten, as we or-

dinarily find them, the cause is something else than a poor queen. Carefully examine such a colony in early spring, and you are very likely to find the queen slim, or starved in appearance; "spring-poor" bees, most of them old; the cappings of the honey hard and smooth, and about as difficult for the bees to uncap as it would be for them to gnaw through the skin of a grape or a plum. I have had just such cases, and have watched the bees digging away for dear life to get a bare living; but after giving a couple of such combs a good scratching, then putting them next to the brood, *presto!* the whole aspect is changed; the listlessness and apathy of the colony are gone, and activity is apparent everywhere.

This suggests stimulative feeding in early spring, which I have always practiced since learning how to do it. When there is honey enough in the hive, of course it is not necessary to feed; but scratch the old comb, which amounts to the same thing.

I have had many cases parallel to the one you mention; but I will mention one specially noted at my Kankakee yard a few years ago, that of a beautiful queen not quite a year old, but a colony dragging along all summer doing only enough to live and put in honey for winter; but the next year her colony was one of the best. The same thing was true of the granddaughter of your famous old queen the next spring after getting her. She was found in early spring, lean and off color, laying drone eggs in worker-cells, and nearly half the occupants of the hive were drones; but by carefully feeding the bees she became fat and of her usual bright color, and, besides giving me, during the summer, several queens, she gave me, by division, three colonies of bees.

This I have written up before; but some have seemed to question the accuracy of my statement; but never was statement of matter of fact more strictly true. I am thoroughly convinced, as I before stated, that in seven-tenths of the failures of colonies, excepting in cases of old queens, the fault is with the apiarist. Many a good queen has been hastily condemned and guillotined.

Evanston, Ill.

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## ARTIFICIAL LEVULOSE.

### Why Honey is a Suitable Food for Those of Weak Digestion.

BY W. K. MORRISON.

At the present time the United States is consuming considerable quantities of artificial sugar in the form of saccharine, which is 550 times sweeter than ordinary refined sugar. In a number of countries this substance is hedged about with restrictions so that its manufacture has been greatly curtailed. In Germany there is now only one factory making saccharine, and it is now considering whether or not it will apply to the government for an indemnity and cease to exist. By careful tests made by the best doctors in Europe, this substance has been found deleterious to the human system, even in very minute quantities, either producing kidney troubles or aggravating them. It is said Dr. Wiley is in favor of suppressing saccharine, whereas President Roosevelt takes an opposite view. One thing is clear—it is not a useful food at all, and it would do no harm to prohibit it entirely.

The readers of Gleanings are not kept in ignorance of the glucose controversy, but it seems we shall ere long have to reckon with a new rival to honey—namely, artificial levulose. A few of our readers may not know that honey contains dextrose and levulose in about equal proportions. Tupelo, for example, has an excess of levulose, and alfalfa an excess of dextrose; but ordinary honey contains about equal quantities of each. Levulose does not granulate as dextrose does.

Levulose is considered excellent for persons suffering from *diabetes*, or "kidney trouble," because granular sugar aggravates the disease; hence honey is the only sweet which such patients can be allowed to eat. Tupelo honey would be just the thing for these sufferers, though there are probably not a dozen doctors in this country who are aware of the fact, and yet *diabetes* is a comparatively common disease which often leads on to death.

At the international congress of the Sugar Industry held in Liverpool, in April, 1908, Mr. Sigmund Stein, the noted sugar expert, read a paper advising the manufacture of levulose on a large scale, for various reasons. It may be used for medical purposes. First, as a food for diabetics, he says:

> Diabetes involves an incapacity for using carbohydrates as nourishment. More or less of the sugar which is passed with the food into the body, be it saccharose or lactose or dextrose, passes through the body and acts like a poison. Levulose is recognized by the highest medical authorities as the only sugar which most of the diabetics can partake of, and which can be entirely assimilated by the organisms. Saccharine, which is used by the diabetics at present, is harmful to such patients according to the investigations of Prof. Stoklasa and Prof. Neumann.

Second, as a preventive of hyper-acidity of the gastric juice. Unlike saccharine, levulose has the power of neutralizing the acids of the gastric juices. Third, as a food for consumptives, he says:

> Within the last few years a number of well-known medical authorities have recommended the use of large quantities of levulose as a remedy against consumption in the first and second degree. According to these authorities, levulose acts in this disease like a specificum, and cures have taken place, in many cases, through the daily use of several ounces of levulose mixed with the food. Without doubt the use of levulose for this special medical purpose will be better known when levulose is manufactured and sold at about the same price as our ordinary sugar. Consumption and tuberculosis are spread, as is well known, among a seventh part of the population of most countries of Europe. Levulose once manufactured cheaply will be the sugar which the consumptives could exclusively use.

Fourth, as a food for infants:

> Many medical authorities have lately recommended levulose for infants, as levulose has not the aperient effect of lactose. Medical authorities have further stated that levulose is an excellent substance for the nourishment of infants which suffer from wasting illnesses. Levulose has increased the weight of such children 300 to 400 grammes per week. Professor Fuerst stated that levulose deserves the preference over milk sugar for the nourishment of infants, because the first is sweeter and has not the aperient effect.

Fifth, in industries: In confectionery to prevent crystallization; in caramel to replace glucose and invert sugar; in preserves, in the improvement of wine, and in aerated waters.

By using inulin, extracted either from dahlia bulbs or chicory roots (dandelion might do), Mr. Stein estimates the cost of manufacture at 12 cents per lb. At present it is sold at $1.20 per lb. At the former price he thinks there would be a great demand for it.

We think Mr. Stein is mistaken. It is an easy matter to separate out the levulose in honey, and in most cases this would not cost 12 cents per lb., particularly so in tropical countries, where honey is quite cheap. The honey of the stingless bees contains an excess of levulose, showing the natives are correct in claiming it as a first-class medicine. In the valleys of the Amazon and Orinoco great quantities of such honey could be collected with ease at a price much below 12 cents a pound. It would be far superior to inulin-levulose. Bee-keepers owe Mr. Stein a vote of thanks for proclaiming to the world the great value of levulose as a sweet for sick people; but he ought to have stated also that honey contains levulose in large amount. Moreover it is in a palatable form, which inulin-levulose would not be.

It might pay tropical bee-keepers to produce levulose, even at one-fourth the present prices.

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### FUMIGATING COMB HONEY IN TIGHT STORE-BOXES; HOW TO MAKE THE BOX AIR-TIGHT.

A very convenient and inexpensive way to fumigate section honey with carbon bisulphide is to line a drygoods-box of convenient size with heavy manila paper, pasting the paper in and taking care to have the paper lie smoothly over the whole inside of the box, so that there will be absolutely no chance for leakage. Then put in the sections. This may be done by placing them in loosely or in shipping-cases, putting 16 sections in a 20-section case, and placing the shipping-case in the fuming-box so as to allow a free circulation around every section. Now put the carbon bisulphide in saucers on top of the sections, then cover the whole with one or two heavy blankets, taking care to lay two or three sticks across each saucer to prevent the blankets from coming in contact with the bisulphide. The honey will be more thoroughly fumigated than in a room specially prepared, as the fumes are required to fill only the space actually occupied by the honey. In fine weather the box may be set out of doors or under a shed, thereby running no risk of an explosion by having the fumigation done in a house. Another advantage is that a hundred or less sections can be treated, instead of waiting for a larger quantity to save bisulphide, and by so doing run the risk of worms hatching and damaging the honey. E. MEAKER.

Auburn, N. Y.

[We desire to sanction the plan given by our correspondent. Ordinarily, it is better to make use of a tight box for fumigating rather than a whole room, for the gas can be confined better so that less of the liquid need be used. If a very large quantity of honey must be fumigated, perhaps a small tight room is better; but more often two or three tight boxes can be used more successfully.

One advantage of the box not brought out is that the honey may be removed and a new lot put in without admitting an entire change of air as would be the case if a room were used. By holding the breath while leaning over the box, the honey can be removed quickly. If an entire room were filled with gas, it would have to be ventilated before one could enter it to take out the honey.

So short a time as half an hour is sufficient to kill all worms; and although a somewhat longer exposure might be necessary to kill the eggs, eight or ten different lots of honey could be fumigated in a day. We have successfully used a large empty extractor-can for the purpose.—ED.]

### ARTIFICIAL BEE-PASTURAGE FOR NEW MEXICO.

We should like to know what we can get to make honey between fruit bloom and sweet clover. The chief crops here are apples and alfalfa. The apples bloom early, and the first crop of alfalfa is cut before it blooms, which leaves practically nothing for the bees until sweet clover blooms. We are right by a 500-acre apple-orchard, and spraying was done last spring while many of the trees were in bloom, damaging us quite a lot.

Our climatic conditions here are somewhat similar to much of Colorado. The nights are quite cool until late in the spring, and there are times when we get no rain to amount to any thing for months. All farming and fruit-growing is done by irrigation. We are getting plenty of rain this fall. Apple-picking began in the big orchard Aug. 24. People come for miles — yes, a hundred miles and more — and camp outside the orchard during picking.

MRS. LUCY C. SLEASE.

Roswell, N. M., Sept. 9.

[We are not familiar enough with the locality to suggest any plant which would yield nectar between apple-bloom and alfalfa. Indeed, there are very few plants, unless they yield valuable seed or forage for stock, that it pays to set out for honey. If a locality does not furnish something naturally to intervene, the only thing the bee-keeper can do is to feed if the bees require stores. Possibly yellow sweet clover, which blooms about three weeks earlier than white sweet clover, might help out a little. Can't you grow alfilarella, or pin clover? It is fine for stock and good for bees. It does not require irrigation. If any of our subscribers in the vicinity or elsewhere can suggest any forage that has intrinsic value outside of the nectar it furnishes the bees, we shall be glad to have them do so.—ED.]

### TWO QUEENS WINTERED LOOSE IN ONE HIVE.

In the fall of 1906 I had two weak colonies. I got these colonies side by side by moving them a short distance each day. When they were close together I placed one colony on five frames in a Dadant hive which would hold ten frames and a division-board. I then put a solid division-board in the center of the hive, and the five frames containing the other colony on the other side of it, tacking screen wire on top of the brood-frames so no bees could pass from one side to the other. To keep the bees from mixing up at the entrance I fitted a board to separate the front of the hive and thus make two entrances. My object was to

retain the natural heat. These colonies did not contain over a gallon of bees each, and they came through the winter of 1906 in fairly good condition. In April, 1907, after reading Mr. Alexander's experience with two or more queens loose in the same hive I examined this colony to see if both queens were alive. I found they were, then I removed the division-board, let them settle it in their own way, and during the summer I often found the two queens on the same side of a comb. I was highly elated over my success; but my spirits fell when Mr. Alexander said he had failed in wintering his queens. We winter our bees on their summer stand with a protection of straw or leaves about six inches thick held in place by 18-inch poultry-netting. As soon as the weather would permit this spring, which was the 25th of March, I examined this hive and found the two queens enjoying the joint parentage of as large a colony of bees as there is in Illinois.

LaHarpe, Ill. O. A. Pittam.

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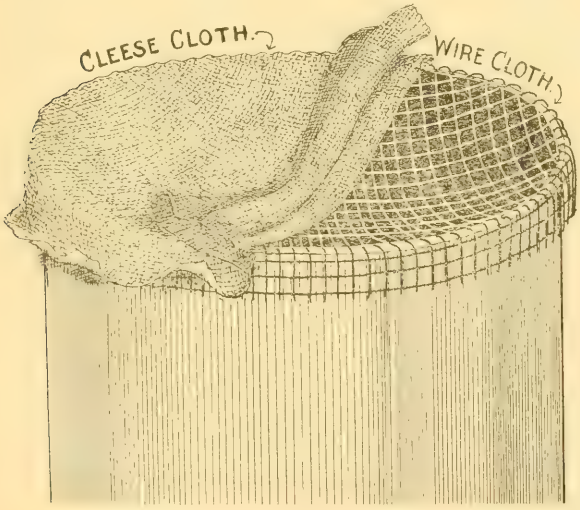
### A NEW WAY OF HOLDING A CHEESE-CLOTH STRAINER.

Several have spoken of tying cheese-cloth over the can, very tightly, to keep it from slipping down. I made a wire rack of heavy mesh wire cloth, and I hang it on top of the can. Or, if I want the strainer lower in the can, I hang it at the height desired with four wire hooks. Then I lay the cheese-cloth over the can and press it down to the wire rack, and it is always ready to use, and does not need tying. In this way it can be changed any time. G. W. Haines.

Mayfield, N. Y.




HAINES' METHOD OF HOLDING A CHEESE-CLOTH STRAINER.

Instead of tying the cloth around the top of the can, heavy wire cloth is used to support it.

[The arrangement for holding up the cheese-cloth we believe to be excellent. The supporting wire cloth from beneath makes it possible to remove the cheese-cloth for cleaning much more readily than when it is tied.—Ed.]

### QUEENS KILLED IN MAIL-SACKS.

I am satisfied in my mind, after making experiments, that it is almost certain death to bees and queens hung up in mail-pouches to be caught by trains going 30 miles per hour or more. Could you not, through the proper channels, get the postal authorities to make a ruling that mailing-cages containing bees and queens should not be put in such pouches? E. E. Lawrence.

Doniphan, Mo.

[We know that queens have been injured and killed in this way; but many have received the treatment without any apparent harm. We doubt if such a ruling as you suggest could be secured. The only thing for one to do who lives at a point where mail is thrown off in this way is to direct the queen-breeder to send the queen to a post-office nearest where mail is delivered when the train is stopped.—Ed.]

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### HOME-MADE HIVES DURABLE; COMB HONEY WITHOUT SEPARATORS.

On page 943, A. D. Shepard, in speaking of home-made hives, says his preference is to halve the sides and ends. Now, to halve the sides is worse than useless. Halve the ends only; then nail the rabbet solid. One can nail both ways, and, if it were painted, I believe such a hive is as good as a machine-made dovetailed hive.

You say on page 952 that honey over hives having foul brood, while not fit for brood or bees to seal, is good enough to sell or eat. Is not surplus honey free from foul brood? If it is not, is it fit to eat?

I notice a great deal of discussion about using or not using separators. I do not think people make allowance enough for difference in bees. Some do finely without separators, while others would do poorly even with them. Albert I. Mills.

Ignacio, Colo.

[While honey in supers over a foul-broody colony would not be apt to contain any of the dead brood, yet some of the germs that produce the disease might be found. While such germs have never been injurious to a human being, they would develop under certain conditions if the honey which contained them were fed to the brood. For this reason it is not safe to feed honey from a foul-broody hive to the bees unless it has been thoroughly boiled at least twice. The honey should be cooled very rapidly after the heating.—Ed.]

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### A LOUD HUMMING HEARD IN A HIVE.

The other day, as I was walking around in my little apiary, I heard a hum in one of the hives like that of a bumble-bee in an empty barrel. I could hear it 40 to 50 feet away from the hive. The hum lasted about a minute at each time for the last three or four days. I may be wrong, but I think it's the queen. M. D. Breon.

Millheim, Pa., Aug. 24.

# OUR HOMES

By A. I. Root

Render therefore unto Cæsar the things which are Cæsar's, and unto God the things that are God's.—MATT. 22:21.

*Mr Root:*—I have enjoyed very much your articles in GLEANINGS; and as you seem to be in the business of "helping" people, may I bring to you my problem, asking that you will please help me solve it? It is that of investing money safely. There is no one among my acquanitances to whom I care to appeal. I am one of that class of women who must earn their own living (by the way, I do it mostly by raising chickens in a small way). I have saved a few hundred dollars, and I feel that it must be placed in absolute safety, for it is all I have, and health is failing. I have thought of investing in government bonds. I wish to invest $1000, but I have no knowledge as to this as an investment other than that it is supposed to be safe. Any information or help you may offer me will be very gratefully appreciated.

The letter above came some months ago; but it has been so much on my mind that I have just decided to make it the subject for this Home paper, omitting ths name and address for obvious reasons.

In the first place I wish to thank the lady for the very high compliment she pays my poor self in thus addressing me. Under the circumstances she feels that her dollars, the hard earnings of the best part of her life, *must* be placed in absolute safety, for it is all she has. Every daily paper reminds us of the folly of keeping money hidden away somewhere. Less than a week ago a man sold some stock and gave the proceeds to his daughter to carry to the bank. During the following night a couple of demons in human form took him out of his bed and demanded the money. When he told them he had sent it to the bank by his daughter they thought it was a subterfuge, and then burned his feet with hot irons, until he will probably be crippled for life, in their endeavor to make him tell where he had hidden it. Old people and poor helpless women have been again and again cruelly tortured in just this way. What shall the people do with the money they work hard for and lay up for a rainy day? Most people say, "Put it in the bank;" and we supposed for a time that our national banks were perfectly safe. But there is a difficulty—at least there has been so far—in the way of creating banks that will be absolutely safe. I shall have to confess that I am not financier and politician enough to understand these matters. I simply know that every little while some one whom the people have trusted proves to be only a wolf in sheep's clothing; and poor widows and washwomen, and others who have worked hard and saved a little for that oft-mentioned rainy day, have found their savings for years, and perhaps for a lifetime, gone up in smoke. It is not *men* only who do these things. Mrs. Chadwick's shameless record shows that women too will ruthlessly, and seemingly without a scruple, rob and throw away the hard earnings of a multitude of poor people.

Lately it has been the fashion to commit suicide when a man found he was at the end of his string. There seems to have been a discovery—at least the prince of darkness would persuade men that it is a discovery—that one can escape the disgrace and humiliation of having it come to light that he is nothing but a traitor, by putting an end to himself. Now, I do not believe that any man or woman does escape or *can* escape in this way. One can, perhaps, avoid meeting *face to face* the innocent victim of his treachery by shuffling off this mortal coil; but does that end it all? is the deed wiped out? God forbid. There is a good deal of complaint made because the Bible seems to teach the doctrine of endless punishment. I suggested only recently that people who commit suicide to get out of trouble are probably only jumping out of the frying-pan into the fire; and the more I think of it, the more I am convinced that no one ever escapes his responsibilities by putting an end to his life. He was a sinner before he killed himself, and he is and must be, in the natural order of things, *more* of a sinner *after* such a death than he was before. This everlasting punishment we talk about is probably the remorse or shame of having wronged and ruined his friends who trusted him, and I believe it will follow him through all eternity.

Yesterday's daily told us of a poor man who was held up by robbers, and when they found he had only ten cents and a cheap watch they pounded him all the more because they were mad at him for their poor success; and the paper stated that he would be a cripple, probably, for life, as a consequence. This illustrates the awful depravity and hellish spirit that sometimes actuates human beings. I am convinced that, if we could trace up such cases as this, we should find that the open saloons of our land are responsible for the greater part of such characters, if not all of them. When the saloons are banished entirely, such events in human history will cease to exist to a great extent, if not entirely. Now, what shall I tell this good friend of mine? and what shall I tell thousands of other good friends who read these Home papers, who have faith in my poor self? Shall I tell them to send all their money to *me* because *I* am honest and fully responsible while all the rest of the world is bad as—I was going to say Thomas W. Lawson; but perhaps I had better not say it. God forbid. I do not want the money, and I have no place to put it except during a part of the year when we find it convenient to borrow money at the bank, and sometimes from our friends more or less. But there ought to be some good place to put money—some place easily accessible to *every man*, *woman*, and *child*. The good woman who wrote to me speaks about government bonds. If I am correct they pay only a low rate of interest, and you can not get your money again just when you want it. As a rule, I would advise every one to put his money out at the best savings bank in his neighborhood. If you do not know just how to do this, your best way is to go to some experienced business man, a consistent member of your church, of good reputation, and get him to advise you; and let us all hope and pray that we may soon have a *postal savings bank* such as has been so much talked about.

In my last Home talk I spoke about our American flag and what it represents. Now, this American flag ought also to represent a place where every man, woman, and child who lives under and devoutly believes in that flag, can place his honest earnings, and where no power on earth can wrest it from him. This *can* be done, and it is a burning shame that it has not been done already. In old times the dear Savior reminded us of the folly of laying up treasures on earth where

thieves break through and steal. Now, with all the other wonderful things that have come true in our civilization, it seems to me it is high time for our government to provide a place for these little savings, where the rewards of toil can be put where thieves do *not* break through and steal. The government can easily do it.

A good woman, a friend of mine for more than forty years, said to me just a few days ago that there is no one thing so much needed in the United States as a safe place for the earnings of America's children. It is a great comfort to me to know that there are those in my employ who have worked for me or for our institution, if you choose, for more than forty years; and these old friends of mine have long been in the habit of entrusting me with their surplus earnings. I mentally thank God that I can honestly say, each and every one of them has always had his earnings when he called for them. Well, this particular friend of mine was, years ago, persuaded to take some of her money away from me and loan it to another party—to a minister and his wife who wanted it; and I am afraid they suggested that it was not quite as safe with A. I. Root (with his craze for developing the Home of the Honey-bees) as it would be in *their* care, and so she let them have it. This man was a minister of the gospel, but he was in other business also. By the way, I have long had a sort of feeling that ministers of the gospel ought not to be very much engaged in other kinds of business or occupation. Of course, the pastor of a church wants some kind of recreation. I would by all means let him have some chickens, a garden, and a few hives of bees; but these things should be only secondary or a side issue. One who accepts and assumes the sacred calling of one of God's ministering servants, to lift his fellow-men out of darkness into light, ought to give all his energies and strength to that one thing. I do not believe in being half preacher and half lawyer or bee-keeper or any thing else. Well, this minister of the gospel died soon after this, and his financial affairs were in a very bad condition, his estate paying only a few cents on the dollar. His life was insured for a goodly sum; but I think that none of that money was used to pay back the poor hard-working girl whom he and his wife had induced to take her scanty earnings from a safe place, and give them into their care and keeping.

Now do not get an idea, dear friends, that I am boasting. As I look back I realize that there have been several times in my life when, had I died suddenly, it would have been a hard matter to pay every one every cent that was his due. And this brings me to the special point of this Home paper. Every one of us, especially those who profess to believe in the Lord Jesus Christ, should have his affairs in such shape that his wife or friends can readily satisfy every claim, if he should be called away suddenly by accident or otherwise. At one time during the past winter one of the younger members of our firm gave me notice when I was down in Florida that we had purchased more beeswax and basswood than we ever had before. As both of these commodities would surely be wanted, they felt as if The A. I. Root Co. ought to be prepared, as we always had been before, to take at a fair price whatever was offered. Of course, we have had to borrow at certain seasons to do this. I asked the question how much money we had borrowed to invest in these things. and what the basswood and beeswax were worth that we had in stock. The reply came that the wax and lumber carefully stowed away and fully insured amounted to more than the borrowed money; and I said, "Keep on taking what comes in through the regular channels of trade, but do not solicit any further shipments."

But a careful and substantial business firm should proceed rather cautiously in matters of this kind; for even beeswax and lumber may take a sudden drop in value; and this drop in value may make trouble. What I started out to say was that no follower of the Lord Jesus Christ should ever deliberately go into any deal or speculation that may render it impossible for him to hand over what is due at any time it may be wanted. Of course, special arrangements are often made that the money is not to be called for before a specified time; but every professing Christian should be very careful about getting into any sort of predicament, by accident or otherwise, whereby he absolutely *can not* do all that he agrees to do. The government could handle and care for the money belonging to working-people more surely than could any one single person. The best and most upright men are likely to die at any time; and, despite all precautions that can be taken, so far as I know there is no positive assurance that the children or others who take charge of the business after one's death will manage it as it was before. Unforeseen things are likely to occur. We can insure our property and our lives; but even insurance companies sometimes become bankrupt. People who fail in business often have comfortable homes that the law can not touch; but occasionally we see instances where the man who fails gives up his last copper to satisfy his creditors; and I hope that God will give me grace enough to give up my last copper and go to the poorhouse (if need be) rather than to feel that I had kept back one single cent of the honest earnings of any hard-working business man or woman.

There have been many warnings recently in the *Rural New-Yorker* and other periodicals against investing money in the various schemes and stock companies that are advertised. With the good prices that we have for all sorts of rural products—poultry, fruit, etc.—there seems to be an unusual number of people who have a little spare money to invest. But the *Rural's* advice, which I heartily second, is, do not invest your money in any of these institutions that urge you in papers to invest. And especially beware of those who tell you they can pay you a much larger interest than you can get around home. I am well aware that even our religious periodicals are giving place to such advertisements. I read one such only a few days ago, declaring that money invested with them would bring *14 per cent* sure. Have nothing to do with any such offers. I would almost advise that you stop having any paper come into your home that contains advertisements of that kind. Any honest person or institution that wants money can usually get it for 6 or 8 per cent. Of course, it makes some difference where only a small amount is wanted for a short time. Our savings banks usually pay

4 to 5 per cent; and you have a right to be suspicious of anybody who wants your money and agrees to pay you much more than the regular legal rate.

In the fore part of this paper I spoke of highway robbers; and in our large cities we have pickpockets who seem to have as little scruple in robbing women or a poor hard-working girl, perhaps a schoolma'am, as they would in robbing a man; and the writer of the letter that I have given is doubtless well aware that there are men and rascals who will resort to any hook or crook to get their hard earnings if they can find any way to do so. And let me say once more in closing, there is no one thing that is so much needed just now in this land of ours as some safe place provided by the government where every wage-earner can easily and quickly deposit his savings, and then just as easily and quickly get them back again when wanted. Let us work and pray for the speedy consummation of a postal savings bank.

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## "TO HIM THAT OVERCOMETH."

*Brother A. I. Root:*—You will kindly indulge me in a degree of familiarity in addressing you, for in the years that I have had the pleasure of reading the productions of your pencil you have come to be more than a friend to me though you know it not.

In your article for July 15, Homes department, I was not a little interested in your relation of experience with the mother hen—namely, the croppings of our own fallen nature not yet fully overcome. "To him that overcometh will I grant to sit with me in my throne, even as I also overcame and am set down with my Father on his throne.—Rev. 3:21."

The thought was so grand that I could not refrain from penciling it right now. The lesson from that faithful mother hen was that my well-beloved brother had not yet quite overcome the fallen nature in his conflict with one of the smallest and most harmless creatures that God had created.

Now, this is no indication that he is not one of God's chosen, for he is—only he had not yet fully overcome. To have completely overcome is one of the most glorious achievements of a redeemed soul. Try it, my brother; just let go and sweetly rest in the arms of Jesus, and then you can smile at Satan's rage or even the mother biddy that was so true to her own mother instinct formed within her by our own common Creator.

Now, if I were to want a mother chicken I would give much for this one, or a setting of her eggs, for she certainly is of royal blood.

Now, my brother, I know I am no better than you, nor do I believe I am half as good; but to me it appears I could not but have caressed that little princess of a hen and greatly admired her; further, have cozily wrapped her within a sack or something else until I could have gathered her little group into her retreat and then set her at liberty. But enough of what I would have done. Do you know the teachings of our Savior about love and mercy are as applicable on our part to the lower animals, since there is no appeal from our arbitrary rule over them, and therefore that, when any of the animals rebel against us, they can not understand God's law of love except by our example—"When thou art reviled, revile not again"? Therefore, because of our knowledge of this law and of their ignorance it is binding on us and not on them.

I once saw an example which I shall never forget. I was traveling in Iowa by private conveyance, and stopped over night with a well-to-do farmer. Every thing was in good style and on a rather large scale. Early in the morning I was up to visit with him his estate. We went directly to a large barnyard. In this yard were all the domestic animals, it appeared to me, that I had ever seen in my life, and, stranger yet, they all huddled together, or were not separated, and yet were quiet and showed a spirit of kindness that was universal with all. But the best of all the show was when the owner opened the gate and entered their midst. It was an apparent signal for a "love-feast," especially by each animal toward its owner. The horses and young colts, the cows and younger cattle, the pigs and sheep and poultry of every description — turkeys, geese, ducks, and chickens vied with each other in getting within reach of him, or in licking his hand or in hearing his kind voice of love. He moved as quietly and carefully as possible so as not to step on any poultry which were young. As he proceeded to feed and care for them he was especially easy to notice the trust and love between some of the colts or horses that excelled, apparently, a passing circus.

Now, if mankind were all filled with this spirit to the exclusion of any others, what a change, since, by nature, especially among the domestic animals, this spirit of trust and obedience is universal! for God has so created them. If man, instead of his fallen nature, could thus be filled with the spirit of our meek and lowly Savior, how many vicious horses would we have?

I had a favorite horse from her colthood, that was not of the mildest disposition; but with me all through its life it is as gentle and kind as a lamb. In my absence for a few days she becomes imbued with the spirit of her driver.

Had I not known you so intimately as it appears to me I do in reading every word of Our Homes I would not impose on you by writing these lines; but remember that two months ago I had the misfortune to have one of my legs so badly broken that I shall probably never walk again except with crutches, and especially as my fourscore years are already numbered, and my general health is also poor from indigestion; so you see I am several years your senior. This is my apology for being so tedious in addressing you, besides my desire for congenial companionship. While here in bed on my back I can write with my pencil, for I can not stand nor sit at my desk.

Lest I forget it, I wish to say that, a few moments ago, my eye caught in our daily paper an item or two which I clipped and will insert with this letter. I know you are acquainted with our Dr. Chapman, who is always so successful in all of the good works he undertakes. We fondly hope he will succeed in this also. The race-track is only about one mile from our home here in Monrovia.

I have often wished I might have met you in our boyhood, for I believe we were near neighbors in those days. My birthplace was at Chagrin Falls, in 1830, although I have lived in Portage and Geauga counties. I was a successful bee-keeper in my boyhood in Bainbridge; but for only a brief time. My success always followed me in after years.

I want to tell you of a most wonderful pullet I had at my home in my boyhood days. It was of a wild disposition, making her nest far away in the forest. She would hatch every egg, and bring the chicks home when of quite good size. At home, however, she was as tame as the others. One of her most wonderful exploits (which I saw) was her hot pursuit of a hawk that had one of her chicks. She was in close pursuit on the wing, high in the heavens, still pursuing when I lost sight of her and the hawk. Like yours she was a "princess," and by me highly respected. P. G. CARTTER.

Monrovia, Cal., July 22.

Many thanks, dear brother, for pointing out to me that beautiful and inspiring text from the book of Revelation. Why, it fairly made my heart bound when your letter called my attention to that wonderful promise. Yes, it is indeed true that, when we exercise self-control and overcome a disposition of anger or impatience which we happen to have toward even the dumb brutes, we are preparing ourselves to sit down eventually with the great Father in his throne. It seems almost too much to believe; but, dear friend, I think you have got it, all right. It is a long slow voyage that we are making in that trip from earth to heaven; and the hills we have to climb up, perhaps slowly and painfully, are right along in the line of *overcoming*, as you describe it. And this reminds me that I have had *still another* experience with that sitting hen. I am not quite ready yet to call her "princess," just as you do; but perhaps you are right about it.

Let me explain that I have had wonderful success this summer in setting hens. Three, to which were given thirteen eggs each, brought out twelve chickens each, and they all have twelve apiece yet. Well, when the last one came off I let her go off into the wet grass one morning when they were only about three days old. She came back with only eleven. I started off to where she had been, with a feeling something like that expressed in that old hymn entitled "The Ninety and Nine." But I had to give it up till I remembered that a little further, in that particular direction, there was that same "fighting mother" with her half-grown chicks; and, sure enough, I found that her clucking had misled my one "lost sheep." I found him on a little rise of ground, chirping for his mother as loudly as his little lungs would permit. Now, please

note that this "princess," as you call her, would not own him, nor have any thing to do with him; neither would he follow her nor have any thing to do with her; but when I hurried to pick him up and carry him back to the "ninety and nine," to his own mother, this *princess* took it into her head that *she* was called on to interfere. She flew up in my face, and scratched my hands again until I actually forgot my Home paper and your wonderful text. Yes, I forgot it all for just a little time. I think that, very likely, under the smarting of her claws, I said, "Look here, old lady, this chicken is not yours, and you would not have any thing to do with it when I came around, and *you know it.* If I get hold of you *this* time you will *remember* it—see if you don't." To tell the truth, I was actually grabbing after her while she was viciously scratching, before I remembered about the Home paper and "overcoming." I did not succeed in getting hold of her, as she was too spry. But I felt guilty, and greatly ashamed of myself to think she had once *more* stirred up angry feelings. Dear brother, I am afraid it will be a *long time* yet before I can just "let go," as you express it, and "smile at Satan's" efforts. Yes, I know what a Christlike spirit we ought to show to the domestic animals; and I know, too, that it would pay *big* in *dollars and cents.* The man who gets mad at a sitting hen never ought to succeed with poultry.

When I looked at that newspaper clipping you sent, telling about Dr. Chapman, who defied the millionaire gamblers, and completely routed them, I was wondering if it could be the Dr. Chapman who is the author of the Stainless Flag; but his picture in that same newspaper clipping verifies it. May God be praised that our aged brother, "Father Eloquent," as they call him, in his advanced years is able to take up and carry out so many different lines of reform work.

Friend C., why in the world did *you* not raise a lot of chickens from that wonderful pullet? That is just what I did down in Florida; and what I am doing now is to test thoroughly the two cockerels that I am going to take with me to Florida next November. One of these is father of all of these broods of chickens where I am getting twelve chicks right along from only thirteen eggs, and the *whole* thirteen from *one* mother.

# HEALTH NOTES

"THE BOOK OF WHEAT."

Well, we have now got a book of almost 400 pages, all about wheat and nothing else. It is wheat from beginning to end. The pictures (and there are hundreds of them) are all about wheat or something to do with it. Even if Abraham Adams did swindle a good lot of us with his story about that one head of wheat away off in Alaska he has probably done us some good by turning the attention of the whole wide world in the direction of new and different kinds of wheat in a way it has never been done before. Well, I am greatly interested in wheat just now — much more than ever before. This book, on p. 286, says, "Bread is the oldest and most important product made from wheat. It supports life better than any other single food except milk, and it is the most staple food of modern civilization."

Now, that hits me, because I am eating wheat more than any thing else, morning, noon, and night. But I do not wait to have it made into bread; and the next thing to wheat for my daily *menu* is milk, mentioned in the above quotation. Only two hours ago I said to Mrs. Root, "Why, Sue, you did not tell me when dinner was ready."

"Well, my dear husband, the way you are living nowadays, dinner is *always* ready; and if you happen to be busy, and do not come exactly on time, it does not matter, for your dinner never gets cold."

Now, there are several lessons in the above little incident. It *is* true my dinner never gets cold, and I do not know but Mrs. Root is feeling a little bit lost because she does not have to get breakfast, dinner, and supper for her husband three times a day, as she has done all her life. And another important truth comes in right here: I do not get faint, famished, and used up, as I used to do, and tempted to feel cross if dinner is not ready just on the minute. I must confess to being incredulous, as Terry has expressed it, that so small an amount of food should give so much strength.

Perhaps I should explain that wheat is not the only grain I use. I have the shredded biscuit I mentioned; then I have puffed rice, and, for variety, grape nuts — another preparation of grain. And besides the milk I have an egg in the morning. But my principal diet day after day is wheat, and this is why I am interested in this wheat book. The book is by Peter T. Dondlinger, Ph.D., Professor of Political and Social Science in Yale University.

The government at Washington has tested more than a thousand varieties of wheat; and our Ohio Experiment Station, Wooster, tests every year between 100 and 200 varieties. Besides these tests of new varieties of grain there have been ever so many tests of different fertilizers now on the market for growing wheat. I find by this new book that the Miracle or Alaska wheat has been known and tested repeatedly for years past. It belongs to a particular class. It is mostly used for making macaroni and other pastes. Where it is mixed with other flours it is sold largely in French markets.

A single grain of wheat can be made to produce 300 grains in a year. In ten years, one grain of wheat in North Dakota actually produced 300,000 bushels. A thousand acres of land at South Walla Walla, Washington, yielded 51,000 bushels in 1881. This yield was carefully measured, and reported to the Department of Agriculture, Washington, where they said it was the largest yield for 1000 acres ever reported.

This book considers wheat-growing, not only in the great wheat regions of the North, but on almost every spot on earth. It tells us all about insect enemies, and discusses the market, and has a long chapter and a tremendous protest against gambling in wheat. It has also considerable to say in regard to "ready-to-eat" wheat foods, including shredded-wheat biscuit, granose flakes, and the breakast-food industry, started at Battle Creek, Michigan, and also something about grape nuts. Why, even a hasty perusal of the

book has given me the fever, even in my old age, to try my hand once more on wheat-growing.

The book is published by The O. Judd Co., New York; price $2.00. It can be mailed from this office.

SHREDDED-WHEAT BISCUIT, GRAPE NUTS, AND OTHER SIMILAR "READY-TO-EAT" CEREALS.

While I am on this subject of wheat, let me add the following, as an illustration of the magnitude of the manufacture of "ready to eat" wheat foods:

This book tells us that the plant where shredded wheat is manufactured at Niagara Falls covers 5½ acres; and the total cost of the buildings and equipment was something like two millions of dollars. Again, the capital employed by the Postum Cereal Co. is five millions. The expenditure for advertising is one million dollars a year. Now, I am fully satisfied that the introduction of these cereal foods has been a blessing to humanity; but at the same time there would, no doubt, be a great saving in money if the farmer who grows the wheat could put this same wheat right on his table, thus saving the expense of the "middleman," passing it through a factory, and asking the consumer to pay for a decorated pasteboard package. All that is necessary to make the wheat ready for the table is to clean it from all trash, and then crush it by means of rollers or something else so it may be masticated as readily as the Pettijohn rolled wheat which we find at the groceries. Perhaps a majority of mankind will still prefer to buy it as it is needed, at the nearest corner grocery, even though we do pay somebody a pretty large profit for doing the work for us.

# POULTRY DEPARTMENT

"PROGRESSIVE POULTRY CULTURE;" SOMETHING ABOUT POULTRY-BOOKS IN GENERAL.

On page 1179 Prof. Cook gives this book an excellent write-up; and while I agree, after a careful perusal, that it is one of the best poultry-books we have, *so far as it goes*, I hope both the author and my good friend Cook will excuse me for giving it as my opinion that the book is *not* strictly up to date. It is a scholarly work, and the statements are all true; but it is of the "sin of omission" that I wish to complain. Now, my criticism of this book will apply to a great number of other poultry-books. The author, like Prof. Cook himself, has evidently not been reading our poultry-journals and keeping in touch with the great improvements and new inventions that have been going on. Yes, some of these inventions are not new *and* true, but neither new *nor* true, I admit; but still our up-to-date poultry-books should discuss them and help us to sift the wheat from the chaff. In the first place, I could not find any mention of the trap nest; of Hogan's $10.00 secret or the Potter $1.00 secret. I do not find any thing about hens that lay from 200 to 300 eggs a year. These secrets are advertised in the poultry-journals all over the world; and hard-working people are paying out their hard-earned money for them — yes, and even after the so-called secrets have been published and given to the world — see GLEANINGS for Jan. 1, p. 43. Our poultry-*journals* may be excused in some degree for keeping silent in regard to this matter, because of the advertising they get so long as they do not expose the frauds; but not so with a book. I find also no mention of sprouted oats, and yet the journals all over our land are still advertising the $5.00 book that contains a secret for making the very best poultry feed for ten cents a bushel. Our Ohio experiment station, as you may remember, have agreed to test this matter, and see if one bushel of oats really will, when sprouted, go as far as four bushels fed dry. Why does not this book or other books tell us the truth about a matter like this? The author of this $5 00 book claims he has sold several thousand copies, and his customers *are all satisfied*. Neither do I find the matter considered of germless eggs, as recently mentioned in this journal and the *Rural New-Yorker*.* A very brief mention is made of "curtain-front houses," "day-old chicks," and "hopper feeding." But there is no picture given of an up-to-date hopper arranged so the poultry will not waste the feed and keep out rats and mice,† etc., and no recognition of the large establishments that are now shipping day-old chicks successfully by the *hundred thousand* and sending them hundreds of miles. Nor is a word said about the "fireless brooder," as now advertised by several establishments; and yet I am fully satisfied that there is no need of a lamp, or of artificial heat of any kind, for a brooder, either in California or Florida; and some claim that no artificial heat is needed here in Ohio, especially where one has forty or fifty chicks or more to keep up the animal heat.

I know by experience that it is a great task to review even hastily the principal poultry-journals now published in the United States; but a man who writes a poultry-book surely ought to take the time to do it if he wants his book to give a glimpse of what is now going on in the poultry world. I am glad to say the book is beautifully bound, and well printed on nice paper; and I do not find a single statement in it, from beginning to end, that I should consider erroneous or misleading. We can mail the book from this office.

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* We are told by the *Farmer's Guide* that the Geneva Experiment Station publishes a bulletin in regard to careful experiments in keeping the males from the laying pullets. Below is a brief extract summing up the results:

"A pen of pullets, kept without a male, produced eggs at about 30 per cent less cost than an exactly similar pen with which a cockerel was kept. Another pen without a male gave during the first three months about the same proportionate excess of product over an exactly similar pen with which a cockerel was kept.* * * In each of the two pens without male birds some pullets had begun to lay from one to two months earlier than any in the corresponding pens in which male birds were kept."

If the above is true, farmers and other poultry-keepers throughout our land are losing large sums of money by letting useless males run at large. Not only better eggs, but ever so many more of them, can be secured by promptly disposing of these surplus males; and yet how many poultry-books even mention this exceedingly important matter?

† Friend Cook mentions the excellent index. In that index we read, "Feed-hoppers, 208." On turning to that page I find the following: "Feed-hoppers of metal or wood may be hung against the wall of the room." No picture of an up-to-date feed-hopper in the whole book, and no other mention of how feed-hoppers should be constructed, do I find.

THE BEST POULTRY-BOOK AND POULTRY-JOURNAL.

While I am on this subject, the following comes to hand:

*The A. I. Root Co.*—What is the best book on poultry-raising? and which is the best poultry-journal? Ask A. I. Root how he keeps the red mites out of his hen-house.

Walton, N. Y. H. C. McKenzie.

Friend M., although I have a small library of poultry-books, and nearly all the poultry-journals coming every day, I can not answer your question definitely. There is no book that I know of, or poultry-journal either, that makes it a business of exposing the frauds that are advertised in almost every poultry-journal published. I am pained and shamed to say this. Our agricultural periodicals in their poultry departments are telling people what to buy and what not to buy; but the poultry-journals, almost without exception, advertise every thing, and in their reading-notices recommend every thing that their advertisers offer. If I am doing some journal wrong, will some good friend set me right?

In regard to red mites, they have not been on my fowls, and I have never seen any, either in Florida or here in Ohio; but for fear they might come I have just had my new scratching-house painted inside and out with carbolineum; and this was done before putting on the outside building-paper. I did this because both the *Rural New-Yorker* and the *Country Gentleman* recomended it to keep vermin out of the house. Prevention is better than cure, you know. This substance is also a preservative of wood, and it is doubtless worth all it costs, aside from keeping out insects and rats and mice. Below is what one of the friends says of it:

I see one man asks how to keep mice and rats away from hoppers. Have them write to Carbolineum Wood-preserving Co., 349 West Broadway. New York, and get Bulletin 26. All they have to do is to paint the hopper and the vermin will stay away. It will kill hen-lice, and one painting will last for two or three years. It is fine to keep away ants as well as many other things.

Chatham, N. Y., Sept. 7. P. L. Callender.

STILL ONE MORE "WONDERFUL SECRET."

We copy the following from the advertising department of the *Poultry Review:*

MY DISCOVERY OF A PRINCIPLE REGARDING BROODING CONDITIONS WILL ENABLE YOU

1. To convert something which you are now throwing away, and getting absolutely no benefit from, into profit.

How can you stop this waste if you don't know about it?

2. Make a brooder, without any cash outlay, and with only about one-half hour of your time. Isn't it worth investigating?

3. Produce results which can never be approached in the number and quality of chicks raised by any other method.

Is this not very desirable?

4. Raise them with less heat, time, space, labor, feed, money, and worry. Why not "get next" to this?

IT IS NEW, ECONOMICAL, LUCRATIVE, AND PRACTICAL.

WHAT IT IS NOT.

It is not merely a slight variation from the principles used in other brooders, nor is it a different method of applying the same principles used in other brooders. Neither is it a "fireless brooder."

WHAT IS IT?

It is a principle very simple yet wonderful in its results. This principle is a radical departure from that employed in any other brooder. It is a principle which was never before thought of or used in brooder construction.

I am asking only 50 cents for this discovery, which is a very small fraction of its actual value to you. In view of the above facts, it is folly for you to be without this great boon to the poultry-raiser; in fact, BUSINESS ECONOMY demands that you know it. This is YOUR OPPORTUNITY. Grasp it NOW. I have no fixtures to sell. Address

Stanley Smith, Bloomington, Indiana.

Most of our readers probably know that I have been wasting money and throwing it away for years back in trying to get something really valuable that has been advertised to be sold as a secret. I commenced first by buying recipes for making artificial honey, and then I got a mania, as you may know, for investing in all kinds of secrets, from 25 cents up to $10.00; but so far as I can recollect just now I have never yet succeeded in getting any thing new and valuable; but each new advertisement like the above, for instance, inspires me with new hope. I am of a hopeful disposition, you know; and, besides, I am just now greatly interested in all sorts of brooders. Please notice the above advertisement says, "It is a principle never before thought of or used in brooder construction."

Here is what I got for my 50 cents—a very poorly printed pamphlet containing three pages, and no illustrations whatever; and after reading it many times over I could not construct such a brooder as he tries to describe for the life of me. His "discovery," when boiled down, amounts to this: When you make a brooder to be heated by a lamp, instead of carefully carrying off the fumes from the kerosene-lamp just carry the fumes, heat and all, right on the chickens. It not only will not hurt them, but it will do them good. The carbon dioxide, a product of combustion, is just what the chickens need This is what Mr. Stanley Smith has discovered—that is, he *claims* it is his discovery. But in the proceedings of the Poultry Institute, of Ontario, Canada, held last February, there is quite a chapter on this carbon-dioxide business, and I quote from page 9 of the bulletin as follows:

Lamp-fumes were applied to one machine in this way: We set two machines, side by side, and from the lamp of one we led a tube right into the egg-chamber of the other so that all the fumes that were formed from the first machine were passed into the egg-chamber of the second machine, and we got a great deal of carbon dioxide in that way.

This bulletin tells us that they got better results when the fumes of the lamp are run directly into the incubator. They were induced to try this because they found that a sitting hen gives off from her body a considerable quantity of carbon dioxide. On page 11 we quote again:

A Member.—Is carbon dioxide that comes from the fumes of a lamp the same as comes from the hen?

Prof. Harcourt.—There can be only one kind of pure carbon dioxide. It is all the same.

Furthermore, home-made brooders have been warmed by kerosene-lamps for years past, by hundreds of people; and to my knowledge a good many have warmed up the chicks by letting the top of the lamp chimney go right in among them. In fact, I sent 50 cents some time ago for directions for making a home-made brooder; but I never made any use of it because I did not like the idea of warming the chicks directly with the products of combustion. Experiments in Ontario, however, as well as those of Mr Smith, would indicate that we need not take the precaution to get rid of the fumes from the lamp, either for an incubator or a brooder; but so far as I am concerned I think I prefer the fireless brooder without any lamp at all, especially in a warm climate or at a season of the year when we are not having cold weather.

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Gleanings is a very valuable paper in all respects. The first I read of every number is the Temperance matter, Our Homes, and then about bees, honey, etc. God bless our old friend Root.

Tacoma, Wash., Sept. 8. E. O. Teffre.

**The Rochester Radiator Will**

SAVE HALF YOUR FUEL or give you double the amount of heat from the same fuel, if you will give it a trial, or we will refund the money paid for it. Write for Booklet on heating homes.

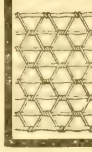
Prices from $2 to $12

For hard or Soft Coal wood or gas

Fits any Stove or Furnace

ROCHESTER RADIATOR CO. 50 Furnace St., Rochester, N.Y.

**15 Cents a Rod**



For a 22-inch Hog Fence; 16c for 26-inch; 19c for 31-inch; 22 1-2c for 34-inch; 27c for a 47-inch Farm Fence. 50-inch Poultry Fence 37c. Lowest prices ever made. **Sold on 30 days trial.** Catalog free. Write for it today.

KITSELMAN BROS., Box 21, MUNCIE, IND.

**TWO MONEY MAKERS**

**SCARFF'S SMALL FRUITS** and bees are an ideal combination for bee-keepers or farmers. Order early and plant a generous quantity of these fruits. The bees pollenize them, making them produce in luxurious abundance, and at the same time increase amount and value of honey.

**3 Blackberry Bushes Free.** I want to prove how well-rooted, strong and vigorous my plants are. I will send **free** 3 fine blackberry plants, if you write for my new 1908 free catalog. Some of my customers are making over **$350 an acre** with my plants. With bees you can increase that profit considerably. I sell a large variety of nursery stock, grown on an 800 acre farm. Write me to-day.

W. N. SCARFF, New Carlisle, Ohio

**Grow Mushrooms**

For Big and Quick Profits Or For Your Own Use.

Ten years' experience enables me to give practical instructions worth many dollars to you without interfering with regular occupation, no matter where located. Send for Free Book and particulars how to start, etc.

JACKSON MUSHROOM FARM Dept. 311, 3243 N. Western Ave., Chicago, Ill.

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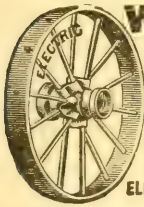


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Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

**Electric Handy Wagon.**

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

ELECTRIC WHEEL CO., Box 95, Quincy, Ill.

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A portable, pure white, steady, safe light. Brighter than electricity or acetylene. 100 candle power. No grease, dirt nor odor. Lighted instantly. Costs 2 cts. per week. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog. Do not delay.

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MAKES AND BURNS ITS OWN GAS

**WE SHIP ON APPROVAL** *without a cent deposit*, prepay the freight and allow **10 DAYS FREE TRIAL.**

**IT ONLY COSTS** one cent to learn our *unheard of prices* and *marvelous offers* on highest grade 1909 model bicycles.

**FACTORY PRICES** *Do not buy* a bicycle or a pair of tires from *anyone* at *any price* until you write for our large **Art Catalog** and learn our *wonderful proposition* on first sample bicycle going to your town.

**RIDER AGENTS** everywhere are making big money exhibiting and selling our bicycles.

**We Sell** cheaper than any other factory.

**Tires, Coaster-Brakes,** single wheels, parts, repairs and sundries at *half usual prices.*

**Do Not Wait;** write *today* for our *special offer.*

MEAD CYCLE CO., Dept S 113, CHICAGO

DON'T WORRY OVER MONEY MATTERS but send for sample copy of Inland Poultry Journal and let us tell you how to make money out of poultry. Two full pages in colors, reproductions from oil paintings that cost us $1000.00. They are FREE.

Inland Poultry Journal Company 15 Cord Building, - Indianapolis, Ind

**FIX YOUR ROOF**

**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

**Roof-Fix** The Perfect Roof Preserver, makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our **free roofing book** tells all about it. Write for it today.

The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio

**GREEN BONE MAKES EGGS**

Lots of them, because it is rich in protein and all other egg elements. You get twice the eggs, more fertile, vigorous chicks, earlier broilers, heavier fowls, bigger profits.

**MANN'S LATEST MODEL BONE CUTTER** cuts all kinds of bone, with adhering meat and gristle, easy, fast and fine. Automatic feed, open hopper, never clogs. Catlg free.

**10 Days Free Trial.** No money in advance.

F. W. MANN CO., Box 37, Milford, Mass.

# C. H. W. WEBER

HEADQUARTERS FOR

# BEE SUPPLIES

DISTRIBUTOR OF

**ROOT'S GOODS EXCLUSIVELY**

**AT ROOT'S FACTORY PRICES**

NO CHARGE TO DEPOTS
FOR DRAYAGE.

## HONEY WANTED.

Fancy white clover, EXTRACTED HONEY. State how it is put up, and price expected delivered in Cincinnati.

# C. H. W. WEBER

Office and Salesroom, 2146-2148 Central Ave.
Warehouse, Freeman and Central Avenue.

**CINCINNATI, .. .. .. OHIO**

UDO TOEPPERWEIN W. M. MAYFIELD

# THE BEE-KEEPERS' Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND
**AN IMMENSE STOCK OF HONEY-CANS**
(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

| | |
|---|---|
| 12-in. 4-row shipping-cases with 3-in. glass | $17.00 per 100 |
| 9¼-in. 4-row shipping-cases with 3-in. glass | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass | 9.35 per 100 |
| 6¼-in. 3-row shipping-cases with 3-in. glass | 9.80 per 100 |
| 7⅛-in. 3 row shipping-cases with 3-in. glass | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 25 cts. cash; in trade, 28 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**TOEPPERWEIN & MAYFIELD**
1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

# WHAT'S THE USE

## OF HAVING FINE HONEY IF IT IS IN POOR PACKAGES?

If you are among the fortunate ones who have secured a good crop of honey, surely you will not be so unbusinesslike as to sell it in second-hand or inferior cases. Your honey will sell far easier in nice new cases or tins. WE HAVE THEM. ∴ ∴ ∴ ∴

**John Nebel & Son Supply Co., High Hill, Mont. Co., Mo.**

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1884 1908

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . .

**J. M. Jenkins**

**Wetumpka, : : Alabama**

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**SAVE EXPRESS!**
**SAVE FREIGHT!**
**SAVE TIME!**
by ordering your supplies in **Boston**

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**

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**A FULL LINE** of Bee-keepers' Supplies. My patent Section-machine at half-price. A new queen nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for catalog and price list. **Chas. Mondeng,** *160 Newton Ave. N.* **Minneapolis, Minn.**

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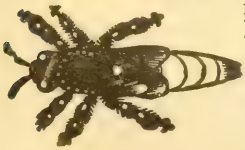
# ITALIAN QUEENS



Fine 3 and 5 banded queens till Nov. 15, untested, only 60c or $6.00 a doz.; extra fine queen, $1; tested, $1.25. Full colonies in 8-fr. hive, with queen, $5.50; 3-fr. nucleus, with queen, $2.75. Safe arrival guaranteed. Directions to introduce go with queen. Price list free.

J. L. FAJEN, . ALMA, MO.

---

**CARNIOLAN, BANAT, AND CAUCASIAN QUEENS**

Home-bred, $1.00 each; five at 80c each; Imported, $4.00 each.

FRANK BENTON, - Box 17. - WASHINGTON, D. C.

---

# Taylor's Strain of Italians

IS THE BEST.

Long tongues and goldens are the best of honey-gatherers; 19 years a specialty, breeding for the best honey-gatherers. Untested, 75 cts. each, or $8.00 a dozen; tested, $1.00 each, or $10.00 a dozen; select tested, $1.50 each. Breeders, the very best, from $3.00 to $5.00 each. We sell nuclei in full colonies. Bees in separate yards. Safe arrival guaranteed. Send all orders to

**J. W. TAYLOR & SON, Beeville, Bee County, Texas.**

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# PATENTS.

Twenty-five Years' Practice.

**CHARLES J. WILLIAMSON,**

Second Nat'l Bank Bldg. Washington, D. C.

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

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# Queens

**Colden and three-banded.**

Wurth's queens take the lead everywhere; have 600 queens; can send by return mail; untested, 60 cts. each. Send for circular.

DANIEL WURTH, Rt 3, Fayetteville, Ark.

---

**Queens ITALIAN Queens**

BY RETURN MAIL.

Untested, 60 cts. each; 6 for $3.25; tested, $1.00 each; 6 for $4.75. 150 colonies of bees for sale. Write for prices.

E. A SIMMONS, . . GREENVILLE, ALA.

---

FOR SALE. It will pay to get our special proposition
A. G. WOODMAN & CO., Grand Rapids, Mich.

# QUEENS

And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $ 75 | $4 00 | $ 7 00 |
| Tested queens | 1 00 | 5 00 | 9 00 |
| Select tested queens | 1 50 | 8 00 | 15 00 |
| Breeders | 3 00 | 15 00 | |
| Straight five-band breeders | 5 00 | | |

**All queens now go by return mail** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

**Hurry in your orders as this is the last time this ad. will appear for this season.**

**QUIRIN THE-QUEEN-BREEDER, Bellevue, Ohio.**

# 5000 QUEENS

of the famous 3-banded LONG TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A I Root Co R F Holtermann W. Z. Hutchinson Morley Pettit etc., and if they don't please you send in your kick.

Queens of all grades now ready

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1 00 | $5 00 | $9 00 |
| Select untested queens | 1 25 | 6 00 | 11 00 |
| Tested queens | 1 50 | 8 00 | 15 00 |
| Select tested queens | 2 00 | 11 00 | 20 00 |

Breeders $5 00 to $7 00

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

# 25 PER CENT REDUCTION.

Here is your chance to save money and get a lot of the best queens cheap.

Introduce LAWS queens this fall and thus insure a full crop of honey the coming season.

LAWS queens are sent everywhere, and everywhere there are words of praise for them.

One firm alone has bought over three thousand of the Laws queens during the past three seasons.

Deduct 25 per cent from the following prices; remit the balance, and your order will have prompt attention.

Single queen, $1.00; six for $5 00 dozen for $12.00

**W H. LAWS, Beeville, Bee Co., Texas**

**Long tongued**

# Red-clover Queens

**Bred by their Originator**

Do you want to get some specimen queens of the world-famous red-clover stock of Italian bees? Then buy from me, because I am the originator, and surely ought to know how to breed them in their purity. When you get them from me you know you have the real strain. For years I have devoted time and skill to this stock, trying to reach perfection. I can submit many splendid testimonials in favor of this stock to show my work has not been in vain. Try them, and YOU will be pleased also. I endeavor to please the practical man looking for definite results in dollars and cents. Many years' experience as head apiarist of The A. I. Root Co. enables me to fill the most exacting order with complete satisfaction to the purchaser Let me show you how well I can please you.

**Prices**

| | | 1 | 6 |
|---|---|---|---|
| Untested queen | Before October 30, | $1 00 | $ 5 00 |
| Select untested queen | " | 1 25 | 6 00 |
| Tested queen | " | 2 00 | 10 00 |
| Select tested queen | " | 3 00 | 15 00 |
| Breeding queen | " | 5 00 | |
| Select breeding queens | " | 7 50 | |
| Extra select " 1 yr. old | " | 10 00 | |

**F. J. Wardell**

**Uhrichsville, Ohio, U. S. A.**

# NOW IS THE TIME

to buy your queens for fall increase. I can mail promptly young vigorous queens—Italian, Carniolan, Banat, and golden. Prices, untested, 75 cts.; $8.00 per dozen; tested, $1.25 each; $12.00 per dozen.

Circular free.

**Grant Anderson, Sabinal, Tex.**

# QUEENS of MOORE'S STRAIN OF ITALIANS

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

PRICES: Untested queens, 75 cts. each; six, $4.00; doz., $7.50. Select untested $1.00 each; six, $5.00; doz., $9.00.

I am filling orders by return mail.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address

**J. P. Moore, queen-breeder, Rt. 1, Morgan, Ky.**

# Watch Fob Free

YOUR CHOICE OF CANDIDATES

## BRYAN OR TAFT

Handsomest Campaign Badge you have ever seen. You may have it FREE with our compliments. This fob is made of a fine grade of seal grained Russia leather, nickeled buckle, beautiful mother-of-pearl shield, containing a photo of your favorite candidate, either Bryan or Taft. It is guaranteed to be just as we describe it and you will be proud to wear it. We are giving away these handsome fobs to get acquainted with you and to get you acquainted with our splendid and instructive farm paper, "FARM AND STOCK," an up-to-date magazine devoted mainly to corn and live stock. The Watch Fob and a three months' trial subscription given you absolutely free on receipt of 10 cents in coin or stamps to pay for mailing. We will also send you our liberal proposition whereby you can secure other handsome premiums free by giving away several of these fobs to your neighbors. You are sure to be delighted with both fob and paper, so send 10c at once while they last to

**FARM AND STOCK**
**Box 307, St. Joseph, Missouri**

# FASHION BOOK FREE!

I want to send you my handsome new book showing hundreds of latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

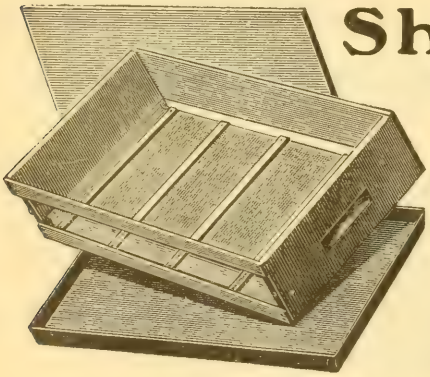
## HOW I DO IT.

I publish the **FARMER'S CALL, a weekly** paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for Women folks, is its fashions in which I show the **5c patterns.** Let me help you to save money.

## MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week** (over 1000 pages) **for one year** and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts because I buy them by the thousand and don't make any profit. I don't want the profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY!

**JOHN M. STAHL,** Dept. G, **QUINCY, ILL.**



# Shipping-cases

for any number or size of sections desired. These cases are made of fine white basswood, and the workmanship is first class. Owing to the shortage in the honey crop last year we have a good stock on hand and can make immediate shipment.

Twelve-inch case, with follower, to hold 24; or eight-inch case, with follower, to hold twelve beeway sections. shipped when no size is mentioned. All cases single tier unless otherwise ordered.

## Honey-packages in Tin.

Standard packages for storing and shipping extracted honey. Less chance for leakage or taint from wood; being square they economize space. Five-gallon cans boxed two or one in a box; gallon cans 10, ½-gallon cans 12 to box. Five, one, or ½ gallon cans not boxed if desired. Prices on application for any quantity.

Place your order now; prices and prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY COMPANY**
**123 Nicollet Island, Minneapolis, Minn.**

Oldest Bee-paper in America

# This Coupon Worth 35 cents

Now in its 48th Year

(*New Subscribers Only*)

*Name* .....

*Postoffice* .....

*State* .....

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

**AMERICAN BEE JOURNAL**

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

**It Will Increase Your Honey-Money**

If you will send us your name and address with 40 cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

**American Bee Journal, 118 West Jackson, Chicago, Illinois**

## CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

FOR SALE.—To reduce stock I offer for sale as follows: 26 cases of stock No. 40, and 40 cases of stock No. 44 at $10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries; being extracted from select all-sealed upper stories. A third of a century's experience in the production of fine extracted honey. Ask for my little circular "A Word about Extracted Honey;" this will explain why it pays to buy this delicious stock.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—150 cases of No. 1 comb honey, 15 sections in 3-inch glass, no-drip cases, 6 cases in a crate, very fine, at $2.00 per case, f. o. b. cars here. Also 8000 lbs. clover and basswood extracted, in new 60-lb. cans, 2 in case, very heavy body and fine flavor, at 8c, f. o. b. cars here. Sample free. Also extracted in 1-lb. Simplex jars, at $2.00 per dozen.
W. H. TOWNSEND, Hubbardston, Mich.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 9 c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

PURE RASPBERRY HONEY, unmixed with other honeys, has a decided raspberry flavor that is simply delicious—one that must be enjoyed to be appreciated. If you never tasted raspberry honey, send me ten cents and I'll mail you a generous sample, and the ten cents may apply on the first order you send me. For further particulars, see large advertisement on page 1167.
W. Z. HUTCHINSON, Flint, Mich.

FOR SALE.—New crop of fancy white-clover extracted honey, thoroughly ripened on the hives before extracting. None of better quality on the market. Put up in barrels, new 60-lb. tin cans, and smaller packages if desired. For prices, etc., address
EMIL J. BAXTER, Nauvoo, Hancock Co., Ill.

FOR SALE.—Aug. 16 we finished taking off our clover, basswood, and button-willow honey. It is principally clover, fine and rich. Delivered at station in 60-lb. square cans, two cans to case; 8¾ cts. per lb. Reference, our postmaster or agent, Lakeville, St. Joseph Co., Ind., at which place address C. A. BUNCH.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan Ky.

FOR SALE.—1908 crop of white-clover honey—a strictly fancy table honey, extracted from capped combs. If you want good honey, here it is, put up in new 60-lb. cans, square or round Sample free. WARREN H. WINCH, Hopkinton, Iowa.

FOR SALE.—5 tons of fine-quality comb and extracted. State amount you wish, and we will quote you our lowest cash price.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Choice white extracted honey, mostly clover and raspberry mixed, in new 60-lb. cans. Price on application. Sample, 10 cts. JAMES McNEILL, Hudson, N. Y.

FOR SALE.—Honey, clover, or buckwheat, comb or extracted. Write for price. Sample of clover extracted free. State quantity and quality desired. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Basswood extracted honey, left on the hives until thoroughly ripe. One box of two 60-lb. cans, $9.60.
GUSTAVE GROSS, Lake Mills, Wis.

FOR SALE.—8 tons of raspberry and basswood extracted honey, thick and very fine flavor, in new 60-lb. cans, 2 in case, at 7½ cts., f. o. b. cars here.
J. N. HARRIS, Mancelona, Mich.

FOR SALE.—Fancy clover and also buckwheat extracted honey in new cans, two in a case. Send 10 cts. for sample, which may be deducted from first order. EARL RULISON, Rt.1, Amsterdam, N.Y.

Extra quality clover honey in N. B. K. A. round cans, 9c; buckwheat, 7c. Satisfaction guaranteed.
F. W. LESSER, Syracuse, Sta. A., N. Y.

FOR SALE.—White and buckwheat extracted honey in cans or kegs. A. E. WOODWARD & SON, Rt. 2, Voorheesville, N. Y.

FOR SALE.—Fancy and No. 1 white-clover comb honey.
ANTON G. ANDERSON, Holden, Mo.

## Honey and Wax Wanted

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

Will pay 7c per lb. for gilt-edged white clover, raspberry, or basswood honey, in new 60-lb. cans f. o. b. here; Chicago suburb. B. WALKER, Clyde, Cook Co., Ill.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

Mail small sample, giving quantity you have, how put up, and lowest cash price you will take for it.
E. R. PAHL & CO., Milwaukee, Wis.

WANTED.—We are in the market for white extracted honey, in any quantity up to two or three cars. Mail sample and give source of honey, quality, quantity, and price.
M. H. TWEED & CO., 1125 Penn Ave., Pittsburgh, Pa.

WANTED.—We are in the market for No. 1 white extracted honey in any quantity. Correspondence solicited. State kind, quantity, and price asked. We also have for sale 60-lb. honey-cans, 2 cans in case. Both cans and cases in A1 condition, at 30 cts. per case. MICHIGAN WHITE CLOVER HONEY CO.,
31-33 Griswold St., Detroit, Mich.

## Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

FOR SALE.—Delaware farm, public road; good buildings, good water; fruit, wood; rural delivery; school, churches, stores, mills, railroad depot, canneries, blacksmith shops, all convenient; an ideal place for bees, poultry, fruit, and trucking.
L. A. LUDWIG, Marydel, Md.

FOR SALE.—Five-acre fruit, vegetable, and bee ranch, one mile from Grand Junction, city of 10,000; 28 stands of bees; new house, honey-house, horse-wagon, buggy, tools; no failures here; finest location; pasture for 300 stands, all for $3000.
ROY D TAIT, Grand Junction, Colo., Rt. 3.

FOR SALE.—Small homestead, first-class buildings, fully equipped apiary, in one of the most desirable locations to be found; will sell for less than the improvements can be replaced for. This was the home and the apiary of the late B. Taylor at Preston. Write for particulars. ALF.A.ZIEMER, Waltham, Minn.

FOR SALE.—California foothill ranch, San Diego Co., 160 acres, twenty-five in cultivation; house and barn; three acres orchard; 100 hives of bees; one span of horses; bee material and farming tools, $1800.
AUSTIN E. WHITE, Fallbrook, California.

WANTED.—To correspond with parties desiring a location orf bee culture. Miles of palmettos, black mangrove, and a good-sized bearing orange-grove. Island. Very healthy.
POSTMASTER, Carlos, Lee Co., Fla.

FOR SALE.—Farm of 14 acres near city of 20,000; good soil, market, and bee pasture. L. C. HOOK, Richmond, Ind., Rt. 3.

## For Sale

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—Sweet-clover seed, 15 cts. per pound. postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Shipping-cases, the no-drip kind; overstocked; get our special prices. A. G. WOODMAN CO., Grand Rapids, Mich.

FOR SALE.—Duroc Jersey, Hampshire, and Tamworth swine; fancy poultry, Collie dogs. Send for circular. JNO. M. WHEELER, Winchester, Ky.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars. W. P. SMITH, Penn, Miss.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer. CLEVELAND HEALTH FOOD CO., Cleveland, O.

FOR SALE.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply. KENSINGTON CATTERY, Marion, Ohio.

## Bees and Queens

FOR SALE.—75 first-class colonies of bees, mostly in ten-frame hives. J. D. HOLDENER, Carlyle, Ill.

FOR SALE.—100 colonies at Horseheads, N. Y., complete for extracted honey, $2.50 each. WM. CARDER, Constance, Ky.

FOR SALE.—First-class apiary of 120 colonies with all supplies. Write for particulars to J. B. HALL, Box 595, Woodstock, Ont., Can.

FOR SALE.—Fine yard of 80 colonies and combs, supers, etc., at Naples. Eighty ⅞-in. fine winter-cases here. F. W. LESSER; Syracuse, N. Y. Sta. A.

FOR SALE.—100 colonies of bees in new Danz. hives at $4.50 each; 2-frame Cowan extractor, new, $10.00; 120 Danz. supers at 50 cts. Other supplies. W. A. LATSHAW, Carlisle, Ind.

FOR SALE.—First-class apiary of 150 colonies, fixtures and supplies; 45 are in Danz. hives; balance in Dovetailed. Good condition; no disease. Will sell very reasonable in lots to suit. For particulars write W. F. STUART, Ottawa, Kansas.

FOR SALE.—For 30 days I offer my bee-outfit at about 60 to 65 cts. on the dollar—a little disease but under good control. This is an opportunity of a lifetime for the right man. D. E. LHOMMEDIEU, Colo, Iowa.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry. N. V. LONG, Biscoe, N. C.

FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. RAILS, Orange, Cal.

FOR SALE.—250 colonies of bees in ten-frame hives at $2.75 per colony; no disease; fixtures for comb and extracted honey cheap; also 22 acres of land; first-class buildings, and improvements. If not sold by Jan. 1 a reliable man is wanted to rent or run bees and farm on shares. J. H. ZEINER, Bard, Ark.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc. STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Indian Runner ducks, great layers, cheaper than ever, $2.00 each; $3.50 per pair. $5.00 per trio. Circular free. KENT JENNINGS, Mt. Gilead, Ohio.

## Help Wanted

WANTED.—Ge man and wife to care for truck, poultry, fruit, and bees in Virginia. 35754 Gleanings, Medina, O.

WANTED.—Capable man 30 to 40 years of age, married, to take charge of small farm in Ohio. State experience, salary wanted, date could begin, and give names of references. Address JOHN SMITH, Gleanings in Bee Culture, Medina, O.

WANTED.—Young man to learn the poultry business, one willing to work; not much work outside of the poultry part of it. Write at once. HOUSE ROCK POULTRY FARM, East Weymouth, Mass.

## Wants and Exchanges

WANTED.—Bees. Car lots or less for spot cash. All letters answered. F. B. CAVANAGH, Springport, Mich.

SWAP.—Scholarship I. C. S., transfer value $65.00, for poultry, incubator brooders, or Shetland pony and rig, and pay difference. GEORGE WANSER, Cranford, N. J.

WANTED.—Refuse from wax-extractors and old comb for cash ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Refuse from the wax-extractor, or slumgum State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS. W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog. D. COOLEY, Kendall, Mich.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready. W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience. F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# SPECIAL NOTICES

BY OUR BUSINESS MANAGER

THE LORE OF THE HONEY-BEE, BY TICKNER EDWARDES.

This is a fine new book about bees by an authority who wields a facile pen — an original work, beautifully illustrated and finely printed. Something fine for the long winter evenings. See review of the book in this issue, page 1170. Price $2.00.

Mr. W. S. Williams, of Julian, Pa., called here recently on a trip through the State. Mr. Williams is one of those bee-keepers who believe in preparing long in advance for the next honey harvest. The demands of his own yard and the inquiries of his neighbors warrant him in laying in a good stock of supplies in the fall when the largest early-order discount is in force.

L'ELEVAGE INDUSTRIAL DES REINES.

We are pleased to notice that Mr. E. L. Pratt's book, "Commercial Queen-rearing," may now be obtained in the French language. It makes a very neat and attractive booklet with the above title, and, so far as we can see, great pains have been taken with the work of translation, and in all respects it is quite equal to the English edition, and possibly a little better. Those who prefer to read in French will find the perusal of this little work will supply the reader with the latest and most scientific ideas in practical queen-breeding. The price is 50 cts. postpaid. Orders for it can be sent to The A. I. Root Co., Medina, Ohio.

DISCOUNTS FOR EARLY CASH ORDERS.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| On October | cash | orders | we | allow | 6 | per cent | discount. |
| " November | " | " | " | " | 5 | " " | " |
| " December | " | " | " | " | 4 | " " | " |
| " January | " | " | " | " | 3 | " " | " |
| " February | " | " | " | " | 2 | " " | " |
| " March | " | " | " | " | 1 | " " | " |

This discount will apply on all articles listed in our regular catalog at current corrected prices to date except as follows;

Tinned wire, paint, Bingham smokers, Porter bee-escapes, glass and tin honey-packages, scales, bees and queens, bee books, papers, labels, printed matter, bushel boxes, seeds, and specialties not listed in our general catalog. Where any or all of these articles in a general order do not exceed fifteen per cent of the whole order the discount may be deducted from the whole order, including these items which are otherwise excepted.

# Special Notices by A. I. Root

PROF. HOLDEN'S BOOK ON CORN CULTURE.

In our issue for Dec. 15, 1906, I pronounced the above book the most valuable one of its size that has been given to the cause of agriculture in the last hundred years, and I think so yet. By following the teachings of that book we have now ten acres of corn almost ready to husk that has given us a yield twice as large as we should have had, if I had not got hold of the book and afterward heard Prof. Holden give his corn lecture. What brings the matter up just now is that the book is now sold by the Farm News Co., Springfield, Ohio, for the very small sum of 10 cts. You know I have found some fault about big prices for small books on poultry and other subjects; but this corn book is certainly a most wonderful bargain. If carefully studied by the average corn grower it ought to be cheap at a dollar, and I might almost say ten dollars. I hope it may have a tremendous sale, and that every farmer who does not already have it will at once get a copy.

SITTING HENS—HOW TO CURE THEM.

In answer to Dr. Miller's question on the first page, I would reply that sitting hens have not troubled me this summer, because I am glad to see them and give them some eggs and *let* them sit. Your remedy is excellent. It is like carying bees to an out-apiary. With sitting hens, as with almost every thing else, a stitch in time saves nine. If the hen is taken the very first evening she is found on the nest, when it is time to go to roost, and shut her up, or, better still, take her outside the yard or to some other yard, she will often give it up and go to laying almost immediately. If she sits on the nest just one night she will be so much the more stubborn about it. Don't let a single hen set on eggs even one night where you do not want sitting hens. If you are obliged to shut them up somewhere, do not put them on the ground or on the floor. Have the bottom of the box either wire cloth or lath, so the hen can not warm up the ground or floor beneath her. Cool her off, and get her over her fever for raising chickens, as quickly as possible. I have frequently broken them of their desire to sit by keeping them away from their accustomed nests just two nights. It is a much easier matter where the nests are some distance apart; and, even though it does make more labor in gathering the eggs, I much prefer to have the nests scattered about in different parts of the yard. In cold weather, when they are confined to the poultry-house I would have them in different parts of the inclosure, say some up near the roofs, and some down in the corners. The upstairs part of the Philo poultry-house seems to please the hens to a dot. Where you have several hens sitting at the same time, the nests should all be far enough apart so there can be no "differences of opinion" as to which hen the nest belongs to.

NAVIGATING THE AIR; THE WRIGHT BROS. UP TO DATE.

On page 1097, Sept. 1, I said, "May God grant that no accident may happen to these two intrepid brothers." I then had in mind, and have had in mind all along, that during these preliminary experiments there would be accidents, and, in all probability, loss of life. Well, an accident has happened; and although Orville Wright has been spared so that he may take up his work again soon, we regret the loss of the life of his companion who was with him. Most of you have seen accounts in the papers. One of the wings of the propellers broke in midair; and before young Wright could adjust his machine it came down to the ground with a crash. It is reported that he said if he had been 75 feet higher up he could have brought the machine into shape so it would have alighted safely. There is quite a misapprehension, I notice by the papers, in regard to danger with the Wright machines. Their first experiments were with *gliding* machines, so that if any thing happened to their engine they could still glide to the ground; and no mishap would have occurred this time had Mr. Wright been able to cut off the power the very instant the wing broke. These propeller wings are selected of the very best Vermont spruce, or at least such was the case when I was with them. This spruce has more strength in proportion to its weight than any other known material, not even excepting aluminum; and these blades are most thoroughly tested before using them. The extra strain on the machine by having a second passenger is probably what caused it to break, although it has been suggested that a broken wire may have struck the blade and caused the fracture. Since this accident I suppose every wire and piece of wood will be still more severely tested than ever before. Wilbur, the brother in France, has said, we are told, that, instead of taking a passenger, he will, at least for the present, carry a bag of sand equal in weight to a passenger.

Orville's injury, so far as we can learn by the papers, was a broken bone in his thigh, and one or more ribs fractured. As we go to press we are told that his prospects for full recovery are very favorable. We learn from the *Woman's National Daily* that on the 22d of September Wilbur Wright broke all previous records by remaining in the air 91 minutes, and covering in all about 61 miles. Here is what the paper says about it:

"There was nothing marvelous in the performance," Wright said to a group of admirers. "The machine is built on the right principles; and as long as it is properly manned it has got to fly. I could have stayed up another hour or until the petrol was exhausted; but it was getting dark and I thought it best to come down. I am glad for my sake that the fight was such a success, but doubly glad on Orville's account. Many thought when my brother met with his regrettable accident last week that our machines were failures, and that we had been enabled to fly largely through good luck. Well, I think they ought to be satisfied now that the aeroplane is all that we have claimed for it, and that the coming machine will be built along the lines that we have laid down."

Ten thousand persons witnessed the record-breaking flight of Mr. Wright.

SHALL WHISKY RULE?

States represented and ruled by ignorant men must remain ignorant. States represented by corrupt men remain corrupt. States ruled by gamblers are gambling States, and States represented and ruled by whisky men remain drunk; and the unspeakable pity is that the home, with its tender charges, must share the blighting influence of these evils.—*The Seattle Post-Intelligencer.*

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STOP AT
HOTEL TULLER
New and Absolutely Fireproof
Corner Adams Ave. and Park St.

In Center of the Theater, Shopping, and Busin District
A LA CARTE CAFE
Newest and Finest Grill Room in the City
Club breakfast,40c up. Lunch,50c. Table de hote dinners,75c
Music from 6 P. M. to 12 P. M.
Every Room has Private Bath
EUROPEAN PLAN. RATES $1.50 PER DAY AND UP
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The Wellington Hotel
Cor. Wabash Ave. and Jackson Boulevard
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REMODELED AT A COST OF
Hot and Cold Running Water and Long Distance 'Phones in all Rooms
200 Rooms 100 with Bath Single or en Suite
RATES $1.00 AND UPWARDS
One of the most unique Dining-rooms in the country.
Our famous Indian Cafe.
*Noted for service and Cuisine*
McCLINTOCK & BAYFIELD, Props.

## Convention Notices.

MEN AND WOMEN WHO EXPECT TO ATTEND THE NATIONAL CONVENTION.

The following persons have taken the pains to write and tell me that they expect to attend the coming National convention at Detroit:

Aspinwall, L. A., and wife.
Abbott, E. T.
Ahlers, H. C., and wife.
Barb, J. S.
Brovald, A. C.
Carr, E. G.
Covyou, Elias E.
Cavanagh, F. B., and wife.
Chrysler, W. A.
Chapman, S. D.
Cameron, R.
Carter, Wm.
Cutting, H. D.
Dickenson, E. and wife.
Darby, M. E.
France, N. E., wife, children.
Fowls, Chalon, and wife.
Forbes, W. E.
Furnass, W. C.
Frazier, W. S.
Gute, Martin.
Hutchinson, W. Z., and wife.
Hutchinson, Elmer, and wife.
Halter, A. J.
Hilton, Geo., and wife.
Holtermann, R. F.
Harmer, Walter.
Hunt, E. M.
Hurley, James J.
Hand, J. E.
Hershiser, O. L.
Huber, L. B.
Lewis, J. L., and wife.
Muth, Fred W., and wife.
McKnight, W. L.
Miller, F. J., and wife.
McDonald, Fred B., and wife.
Morrison, W. K.
Myers, Wm.
Myers, Thomas.
Manley, Wm J.
Manley, Herbert J.
Mandeville, M.
Pressler, E. E.
Pettit, S. T.
Phillips, E. F.
Root, A. I.
Root, E. R.
Root, H. H.
Smith, C. F., and wife.
Sims, J. S.
Smith, F. H., and wife.
Soper, W. D.
Strittmatter, F. J.
Tyrrell, E. B.
Taylor, R. L., and wife.
Townsend, E. D., and wife.
Tyrold, John.
Thompson, Decker.
Werner, Louis.
Wilcox, Franklin.
White, W. G.
Williamson, G. T., and wife.
Wood, A. D. D.
Wright, W. D.
York, Geo. W.

Let no one think that the foregoing are all the persons who will be present, as not one person in a dozen will take the trouble to write to the Secretary and say that he is going; besides, many don't make up their minds to go, until the very last moment. Notice the number of ladies who are to be present. There will be more ladies present at this convention than have ever before graced a convention with their presence. Come, and bring *your* wife. W. Z. HUTCHINSON, Sec.

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The semi-annual convention of the Connecticut Bee-keepers' Association will be held Friday, October 16, 1908, room 50, State Capitol, Hartford. All bee-keepers are cordially invited to meet with us. Bring something for exhibition.
JAMES A. SMITH, Sec'y, Box 38, Hartford.

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PANHANDLE BEE-KEEPERS' CONVENTION.

The Panhandle Bee-keepers' Association will meet in Knights of the Golden Eagle Hall, corner 38th Street and Jacob Street, Wheeling, West Virginia, on Monday, Nov. 16.
Blaine, Ohio. W. L. KINSEY, Sec.

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The annual meeting of the Northern Illinois and Southern Wisconsin Bee-keepers' Association will be held in the court-house in Rockford, Ill., on Tuesday and Wednesday, Oct. 20 and 21, 1908. All interested in bees are invited to attend.
Cherry Valley, Ill. B. KENNEDY, Sec.

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HOTEL TULLER.

The editors of GLEANINGS will make their headquarters at the Tuller during the convention. Our friends are invited to secure rooms there also. E. R. ROOT.

## PROGRAM FOR THE NATIONAL CONVENTION.

The National Bee-keepers' Association will hold its annual convention, October 13, 14, 15, in the Sun Palace of the Wayne Hotel, at the foot of Third St., Detroit, Mich. Headquarters will be at the Wayne Hotel, where the rates to bee-keepers are $2.50 per day when two persons occupy the same room. There are plenty of other hotels in the vicinity where the rates vary from $1.25 to $2 25 per day.

The Michigan State Bee-keepers will hold a session at the same place on the afternoon of the 13th, beginning at 2 P. M. The first regular session of the National will be held on the evening of the 13th.

OCTOBER 13—FIRST DAY—EVENING SESSION.

"Demonstration of Handling Live Bees in a Cage," by E. R. Root, of Medina, Ohio.

"Bee-keeping in Hawaii," by Prof. E. F. Phillips, of the Apicultural Bureau, Washington, D. C. This lecture will be illustrated by stereopticon views secured by Prof. Phillips during his recent trip to Hawaii.

"Moving-picture Exhibition," by E. R. Root, of Medina, Ohio. To run this film through the lantern requires about ten minutes, and it gives a fair idea of some of the "stunts" they do in England when handling bees. Some of them are decidedly mirth-provoking.

OCTOBER 14—SECOND DAY—MORNING SESSION.

8:00 A. M.—President's Address.

"The Bacteria of Bee Diseases," by Dr. G. F. White, of the Apicultural Bureau, Washington, D. C.

"How to Detect and Know Bee Diseases," by W. D. Wright, of Altamont, N. Y., one of the New York Inspectors of Apiaries.

RECESS OF 15 MINUTES.

"Getting Rid of Foul Brood with the Least Financial Loss," by R. L. Taylor, of Lapeer, Mich., Inspector of Apiaries for Michigan.

General Discussion on Diseases of Bees.

Question-box.

ADJOURNMENT.

OCTOBER 14—SECOND DAY—AFTERNOON SESSION.

2:00 P. M.—Debate on the following: "*Resolved*, That an eight-frame Langstroth hive is preferable to a larger hive in extracted-honey production." affirmative taken by S. D. Chapman, of Mancelona, Mich., and the negative by R. F. Holtermann, of Brantford, Ont. Each contestant is allowed to speak twice, using not more than 15 minutes each time.

General discussion of the subject.

Question-box.

RECESS OF 15 MINUTES.

"Turning Winter Losses into Profit," by W. J. Manley, of Sandusky, Michigan.

Question-box.

Adjournment, and members photographed in a group.

OCTOBER 14—SECOND DAY—EVENING SESSION.

7:00 P. M.—This session is to be in a lighter vein—as the story is to more solid reading. It is to be in imitation of the toasts that usually follow a banquet—that is, responses to sentiments. The speakers are to remain unknown until announced by the toastmaster, but the list of topics is as follows:

Securing Legislation for Bee-keepers.
Rough Spots in the Pathway of an Inspector of Apiaries.
Late Apicultural Inventions.
The Possibilities of Future Bee-keeping.
The Cost of Honey Production.
Bee-keepers as Temperance Reformers.
The Friendship of our Fraternity.

ADJOURNMENT.

OCTOBER 15—THIRD DAY—MORNING SESSION.

8:00 A. M.—"Locating Apiaries," by E. D. Townsend, of Remus, Mich.

Discussion.

Question-box.

RECESS OF 15 MINUTES.

Question-box.

ADJOURNMENT.

OCTOBER 15—THIRD DAY—AFTERNOON SESSION.

2:00 P. M.—"How to Secure Good Prices for Honey, even in Years of Bountiful Yields," by O. L. Hershiser, of Kenmore, N.Y.

Discussion.

RECESS OF 15 MINUTES.

Question-box.

Adjournment to see honey extracted with an eight frame automatic extractor, with gasoline-engine as power.

The foregoing is simply an outline, a sort of skeleton, which will be filled out with good things.

W. Z. HUTCHINSON, Sec. N. B. K. A.

PREMIUMS OFFERED AT THE NATIONAL CONVENTION.

Through the generosity of the leading manufacturers and dealers the following liberal premiums are offered for the display of bees, honey, and wax at the coming national convention:

Best and largest display of single-comb nuclei of different varieties of bees, accompanied by queens; condition of bees, purity of race, and beauty of hives to be the competing points.

1st premium, 2000 No. 1 sections by the G. B. Lewis Co., Watertown, Wis.; 2d premium, $3.00 Italian breeding-queen from the Medina apiary of The A. I. Root Co.; 3d premium, two years' subscription to the *Canadian Bee Journal*, by the Hurley Printing Co., of Brantford, Ontario.

Best ten sections of comb honey, completeness of filling of section, evenness of surface of comb, completeness of capping, freedom from travel-stain, and general neatness and appearance to be the competing points.

1st premium, 1000 No 1 sections from the G. B. Lewis Co., of Watertown, Wis.; 2d premium, cloth-bound copy of the A B C and X Y Z of Bee Culture, by The A. I. Root Co.; 3d premium, one year's subscription to the *Canadian Bee Journal*, by the Hurley Printing Co., and one year's subscription to the *American Bee Journal* by Geo. W. York & Co., Chicago, Ill.

Best ten pounds of liquid extracted honey, quality and manner of putting up for market to be considered.

1st premium, 1000 No. 1 sections, by the G. B. Lewis Co., of Watertown, Wis.; 2d premium, Jumbo copper smoker, by The A. I. Root Co.; 3d premium, Root Standard tin smoker, by W. D. Soper, of Jackson, Mich., and one year's subscription to the *American Bee Journal*, by Geo. W. York & Co.

Best ten pounds of granulated honey; quality, including fineness and smoothness of grain, and manner of putting up for market to be considered.

1st premium, 1000 No. 1 sections, by the G. B. Lewis Co., of Watertown, Wis.; 2d premium, Standard tin smoker, by The A. I. Root Co.; 3d premium, one year's subscription to the *American Bee Journal*, by Geo. W. York & Co.

Best ten pounds of beeswax; color, texture, and beauty of the cake or cakes in regard to shape to be considered.

1st premium, one $5.00 Italian breeding-queen from the Medina apiary of The A. I. Root Co.; 2d premium, one year's subscription to the *American Bee Journal*, by Geo. W. York & Co.; 3d premium, one Root hive-tool by The A. I. Root Co.

The most important late apicultural invention that has not before been awarded a premium.

1st premium, $5.00 worth of bee-supplies, "Root Quality," by M. H. Hunt & Son, of Lansing, Mich.; 2d premium, one full leather-bound copy of the A B C and X Y Z of Bee Culture, by The A. I. Root Co.; 3d premium, one copy of Advanced Bee Culture, by W. Z. Hutchinson, Flint, Mich., and one year's subscription to the *American Bee Journal*, by Geo. W. York & Co.

For the best single section of comb honey, A. G. Woodman & Co., of Grand Rapids, Mich., offer one Woodman Protection hive; for the second-best single section they offer 1000 No. 1 Lewis sections; for the third best, one advanced bee-veil.

For the best single section of honey stored in a Marshfield section box, W. D. Soper, of Jackson, Mich., offers 500 No. 1 Marshfield sections. For the best ten pounds of comb honey produced with Dittmer foundation, Mr. Soper offers three pounds of Dittmer's extra-thin foundation.

The judge to pass upon the above exhibits will be appointed by the president. W. Z. HUTCHINSON, Sec. N. B. K. A.

## KIND WORDS.

GLEANINGS pays better than papers with a circulation of 100,000 or more.

I am very much surprised at the results that your paper brought me. The first advertisement that I ever inserted in your journal was on page 250 of your Feb. 15th issue: and I must state that it has brought me better results than any advertisement that I ever had in papers that boasted of from 105,000 to 250,000 readers.

Iowa City, Ia., March 3. J. F. BUCKMAYER.

A small advertisement brings *lots* of orders. Notice what she says—*orders*, not inquiries.

*The A. I. Root Co.:*

My advertisement in your journal is bringing lots of orders, and I am sending out better queens than ever this year. I get some very flattering compliments for queens sent last year.

Waterloo, N. Y., June 24. MRS. J. W. BACON.

Bees all sold from advertisement in GLEANINGS.

*The A. I. Root Co.:*

My bees are all sold out to parties who saw my advertisement in your journal. We find it a splendid advertising medium.

Minneapolis, Minn. P. H. DAVIS.

*The A. I. Root Co.:*

The 25-line property-for-sale advertisement brought me letters from Canada to Mexico, and from the Atlantic to the Pacific. I do not know how many, but lots of them.

Lusardi, Cal., July 29. A. J. BURNS.

# SUBURBAN LIFE

THE LEADING MAGAZINE FOR THE SUBURBAN HOME

**PRACTICAL**
**PROGRESSIVE**
**HELPFUL**
**TIMELY**

**BIG**
**BROAD**
**BEAUTIFUL**
**SATISFYING**

## THE BEST PRINTED PERIODICAL IN AMERICA

The magnificent illustrations and unexcelled presswork of Suburban Life delight the eye of the reader, while the high standing of our writers makes every line of reading matter of practical value to the great number of people who reside in suburban homes, or who are truly appreciative of country life, with its manifold outdoor interests. You read Suburban Life because every number is brimfull of bright, spicy, interesting matter, as you will note from a glance over a partial list of the Table of Contents for the November issue:

FIVE ACRES AND CONTENTMENT
A WORKSHOP AT HOME
MAKING A HOME GYMNASIUM
A CLUBROOM FOR THE BOYS AND GIRLS AT HOME
THE SMALL ENGINE AND THE MOTOR
THE STEREOPTICON IN THE HOME
A WOMAN'S SQUAB PLANT
A HALLOWE'EN PARTY
DRESSING THE HORSE, ETC.

**Other interesting features for succeeding numbers appeal to every member of the home, and include:**

**SOCIAL LIFE**—The Long Day of the Commuter's Wife. Evening Amusements at Home.

**LIVING FROM THE LAND**—Can I Make a Living from a Small Place? Personal Experiences of People Who Are Making Good, Comfortable Incomes from Less than Twenty Acres.

**THE NEW NATURE STUDY** — Night Prowlers Who Aid the Farmer. What Will Happen When the Birds Are Gone?

**TIMELINESS**—What Ought to Be Done Each Month About the House and Grounds, in the Greenhouse, the Stable and Poultry Yard.

**THE HOME**—Artistic and Sensible Window Draperies. New Things in Furniture. Sleeping-Porches.

**WOMAN'S WORK**—Personal Experiences of a Number of Women Making a Living in the Country.

**FLOWER AND VEGETABLE GARDENS** — An Electric Hotbed. Garden Insects and Diseases.

**OTHER FEATURES**—Poultry, pigeons, the horse, the cow, the dog, the cat, bees and pet stock, will receive the attention which their importance merits.

**CIVIC IMPROVEMENT**—This important topic will be treated in a practical manner, and also the subject of conservation of our natural resources.

**These are but a few of the many good things in store for our Suburban Life readers the coming season**

25 CENTS A COPY, ON ALL NEWS STANDS. $3 A YEAR.

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Gentlemen: Please enter my subscription for **four months**, for which I enclose **fifty cents**.
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# Don't Buy a Stove or Range Until You First See

# How Much You Save By Getting

## "A Kalamazoo Direct to You"

TRADE MARK REGISTERED

YOU want to make every cent you spend this year, **count** for **quality** and **economy.**

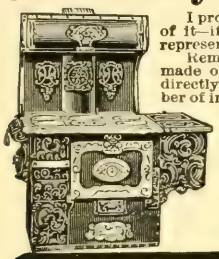
If you need a stove or range, don't buy until you get our **factory** prices.

I promise you that I will save you $5, $6 or $10 on our smallest stoves, and as high as $18, $20 and even $30 on our largest. And I promise you that you cannot get **anywhere** at **any** price, a better stove or range than the Kalamazoo.

Just let me quote you prices. Take our catalogue and **compare** the Kalamazoo **quality** and **prices,** with the best line of stoves and ranges you can find sold at retail. **That** will tell the story. You can see for yourself. You want to save money and you want to get high quality. Why not investigate our plan, then? Why not let me show you the difference between manufacturers' prices and retail prices on stoves or ranges?

We sell to you, direct from the factory, at actual factory prices,

## On 360 Days Approval Test—We Pay the Freight



I promise, in black and white, to refund your money—every cent of it—if you do not find your purchase in every way exactly as represented.

Remember, every Kalamazoo is of the highest possible grade, made of the best materials and in the best manner. You deal directly with the manufacturers—a company that has a larger number of individual customers than any other stove company in existence. We have sold thousands of stoves and ranges to readers of this journal, and no doubt can refer you to near neighbors who have saved money by buying a Kalamazoo. Many customers write that they have saved enough on a single Kalamazoo to pay for a whole season's fuel. You can save enough to buy a new suit, a new dress, an article of furniture, or perhaps to pay your taxes. Is it not to **your** interest to get our prices?

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describing more than 300 sizes and styles of Coal and Wood Ranges, Coal and Wood Heaters, Hotel Ranges, Base Burners, Laundry Stoves, Etc.

**I know** that if you get our prices—and see our quality you will not even **think** of buying any other make. Let me show you how much you can save.

**William Thompson, Vice-Pres. & Gen. Mgr.**
**KALAMAZOO STOVE CO., Mfrs. Kalamazoo, Mich.**



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I want to send you my handsome new book showing over 400 of the latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for 5 cents each. They are the same patterns you have always paid 10c and 15c for at the stores, made by the same people, and correct in every detail.

**HOW I DO IT.**

I publish **The Home Instructor,** an illustrated woman's magazine and I want your name on my subscription list. **The Home Instructor** is bright, entertaining, clean and instructive—just the sort of a paper you should have in your home It has departments for every feature of home life, and prints the choicest fiction every month. Every issue has several pages devoted to the latest fashions, fully illustrated.

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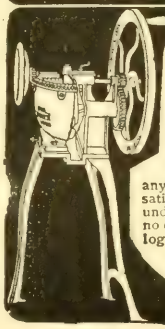
Send me 25 cents and I will send you **The Home Instructor** for **two years** and will send my big fashion book to you free. I will also agree to sell you any pattern you want thereafter for 5 cts. I can sell them for 5 cents because I buy them by the thousand and don't make any profit. I don't want the profit, I want your subscription to **The Home Instructor.** You will save many times the cost of my offer in a year. Write to-day **A. OTIS ARNOLD,** Dept. B **Quincy, Ill**



# WINTER EGGS



Feed cut green bone; save half your grain and double your egg yield. The

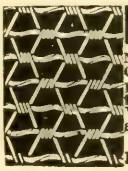
## Humphrey

**Green Bone & Vegetable Cutter,**

the only open hopper machine, is guaranteed to cut more bone, with less labor and in less time than any other. Money back if you are not satisfied. It's the one hand cutter; feed under operator's control at all times; no complicated parts. Send for catalogue and special **Trial Offer.**

**HUMPHREY,**
**Mine St. Factory,**
**Joliet, Ill.**





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**COILED SPRING FENCE CO.**
Box 101 **Winchester, Indiana**

# HONEY

We have on hand a fine lot of new extracted white-clover honey which is excellent, and which we offer at the following prices:

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|---|---|---|
| Barrels (about 550 lbs. each) . . . . . | 8c | per pound |
| Ten 60-lb. cans or more . . . . . | 8½c | " |
| Two 60-lb. cans or more . . . . . | 9c | " |
| One 60-lb. can . . . . . | 10c | " |
| Six 10-lb. cans or more . . . . . | $1.15 | each |
| Twelve 5-lb. cans or more . . . . . | 60c | " |

After September 20th we can furnish amber fall honey at the same prices as above.

Sample free

**DADANT & SONS, Hamilton, Ill.**

# FOR OVER 25 YEARS

our make of goods has been acknowledged to be in the lead as regards WORKMANSHIP and MATERIAL.

## Our AIR-SPACED HIVE is a most excellent w[illegible]

and fully as good and convenient for summer man[illegible] a[illegible] single-walled. Same inside dimensions as regular Dovetailed hives; all inside material interchangeable with Dovetailed hives.

## We manufacture full line of BEE-KEEPERS' SUPPLIES.

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| FALL AND WINTER DISCOUNTS: | Sept., 7 per cent. | Nov., 5 per cent. | Jan., 3 per cent |
| | Oct., 6 per cent. | Dec., 4 per cent. | Feb., 2 per cent. |
| | | | Mar., 1 per cent. |

Catalog free.

## W. T. FALCONER MFG. CO., Jamestown, N.Y.

# Gleanings in Bee Culture

AN APIARY IN OKLAHOMA.

*Published by The A. I. Root Company, Medina, Ohio, U. S. A.*

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI October 15, 1908 No. 20

| | |
|---|---|
| Gleanings in Bee Culture, 1 yr. . . | $1.00 |
| Ohio Farmer, (20-page weekly) 1 yr.. | .75 |
| Concrete Construction on the Farm . | .50 |
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**THE OHIO FARMER** is published in the interests of that great body of American farmers who follow mixed farming. You will find it an **authority** on live-stock breeding in all its branches, dairying, cattle-feeding, poultry, horses, bees, horticulture, gardening, etc.; a help in **every one** of your every-day farm operations.

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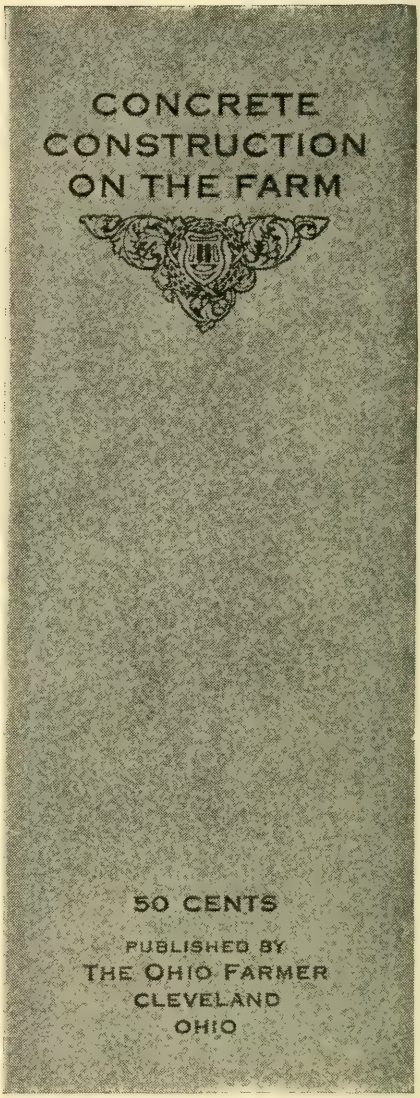
**We guarantee** that **The Ohio Farmer** will invariably **stop on expiration of subscription** paid for.




# Concrete Construction on the Farm.

Realizing the present immense use, and the rapidly increasing importance, of cement and concrete upon the farm, and also the necessity of a comprehensive book upon the volume, this matter was written especially for The Ohio Farmer, and contains complete and easily understood working instructions, with illustrations, for building—**Foundations, Silos, Walks, Floors, Bridges, Cisterns, Culverts, Tanks, Posts, Drain-tile, etc.**

This book will give you a complete working knowledge of this timely and important subject, and probably save costly errors.

In no other book can you obtain the same information, which is the result of the experience of one of the acknowledged experts of this country.

The price is 50 cents postpaid, but for a short time we will send

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It is not sent free with subscriptions for less than one year, and **must always be requested** when the order is sent.

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Address all orders to GLEANINGS IN BEE CULTURE, Medina, Ohio

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**The Chicago House Wrecking Co. Purchased at forced sales, 50,000,000 feet of new lumber.** We are making special concessions to those who buy at once. Our prices today are far lower than prices have been for years. Order now for immediate or future use. Quick action will save you big profits. Remember prices elsewhere which are even now high, are bound to rise. We can quote you 30 to 60 per cent better prices for the same lumber than your local dealer. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

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## IMPORTANT! Send Us Your Lumber Bill For Our Estimate

Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which means sacrificed prices and enables us to sell even as low as cost without loss. You take no chances in dealing with the Chicago House Wrecking Company. Whether for $1 or $10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

We also furnish you building and barn plans absolutely free upon request. Write us for any information or advice you want and we will have our staff of architects answer every inquiry promptly. Our free book of plans is sent if you mention this paper. We simplify your building proposition.

Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of every detail. That is what our Special Builder Service is for. Be sure and send us your lumber bill for our estimate. Feel free to write for anything you want to know along the line of building supplies, furnishings, etc.

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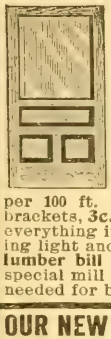
***Hundreds of Big Money Saving Bargains for Every Builder. Don't Build Your House, Barn, Store, Corn Cribs, Church, Etc., without getting Our Big Lumber Offer. Lowest Prices on Millwork Supplies, Roofing, Water Supply Outfits, Paints, Plumbing Supplies, Hardware, Heating Outfits, Furniture, Carpets, Linoleum, Etc.***

## DOORS 40c WINDOWS 20c



**1,000** good doors, various sizes, secured by us in connection with dismantling operations, most of them with hardware. Prices range from **40c** up. Fancy front doors, all designs, **$1.50** up. 10,000 window sash, **20c** up, all sizes. Complete line of everything in mill Work. All brand new, best quality. Barn sash, 6 sizes, **25c** up. Cellar sash, **37c** up. Clear yellow pine mouldings, **25c** per 100 ft. up. Porch columns, **54c** up. Stair newels, **$1.78.** Stair rail, **10c** per ft. Pilaster casing, O. G. base, **1 3-4c** per ft. Base blocks, **4c** each. Quarter round, **25c** per 100 ft. Hardwood thresholds, **4c.** Porch brackets, **3c.** Porch spindles, **4c.** We handle everything in the Building Supply Line, including light and heavy hardware. **Send us your lumber bill for our estimate.** Ask for our new special mill work catalog. It prices everything needed for building purposes. Sent free.

## Rubberized - Galvo Roofing

**$1.25 per sq.** Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Weather-proof and fire-proof. We furnish with each order sufficient cement to make the laps and large head nails. Price is per sq. of 108 sq. ft. **1 ply, $1.25. 2 ply, $1.40. 3 ply, $1.75.**

## OUR NEW 500-PAGE CATALOG NO. 688 FREE.

**This Wonderful Bargain Book** is just out and ready to be sent to you at once. It is a book such as every shrewd buyer must have. **500 Pages** with thousands of items of the very best merchandise and supplies bought at the Sheriffs' and Receivers' Sales. It will pay you to keep it handy. Its pages contain a full record of what we still have on hand from the wonderful St. Louis Worlds' Fair. Merchandise, Machinery and Supplies, articles for every one. You will find it useful in the home, in the workshop or in the office. Write today. **Cut out coupon in corner.** Fill in answers to questions. Sign your name and address in full and mail to us. We will send you our Catalog free upon receipt of coupon and answers to questions.

***CHICAGO HOUSE WRECKING COMPANY, 35th and Iron Streets, CHICAGO, ILL.***

## *FREE CATALOG COUPON*

***Fill out, cut out, and Mail to Us.***

When do you expect to build or improve?.....

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What kind of building or buildings?.....

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Town.....County.....

R. F. D. or P. O. Box.....State.....

I saw this advertisement in Gleanings in Bee Culture.

Send me free of all cost your 500-page Catalog. Address

**Chicago House Wrecking Co., Chicago**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

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INDIANAPOLIS.—While prices are not high, the demand for honey has never been better—a fact that can be attributed to the quality of goods now on our market. This is a white-clover district, and our market is almost free from honey from other sources. Producers are offering fancy white comb at 12½; No. 1 white, 12; white clover, extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is not sufficient to establish a price. Beeswax is steady at 28 cts. cash, or 30 cts. in exchange fot merchandise.

Oct. 5. WALTER S. POUDER, Indianapolis.

COLUMBUS.—The market shows a little more activity in honey, and some inquiries from out-of-town buyers are being received. We quote: Fancy white, 15; No. 1 white, 13½ to 14; No. 2 white, 12; amber, 10. We are in position to handle good stock.

Oct. 7. EVANS & TURNER, Columbus, O.

KANSAS CITY.—There is a good demand for honey here, but prices here are somewhat lower than last month, $3.00 being about the top of the market for white comb honey; amber, $2.75 per case. There is also a good demand for extracted honey, but there is very little here, white selling at 8, amber at 7. Beeswax brings 25 to 28.

Oct. 5. C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

ZANESVILLE.—On account of the fruit season and generally quiet condition of trade, the demand for honey is rather slack. For strictly No. 1 to fancy white comb the jobbing trade would pay 13 to 14, and for extracted, 7 to 8. The market is pretty well stocked with comb, and prices are weakening somewhat. No. 1 to fancy brings 16 to 17 wholesale, and extracted in tin cans, 9 to 10. For good yellow beeswax, purity guaranteed, I am offering 28 cts. cash or 30 in exchange for bee-supplies f. o. b. here. E. W. PEIRCE,

Oct, 6. Zanesville, O.

ST. LOUIS.—Our market to-day is in precisely the same condition—dull on all grades of honey, especially comb honey. We quote: Fancy white comb honey, 12 to 12½; choice amber, 11 to 11. Broken or leaking honey sells at considerably less. Choice amber honey in barrels and half-barrels brings 6 cts.; in five-gallon cans, 6½ to 7. Dark and inferior grades rule at less. Beeswax, choice pure, brings 28.

R. HARTMANN PRODUCE CO.,

Oct. 5. St. Louis, Mo.

SAN FRANCISCO.—Prices quoted by local dealers show no change. There is still a small movement of new honey from the producing districts, though the greater part of the crop has been marketed. The demand is quiet. We quote: Water-white comb, 16 to 17; white, 15; water white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5¾.—*Pacific Rural Press*, Oct. 3.

CHICAGO.—Beginning with this month we usually have an active trade in honey, and there has been quite a little movement in it this week; but the stocks here are quite large, and widely distributed. Firms that have not had any honey for some years are getting from five cases to a larger quantity, and they wish to dispose of it as soon as possible, which means taking a lower price than the market is endeavoring to get, so that some lots of No 1 to fancy have sold at about 12 cents. The ruling prices asked now for A No. 1 to fancy grades are 13 to 14 cents, and for grades lower, from 1 to 3 cts. per lb. less. This includes the amber. From 7 to 8 cts. per lb. is asked for the best grades of white extracted, and 5½ to 6½ for the amber grades. Beeswax is steady at 30. R. A. BURNETT & CO.,

Oct. 3. Chicago.

ALBANY.—The demand for honey is increasing now. The crop in this vicinity is unusually light. The market will have to depend on outside territory more than usual. We quote: Finest white clover, 16; A No. 1, 15; No. 1, 14 to 15; buckwheat, 13 to 14; mixed, 13 to 14; extracted, white, 8; amber, 7½, dark or buckwheat, 7 to 7½. Beeswax is scarce at 30 to 32.

Oct. 10. H. R. WRIGHT, Albany.

CINCINNATI.—Since our last report, cooler weather has set in, which has stimulated the demand for comb honey wonderfully. Buyers are interested now after having refused to take hold so long as we had warm weather. For strictly fancy comb honey we are getting from 14 to 16 cts. Lower grades are always disposed of at a sacrifice, and for that reason we do not encourage shipments of inferior grades to this market. Amber extracted honey in barrels is selling at 5½ to 7, according to quality and quantity purchased. Extracted white-clover honey is selling at 7½ to 9, which is likewise in accordance with the quality and quantity. We are paying 27 cts. per lb. for good to choice beeswax, free from dirt, delivered here. We believe all bee-keepers should ship their comb honey to their markets before cold weather sets in.

Oct. 5. THE FRED W. MUTH CO. Cincinnati, O.

SCHENECTADY.—The receipts of honey are more liberal, but the demand is not equal to that of last season, and we do not look for top-notch prices. This is presidential year with its usual uncertainties, and which is not productive of confidence in business lines. We quote: Fancy white, 15 to 16; No. 1, 14 to 15; No. 2, 12 to 13; mixed, 11 to 12; fancy buckwheat, 12 to 13; No. 1, 11 to 12; light extracted, 7 to 8; dark, 6½ to 7½.

CHAS. MACCULLOCH,

Oct. 5. Schenectady, N. Y.

DENVER.—We quote No. 1 white comb honey, per case of 24 sections, $3.15; No. 1 light amber, $3.00; No. 2, $2.85; strained and amber extracted, 6¾ to 7¾; light amber, 7½ to 8¼; white extracted, 8½. We pay 24 cts. for clean yellow beeswax delivered here. Owing to a large supply of fresh fruit in this section the demand for comb honey is light at present.

THE COLORADO HONEY PRODUCERS' ASS'N.,

Oct. 6. Denver, Col.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY
Purchasing Department,
Washington Blvd. & Morgan St.
CHICAGO, ILL.

If your honey crop is short, and you need something fine to supply your customers, write to us, for we have it.

FINEST Water-white Mountain-sage Honey (extracted).

BEST White-clover Honey (extracted).

WATER-WHITE Sweet-clover Honey (extracted).

All in crates of two 60-lb. cans each.
Also FANCY COMB HONEY.

WRITE US FOR PRICES

THE FRED W. MUTH CO.
The Busy Bee-Men
51 Walnut Street Cincinnati, Ohio

# HONEY WANTED

both
Comb and Extracted
of all kinds.

No shipment too large for us. Send samples, and state best price delivered here. We remit as soon as goods are weighed in. Best of references furnished. Don't sell until you quote us price; it will be to your interest. Large stock of Root's bee goods carried constantly on hand. Greatest shipping center in the United States—both rail and boat. Try us.

Griggs Bros. & Nichols Co.
523 Monroe St. .. Toledo, Ohio

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

HILDRETH & SEGELKEN,
265-267 Greenwich St. 82-86 Murray St
NEW YORK

CHAS. ISRAEL & BROS.
486-490 CANAL ST., NEW YORK
WHOLESALE DEALERS AND COMMISSION MERCHANTS IN
Honey, Beeswax, Maple Sugar and Syrup, etc
Consignments Solicited. :: Established 1875.

# SACKETT WRAPPERS

(Transparent) FOR COMB HONEY
NOW BEING USED BY LARGE PRODUCERS

Makes section look more attractive, and increases selling price. Any one can apply it and get 2 to 4 cents more per pound, and it costs you only a fraction of a cent per section.

Price $3.25 per thousand sheets, printed with name and address.

Samples free. Special prices on quantities.

H. A. SACKETT, 147 W. 26th St., N. Y. City

# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT CO., Medina, Ohio.
J. T. CALVERT, Business Manager.

$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.


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**Offer No. 8B.** BEE GLOVES. One pair cloth bee-gloves, with or without fingers, with GLEANINGS one year, $1.35.

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*The above prices are all postpaid.*

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**THE A. I. ROOT COMPANY, MEDINA, O.**

# A TRIFLE OFF IN COLOR AND A SHADE LOWER IN PRICE

Late last fall we added another apiary to our series of out-yards in Northern Michigan. It was a magnificent raspberry location, and we supposed that region entirely free from other honey-producing plants; but when we came to harvest the crop this fall we found that the honey was not strictly water-white. The color could not be detected in a small quantity like a spoonful, or even a saucerful, but by filling a glass fruit-jar or pitcher, and holding it up to the light, a very slight reddish or pinkish tinge can be noticed.

Probably 99 in every 100 pounds of this honey are pure raspberry. We certainly can detect no difference in the taste or flavor between this honey and the strictly pure raspberry, and we presume not one customer in a dozen would notice the slight color, unless he had the two kinds side by side and some one called his attention to it, but we don't propose to send out any honey as strictly pure raspberry unless it is such. We have put up the honey in 60-pound jacketed tin cans, and offer it at $5.50 per can—75 cents less than we get for the same amount of the water-white, strictly pure raspberry. If you don't care for the slight trace of color you can save 75 cents in buying a 60-pound can.

If you would prefer to see a sample before ordering, send ten cents and we will mail you one with pleasure, and the ten cents may apply on the first order you send. Ask for a sample of the "slightly-colored" raspberry honey.

We can still furnish the strictly pure water-white raspberry honey at $6.25 for a 60-pound can, or $12.00 for 120 pounds.

All of our honey is thoroughly ripened, thick, rich, and truly delicious—a cent or two extra on the pound does not cut much figure when it comes to the eating.

**W. Z. HUTCHINSON, Flint, Mich.**

---

# HONEY-JARS

## from New York City

We consider the No. 25 jar with solid metal cap and waxed liner the best jar made for honey.

Gross crates . . . . $5.00; 5 gross, $4.75 per gross.
12-oz. screw-cap jar . . 4.50; 2 gross, 8.25 per gross.
1-lb. sq. jar with cork . 5.00;
Italian queen . . . . 1.00. Catalog free.

Apiaries, Glen Cove, L. I.

**I J. STRINGHAM 105 P rk Place, New York**

---

# Fashion Book Free!

I want to send you my handsome new book showing over 400 of the latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for 5 cents each. They are the same patterns you have always paid 10c and 15c for at the stores, made by the same people, and correct in every detail.

**HOW I DO IT.**

I publish **The Home Instructor**, an illustrated woman's magazine and I want your name on my subscription list. **The Home Instructor** is bright, entertaining, clean and instructive—just the sort of a paper you should have in your home It has departments for every feature of home life, and prints the choicest fiction every month. Every issue has several pages devoted to the latest fashions, fully illustrated.

## My Special Offer.

Send me 25 cents and I will send you **The Home Instructor** for **two years** and will send my big fashion book to you free. I will also agree to sell you any pattern you want thereafter for 5 cts. I can sell them for 5 cents because I buy them by the thousand and don't make any profit. I don't want the profit, I want your subscription to **The Home Instructor.** You will save many times the cost of my offer in a year. Write to-day **A. OTIS ARNOLD,** Dept B **Quincy, Ill**

---

How to Get a

## Delicious Apple & Banner Grape Tree & Vine Free

Fill in Coupon below and get **THE FRUIT-GROWER** three months, Free and Our Offer to give away 2 Superb New Fruits. Handsomest farm paper published, interesting and helpful, even if you have only a few trees or plants. New fruits are finest ever introduced and would cost $1.50 at nursery. Both perfectly hardy. Delicious sold high as $6 bushel. Grapes are just grand. One of the Three handsome FREE trial copies will be

**Our Homeseekers Edition**

telling about wonderful new fruit districts in Northwest, West and Southwest. Our editor personally visited these sections and tells honestly and vividly all about them. This number alone worth hundreds of dollars to those seeking new and profitable home lands. Write now to The Fruit-Grower, Saint Joseph, Missouri.

**The Fruit-Grower, Box 907, St. Joseph, Mo.**
Send paper 3 months FREE and tell how to get New Fruits without cost, after which I will accept offer or notify you to stop the paper.

Name _____

Town _____ State _____

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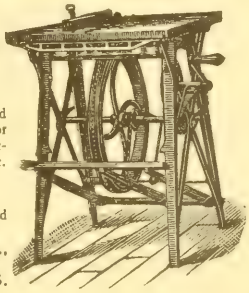
## BARNES' Hand and Foot Power MACHINERY



This cut represents our combined circular saw, which is made for bee-keepers' use in the construction of their hives, sections, etc.

## Machines on Trial

Send for illustrated catalog and prices. Address
**W. F. & JNO BARNES CO.,**
**545 Ruby St.,**
**ROCKFORD, . ILLINOIS.**

# GLEANINGS IN BEE CULTURE

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### "BUILD NOW."

There has been a campaign quietly going for some time which has for its title the above words. The meaning is obvious. At the present time the price of building material of all kinds is considerably lower than a year or more ago. It is not likely prices will go lower. The chances are all in favor of the price going higher, so that the advice to "build now" is sound and good. From all over the country advices have come that many are acting on this suggestion. Even large factories are being built under the idea that it will be much cheaper to build them now than later on when roseate prosperity has resumed its sway.

If everybody who has any need of building would take hold of the idea, "build now," it is only a matter of time when we should have prosperity of the most pronounced kind, as the building trade is the basis of many others. It requires the exercise of only a very small amount of faith to see that this country will continue to grow and expand as fast as it ever did in years gone by. All experts are agreed the check is only temporary, and that the *status quo* will soon be restored. When it is, prices will be considerably higher than now. The wisdom of building now will be apparent.

What adds weight to this advice is the new departure of the famous firm of Gordon, Van Tine Co., who have brought the methods of the great mail-order houses of Chicago to bear on the planing-mill business. You can now buy every thing necessary for a nice house in the same way you can buy groceries and clothes by mail. The net result of this is that the consumers save the profits of the middlemen and retailers. Nor is this all, for the buyer gets a much wider selection than if he purchased the goods at a small mill. The modern housekeeper wants something more than a shed for a home, even if she lives in the country; and almost the only way for many to get what they desire in house-building materials is to order from a mail-order house like the Gordon, Van Tine Co., Davenport, Iowa. They issue a large catalog of house materials so that any one can sit down and quietly figure for himself the cost of any building desired, be it a chicken-coop or a mansion. The signs of the times all point to this kind of enterprise being a success. Tremendous efforts have been made to crush this new way of doing business, but to no purpose; and on account of lower prices it *must* succeed. The logic of low prices can not be resisted, even by those who profess not to patronize mail-order concerns. This being so, we advise them to write for the Gordon, Van Tine Co.'s catalog at the earliest opportunity. See if these things are so.


4% A request on a postal will bring you our free booklet

Established 1892

BANKING BY MAIL

We will pay you 4 per cent—compounded twice a year on your savings account whether large or small—secured by assets of over $700,000. Managed by prudent and successful business men, and subject to and incorporated under the rigid Ohio State banking law. Under ordinary circumstances all or any part of your deposits may be withdrawn at will.

*Send for the booklet to-day.*

THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

**"If goods are wanted quick, send to Pouder."**
**Established 1889**

# Killing Two Birds With One Stone

*By the Bee Crank*

You accomplish two things by ordering your supplies of me now, providing your order is accompanied with the cash.

First, you save six per cent on the cost if ordered in October; five per cent in November, which, for the short time between now and the time you must have the supplies, means 12 to 15 per cent per annum on your money.

Second, and most important, when you are in need of your supplies they will be ready for you.

Most bee-men are not fond of writing letters. They delay ordering until the last minute, and frequently still later, and then are in a terrible rush for the goods. When about 75 per cent of my patrons do the same thing you can readily appreciate the scramble that ensues at this end of the line to keep from breaking my record.

Please remember that this is a special season discount, and not a concession because of any thing doubtful about the goods or the quality. The supplies are all fresh, clean, and the highest Root standard.

You should have my catalog. A postal will bring it. If you will send me your name I will place it on my mailing-list and send you from time to time notices regarding any thing new that would interest bee-men.

If your demand for honey exceeds your supply, write for my quotations. I carry a large stock of finest quality, and it might be to your interest to keep your trade supplied.

Save your beeswax—I pay 28 cents cash or 30 cents in trade.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

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TELEPHONES FOR ALL.

Every farmer knows the value of a telephone. It unites him and his family with the outer world. Many are the benefits which come from their use—so much so that a community can hardly call itself civilized in the best sense of the word unless it has an established phone system. Where all club together and unite their energies the cost is not great—in fact, infinitessimal in comparison with its benefits from a social and business point of view. For one thing, an efficient telephone line is a sign of progress and enlightment.

The presence of a telephone system in a locality is a great promoter of business; it gives strangers a much better impression of your enterprising spirit and it promotes social intercourse and otherwise binds people together as nothing else can. It is a protection against burglars, criminals, and tramps, and it is well known these gentry are afraid of a telephone system. Many have been caught by its aid. In time of sickness a telephone is an immense benefit and a great comfort. During storms it is also a power for good. It is often used to warn people of rapid changes in the weather, and in a multitude of ways is a great comfort to a family. Hardly any one can be found to dispute its value nowadays.

There are many localities, however, where, from the want of some progressive person, or the lack of information, a telephone exchange has not been installed as yet. We want to have a word with just such people. We wish to point out the fact that there is an easy way of getting what you need—a simple, cheap telephone system with only a moderate effort, and no special knowledge of electricity on your part. The Stromberg-Carlson Co., Rochester, N. Y., who manufacture phones and all necessary supplies, will show just how to go about it so you will have no difficulty whatever in mastering the whole problem. They have all the latest ideas on the subject, and can tell you just what to do, even if you are a perfect novice. They put up hundreds of systems in the course of a year, and, of course, know just how the promoters go about their work. Many go by their advice entirely. All you have to do is simply to keep in touch with the managers of the Stromberg-Carlson Company, who will keep you posted. If you absolutely don't know a thing about it, just write them to that effect, and they will at once proceed to coach you. In a short time you will know all about it—at least, enough to buy all the material, put it up, and manage the exchange. Many people have done this, so there is no doubt about it. If the men folks are too busy the women can do all the work except putting up the line. That is, they organize the company, buy the material, and conduct the exchange. If a telephone line is needed in your locality we heartily recommend you to write at once to the Stromberg-Carlson Telephone Co., Rochester, N. Y.

SEABOARD AIR LINE RAILWAY.

As usual the Seaboard Air Line commences the fall campaign by putting its fall advertisement elsewhere in this issue. It is one of the great railroad systems of the United States, embracing the States of Virginia, North Carolina, South Carolina, Georgia, and Florida. Despite the fact that these are old settled States—far older than Ohio, Indiana, or Illinois, there are still large areas of land untouched by the plow, or which are imperfectly cultivated. Some of this land can not be excelled in fertility; and the climate being exceedingly pleasant, and the markets close at hand, there is presented a unique opportunity for farmers, gardeners, and others to acquire a competency. Naturally the railroads would be be benefited if the country were more thickly settled, and this is the object of their propaganda. They want settlers of a certain kind—men who know how to farm intensively in growing truck and fruit, and in dairying, etc. Large numbers of Northern people have settled in the South, chiefly as market-gardeners. They grow large quantities of garden-stuff for shipment to the North early in the spring. They also grow immense quantities of strawberries and peaches.

It must not be supposed from this that these are the only industries open to Northern enterprise and capital. Raising hay, dairying, horse-raising, etc., are more profitable than usual, on account of the fact that the average cotton-planter buys from the North all his food supplies, his horses and mules, and even the food to feed the latter.

There is an idea among Northern people that the climate is too hot, or is too unhealthy, whereas it could hardly be better. The heat is never so oppressive as it is in the Mississippi Valley, and the winters are just cold enough to set vegetation to rest. Beautiful apples, pears, peaches, plums, grapes, strawberries, figs, etc., can be raised, and with greater certainty than in the Northern and Central States. Fine crops of wheat and oats can be raised; and as for corn, South Carolina has repeatedly beaten every other State in the Union in contests for the greatest yield of corn per acre.

To set at rest some of the erroneous ideas pertaining to the South and its possibilities the Seaboard Air Line is offering very low rates to homeseekers who desire to visit the South to look around and see for themselves the conditions. The managers think this will be convincing, and hope to secure a great many permanent settlers who will help to build up a white man's paradise. The South has made great progress, especially along the lines of education and temperance, within the last few years. Better go and see. The round-trip rates are cheap and attractive. The railroad also maintains a bureau of information at Portsmouth, Va., with Mr. John W. White as the manager. Write to them for all particulars. They are at your service.

# FROM A PACIFIC-COAST ADVERTISER.

It is no news to us that a firm in California finds it profitable to use our pages; but that you may see how we are regarded by a well-known agency and their clients, the California Fruit Product Co., we reproduce their letter below:

"CURTIS"
ADVERTISING COPY
ORIGINAL LETTERS
SELLING LITERATURE
ILLUSTRATIONS

LARGEST, STRONGEST, MOST CONSERVATIVE AND HELPFUL ADVERTISING CONCERN ON THE PACIFIC COAST HAS MORE SUCCESSES TO ITS CREDIT THAN ANY OTHER

ESTAB 1695

CURTIS-NEWHALL CO.

W. D. CURTIS, PRES. AND GEN'L MANAGER

ADVERTISING CONTRACTORS

228 MERCANTILE PLACE

"CURTIS"
PROVED LISTS
AGENCY METHODS
MAIL ORDER EXPERIENCES
HELPS TO SALESMEN

LOS ANGELES, Sept. 1, 1908.

GLEANINGS IN BEE CULTURE,

Medina, Ohio.

Gentlemen:-

It may interest you to know that the results from the California Fruit Product Co. advertising in your paper last season were very satisfactory, altho the order was placed late. We are expecting fine returns from you again this year.

Very truly,

Curtis-Newhall Company,

By E. J. Kuegeman

Chief Clerk.

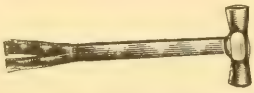
Whatever you have for the home or farm, the poultry-keeper, fruit-grower, or any similar class, GLEANINGS will undoubtedly prove a valuable advertising medium for you. For particulars address

**ADVERTISING DEPT. GLEANINGS IN BEE CULTURE, MEDINA, O.**

**The Little Magazine with a Big Field.**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**



This is the handiest tool for nailing up hives, frames and all parts, or for opening up hives. Made of steel, nickeled

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**

**Dubois, .. Pennsylvania**



# Odds and Ends Sale on Exhibition Goods While They Last

If you will send us a list of goods that you could use right away, or in the near future, we will quote you prices on such exhibition goods as we may have in stock. Don't wait, because this sale will be over in 30 days

**Blanke & Hauk Supply Co.**

**ST. LOUIS**

Standard the World Over

*Syracuse The A. I. Root Co. New York*

*Syracuse The A. I. Root Co. New York*

**Traps**

**Veils**

**Hives**

**Frames**

**Smokers**

**Sections**

**Foundation**

**Wax-extractors**

**Honey-extractors**

**Shipping-cases**

**Bee-appliances**



# APICULTORES

**De Espana, Portugal y Colonies.**

Pidan catalogos de las colmenas, extractores, prenzas para cera, ahumadores, zinc perforado, escape de abejas, velos, cuchillos, maquinas para hacer base de panales, y todos otros articulos utiles en apicultura manufacturado por la celeberrima casa de

**A. I. Root Company,**

la fabrica la mas importante del mundo. Precios muy modicos a los subagentes por mercancias puestas en nuestros talleres.

**EMILE BONDONNEAU,**

Agente Générale

POR TODA EUROPA Y COLONIAS,

142 Faubourg SAINT DENIS, PARIS. 10me.

## "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

*Cash or goods for wax at all times.*

**George E. Hilton**
**Fremont, . . Michigan**

## WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

A FULL LINE OF

## Shipping-cases,

**Honey-extractors,**

**and all other seasonable goods now on hand.**

We are also prepared to supply goods for next season's use at special discounts.

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# GLEANINGS IN BEE CULTURE

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## STRAY STRAWS

DR. C. C. MILLER

HAHNEMANN, the aged bee-keeper mentioned on page 1186, is, if I mistake not, the inventor of the queen-excluder. Going from Germany, he has been in Brazil many years.

E. D. TOWNSEND, I was a little surprised that you didn't mention dandelion in your list of honey-plants, p. 1185. It was introduced here perhaps 60 years ago, and now it is worth more than all early yielders combined, leaving out fruit-bloom.

"TIMELY HINTS on fall uniting," p. 1178, are good. Let me add that, if you kill one queen two or three days before uniting, then move the queenless bees to the hive with the queen, it will ensure the safety of the queen, and the queenless bees will stay put better than queenright bees. [Correct, according to our experience.—ED.]

A. I. ROOT, you seem to think, p. 1209, that if you have your money in government bonds you can't get it just when you want it. That's true, and it's not true. You can get the money for a government bond any day, but you must sell the whole bond at once. If you want only a small part you can't get it. There's where postal or savings banks are ahead.

THE SEASON was somewhat disappointing at the latter end, owing, at least partly, to the drouth of 43 days. Still, I'm not grumbling. An average of 151 sections per colony (about 138½ lbs.) is not bad. The best colony gave 276 sections, falling 24 sections short of the best yielder in 1903. [Now we are curious to know how many colonies you had, or, in other words, what is your total crop?—ED.]

A. I. ROOT, speaking of preparing wheat cheaply for the table, p. 1213, did you ever try it with no preparation whatever except to boil the whole wheat? In college days it was a staple article with me, and I assure you a peck of wheat will go a long way. Boil it three hours. A good medicine for constipation. Cheap, too. Some of the time my board cost 35 cents a week. But I don't hanker to repeat the experience.

YOU ASK, Mr. Editor, p. 1176, "Do you think there is any real difference between boiling the splints in the hot wax and covering them over with a thick film of wax as described by Mr. Atwater?" No, indeed; I think the Atwater plan might be the better, if thoroughly done I have been wondering whether it might not be just possible that one reason the bees gnawed Mr. Atwater's foundation was because the end of the splint was some distance above the bottom-bar.

W. K. MORRISON, your levulose-dextrose business, page 1205, is interesting. Now when I've had coarsely grained clover honey I've drained off the liquid part, leaving apparently dry sugar. Is the liquid drained off mostly or entirely levulose? If so, we might so control the granulating as to get all the levulose out. [The drainings are pure levulose and water. If held at the right temperature the levulose leaves the dextrose as a liquid. The dry sugar is pure dextrose. In time there may be a demand for this levulose, as it is undoubtedly a medicine.—W. K. M.]

M. H. MENDLESON, you're perhaps the first Californian who has mentioned getting a crop of phacelia honey, although I've implored some of you to tell us about it. It is a native of California, introduced from there into Germany, and much has been said in German journals about it; but your brief mention of a carload of honey from it, p. 1203, comprises a large part of our literature on the subject. What's the honey like? What is the value of phacelia as forage for cattle? Was your honey got from wild or cultivated plants? Please unlock your knowledge-box.

POSTAL SAVINGS BANKS will be a great convenience, and entirely safe, splendid for temporary deposit; but other savings banks will still be needed, for two per cent is all that is proposed the postal shall pay, and it is right that money should earn more if it can do so safely. There is considerable discussion just now about having laws that will make savings banks as safe as government bonds. Indeed, Oklahoma already has such a law, and you can send money there by mail and get 4 per cent. That's about as much as you can get from banks anywhere. In this locality, 3 per cent is the rule.

WM. W. CASE says, p. 1199, that the larva of the bee-moth makes its start in cells of pollen in sections, and in travel-stain. He might add that the body of a dead bee also makes a good starting-point. But with Italians or good hybrids, do worms trouble sections? For years I haven't fumigated a section, although, before Italian blood predominated, all sections were fumigated twice. [We find it necessary to fumigate some lots of sections that are sent to us. We presume it is because the producers of them have the bee-moth in their vicinity. Come to think about it, we do not have to fumigate combs from our yards as we did in years gone by.—ED.]

"THESE OLD QUEENS are always readily accepted anywhere," page 1204. That sounds as if it meant that an old queen would be more readily

accepted than a younger one. If Mr. Beuhne really means it so, I will believe it, although I have always supposed it was the other way. [We feel sure that Mr. Beuhne meant by "these old queens" those that were at least three years old. The idea, as we gathered it, was that they must be so old that the young queen would consider that they had about outlived their usefulness. Perhaps the bees take the same notion, and hence they tolerate them more freely in a strange colony than they would a laying queen less than a year old.—Ed.]

Uniting, in this locality, is done mostly after this fashion: One colony (preferably queenless) is set over on the other, on the stand of the under hive, a sheet of newspaper between the two. The bees will eat a hole through the paper, and slowly unite without fighting. The short imprisonment over the paper helps to prevent any returning to the old stand. A few days later, extra frames are removed and only one story is left. [You have hybrid bees, and it is probable that it is not advisable to let them get together immediately; hence the use of a sheet of paper to keep them apart a day or two. But with the ordinary pure Italians we never find it necessary to use any thing.—Ed.]

J. E. Crane, p. 1121, questions my estimate of 5 lbs. of comb to contain 100 lbs. of honey. Friend Crane, I quoted that from memory, as one of the many things I had learned from the first volume of the *American Bee Journal*, year 1861. Upon reference, however, I find that memory tricked me, for on page 282 I find: "It takes about ½ lb. of comb to hold 15 lbs. of honey." Also: "One pound of honey contains about 20 cubic inches;" and I got the figures mixed into "One pound of comb for 20 pounds of honey." Half a pound of comb to 15 of honey makes 3⅓ pounds of comb to 100 pounds of honey, which is not so very far away from your estimate of 4 pounds. Thanks for correction.

Albert I. Mills asks whether foul-broody honey is fit to eat, page 1208, and is told that the germs are not injurious to a human being. I suspect that he, like a good many others, is not so much interested as to its wholesomeness, but wants to know about its cleanliness. I think there prevails more or less the idea that any thing connected with such a filthy disease must be utterly unfit for human food. A larva dead with foul brood is certainly a loathsome object. Any one who has smelled it would gag at the thought of having it mixed in his food. But it does not follow that there is any thing filthy about the germs themselves. They are merely tiny plants, perhaps daintily neat, which, growing in a larva, cause the death of that larva, and then the larva putrefies and becomes offensive. It's the dead larva that's objectionable, not the germs themselves.

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THE COLOR OF HEARTSEASE HONEY.

My clover crop was 25,000 lbs.; heartsease and fall crop not off. I think Dr. Miller mistaken as to color of heartsease honey, as it is lighter than buckwheat instead of white, as he states. D. E. Lhommedieu.

Colo, Iowa, Sept. 14.

# Editorial

By E. R. Root.

HONEY MARKET MORE STABLE; SHIPPING COMB HONEY IN COLD WEATHER.

There is not much new to report in regard to the honey market except that it seems to be more and more stable. It is to be hoped that most of the stock will be unloaded before the holidays; at least, the carload shipments should not be on the rail after the cold freezing weather sets in; small lots should be in the hands of the dealer. Honey will stand considerable cold for a short time, but it should not be subjected to it too long.

SHALLOW VERSUS DEEP EXTRACTING-SUPERS.

Mr. Scholl presents elsewhere some good arguments in favor of a shallow frame for extracting purposes. We have been experimenting along the same line during the past summer. At our south yard we produced several thousand pounds of honey in shallow frames. These shallow supers are just right to put on colonies of moderate strength, and they are just right to give room *gradually* on the tiering-up plan. To give the full standard-depth super at one time is too big a jump at once, and, moreover, it is awful heavy to handle when full of honey. We say "awful," because no other word seems to describe fitly one's feelings when he is lifting these heavy loads, especially if he keeps it up all day. The tendency is more and more toward shallow supers for extracting, and we believe there is good reason for it.

HONEY-KNIVES WITH STRAIGHT HANDLES VERSUS THOSE WITH THE OFFSET HANDLES.

Elsewhere in this issue Louis H. Scholl says he prefers and uses a *straight* butcher-knife in preference to a standard uncapping-knife with an offset handle. We desire to inquire whether others have used knives with the handle in the same plane as the blade. If so, please tell us about it.

It sometimes happens that one man will set the pace for a certain style of tool, and all the rest will follow suit, never thinking for a moment that the shape of a tool could be changed to any advantage. Is it possible that a knife with a straight handle is better on plain work, saving strain on the wrist, than one having a handle an inch or more out of the plane of the blade? But the user of the standard knife will say, of course, that we must have the crook in the shank in order to get down into places that can not be reached with a standard butcher-knife. We arise to inquire whether that is absolutely so. Possibly it might transpire that one might be able to use to advantage a straight-handled tool on plain work and another knife, with an offset handle, in places which can not be reached with the straight knife. We should like to have a discussion of this question in these columns. Surely there are many among our readers who have tested both kinds of knives.

SYRUP FOR WINTER FOOD.

In feeding bees for winter we advise granulated-sugar syrup made by mixing two parts of sugar to one of water by measure. We formerly recommended equal parts of each. While this is

just right for stimulating in warm weather, for a winter food it entails too much work on the bees to evaporate out the excess of water. This has a tendency to exhaust the vitality of bees. If the feeding be deferred until quite late, or until the temperature is much of the time down to freezing or below, we would advise the proportion of three parts of sugar to one of water; but in that case we would recommend putting in about one pound of good honey to twenty pounds of syrup to prevent granulation.

But some will ask, "Why not feed honey?" A good article is too expensive, and a cheap honey dear at any price if we consider winter losses. There is no reason in the world why one should not give a cheaper and better feed for winter, and sell the article that the bees produce, at a figure that is twice that of the cost of the syrup. So long as we do not take this thick syrup out of the hive and sell it for honey, we are in no sense defrauding the public.

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### GENERAL PREPARATIONS FOR WINTERING; WHEN TO USE THE CELLAR OR THE OUTDOOR PLAN.

It is now about time when the bees should be fed for winter. A month hence, in most localities, they will need to be in their cellars or winter repositories where the winter is cold enough to be below the freezing-point most of the time. If they are not put into cellars they should be put into double-walled hives or winter cases. Where the winters are very open, and seldom any freezing during an ordinary season, single-walled hives outdoors will usually afford sufficient protection; but even then we advise shielding the apiary from the prevailing winds, and contracting the entrances down to about half, or less than their usual capacity.

But suppose we have had heavy losses outdoors, or suppose, as is more often the case, we feel that we can not afford to buy double-walled hives, and are somewhat doubtful about the efficacy of paper winter cases — how shall we winter indoors? If one has only fifty colonies he may use a compartment of the house cellar providing it is dry and the temperature can be kept so it will not go above 60 nor below 40. If the cellar can be darkened, and fresh air admitted throughout the winter, good results will usually follow. If there be a furnace in the cellar, and the bees are shut off in a room by themselves, the conditions will be good providing the furnace does not make the bee-room *too* warm. A high temperature can be tolerated for a limited time if there be plenty of fresh air from outdoors; but if it is possible to maintain a temperature of 45 or 50, with some ventilation, the results will be much better.

Some advise leaving the bottoms of the hives off entirely; but our experience is strongly in favor of leaving them on. Some have had splendid results using the entrance as in summer, and placing a quilt over the frames, with covers removed. This allows for a certain amount of upward ventilation and the escape of moisture.

One should bear in mind that a small number of colonies in the cellar will do very much better than a large number. The presence of too many bees befouls the air, and is apt to raise the temperature of the cellar too high. Ventilation intelligently practiced will overcome this to a very great extent.

### WHEN TO WINTER OUTDOORS.

As a general thing, where the temperature out doors does not go very much below 20 above zero most of the winter, and remains at zero for only two or three days at a time, much the best results will be secured from outdoor wintering. This is especially true where there are a good many open fly days, when the bees can go out and return to their hives. But at such times there is likely to be considerable loss if there be snow on the ground at the time, as many bees will be chilled, never to return. This flying-out can be obviated to a certain extent by leaning a board up in front of the entrance, to shut out the sunlight, and yet not obstruct free ventilation; but a real bright day will bring out the bees in spite of this storm-door board.

Winter cases may be relied on to do good work providing a good thickness of newspapers, quilts, sacking, or some sort of packing material be interposed between the paper case and the hive itself. One can usually get old sacking by going to the feedstores, and at a very moderate price. This, in connection with what newspapers one may have, will provide a good warm packing around the hives. A fair grade of manila paper or flour-sacking is good for winter cases. But this should be painted with linseed oil before it is folded up into a sort of hood around the sacking. It should then be tied, or, better still, the bottom edges be secured with wooden strips held on with nails.

For outdoor-wintered colonies we recommend about 25 lbs. of sealed stores. It is advisable to allow the bees to make their winter nest in the midst of these stores. For indoor colonies we consider 12 or 15 lbs. sufficient.

But perhaps the reader will ask, "Why not winter indoors, and save this 8 or 10 lbs. per colony of stores?" But those who winter outdoors argue that this extra consumption means more bees in early spring, and therefore a larger harvest for the season, so that it is not clearly proven yet that the extra outdoor consumption is not more than made up by a larger crop of honey during the honey-flow.

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### WHY THE BUYERS AND COMMISSION MEN PREFER SQUARE CANS TO BARRELS FOR EXTRACTED HONEY.

The following letter came from Dr. D. Everett Lyon; and as it touches on this general subject of shipping extracted honey in cans and barrels we thought best to present his letter so we might discuss its contents in this department:

*Mr. Root:*—In your columns you have overlooked a subject which constitutes a gross injustice that is being done the bee-keeper, and I think it about time that we banded together and took some action looking to putting a stop to it.

I have noticed lately that many commission men, and other buyers of honey for bottling, almost insist that the honey-producer shall send his extracted honey in 60-lb. cans for the convenience of the fellow who bottles honey.

Now, this is all right as far as it goes; but I do think the buyer of honey has an awful nerve to advertise these cans for sale at, say, 25 cts. apiece when the honey-producer isn't allowed a cent on the cans, even when he at considerable expense provides nice new ones.

Wouldn't it be fair for the buyer of honey to allow the producer half price on the can, especially when the buyer sells them second hand? What do you think of it?

Rye, N. Y. D. Everett Lyon.

So far as we know, it is the prevailing rule among commission men and honey-buyers to

offer a certain price for extracted honey, that price being based upon the kind of package which is always included at the figure. It is customary to pay half a cent more for honey in 60-lb square cans, two cans to a case, than for honey in barrels, although some dealers say that they would prefer to pay a cent more than have barrels. In basing the price it is understood in each case the cans are to be new, and the barrels new, or as good as new. Honey in second-hand square cans is likely to be shaded somewhat in price. Such cans are often not worth much. After they have been emptied they are usually banged around, are likely to leak, or are more or less soiled or rusty; and, what is more, they must be thoroughly cleaned. Many producers believe that it is "penny wise and pound foolish" to buy up second-hand square cans, even if they can be had as low as 30 cents a case, which means, of course, cans at 15 cents each, case thrown in. The cost of cleaning, inspecting, etc., runs the price up. Then there is the increased hazard of honey leaking from them. They never look as nice as brand-new cans, and the dealer may knock off a quarter or half a cent per pound on honey on arrival.

But what has all this to do with your question? If what we said is true it shows there is a limited demand for second-hand square cans. When they are offered, the very best of them, at 30 cents, when brand-new ones can be had for 80 cents, or much less in quantities, it is folly to buy cans at 30 cents per case, pay freight on them, wash and clean them, inspect them to see if there are any leaks, sandpaper the rust off the can, and then, on top of all, take the chance of leakage and of the dealer knocking off a quarter of a cent from the price of the honey. With these facts before us you can readily see that a good many don't want them. If that be true, no commission man nor honey-buyer can afford to make any offer on the cans after they are emptied. In the case of the commission man and the average honey-buyer, the honey is resold and reshipped in the same package before it actually reaches the retailer or bottler; therefore it means this: It is only the latter who have any second-hand square cans as a rule, although the commission men are bound to have a few on their hands; but after these empties have been banged around in the warehouse until a sufficient number have accumulated to warrant offering them for sale, the great bulk of them will be a poor lot indeed, and we have heard commission men say that, as city rents are now, it does not pay to store them.

But now suppose Mr. Honeybuyer does store them, and he offers them at 30 cents a case. After he has shipped them he is quite likely to have complaints on the ground that they were *worse* than second-hand—good for nothing. The whole point hinges right here: If the buyer or commission men could absolutely *know* that the cans would come in good order, and if he could know that he could sell them again without storing, he could afford to offer an allowance, say half a cent a pound, on the price before the honey is actually shipped; but when he buys of Tom, Dick, and Harry, how is he going to know that the cans will arrive in any such good condition? As a matter of business and common honesty he had better make no promises.

So far we have not taken in the whole scope of your letter. You complain that Mr. A. buys your honey in square cans at a certain figure; then he insists that the honey shall come in square cans, as he will not have it in barrels. Then he turns around and offers to sell these cans for 25 cents each. This, by the way, is a very high price, and we doubt if he could get it. From a legal point of view Mr. A. has a right to sell these cans for whatever price he pleases. But is there any dealer at the present time who is offering to sell second-hand square cans at 50 cents per case, box thrown in? If there are any such, we have not seen it. But we know of their offering them at 30 cents per case, and this price is very low. We question whether, at this price, it would pay to store them.

Now having presented the arguments against the use of second-hand cans, let us see what may be said on the other side of the question. It is undeniable that a large amount of western honey is to-day sent in cans that have been used before. It is also true that a good part of such honey goes through in good order; but the facts are, the cans holding such honey, though second-hand, are practically as good as new; because in their first use they have not been sent a long distance. Or the cans may have been used for storage, and after a year of such usage would hardly pass for new. These would be just as strong, and practically as good as new for shipment. But after the cans reach the middlemen of the East they are usually dear at any price.

But why not use barrels? They cost less than half the price of square cans. Many and many have been the troubles from barrels leaking, and from honey having an unpleasant odor imparted to it, especially those in which alcohol or whisky has been used. We know of cases where honey shipped in a whisky-barrel took on very strongly the flavor of whisky. We have also known of the alcoholic flavor being imparted in like manner from alcohol-barrels. But that is not all. Not a small percentage of the honey soaks into the wood, and is lost. But some one may say that if the barrels are paraffined or waxed inside there will be no bad flavor imparted and no absorption of the honey by the wood. Y-e-s, and no. Some whisky-barrels will transmit the odor through the paraffine.

But another objection to barrels is the fact that the dealer can not reship from them in small quantities. A fifty-gallon barrel of honey weighs approximately 600 lbs. or 550 lbs. without the barrel. It would take a little more than four cases of honey put in square cans to equal the same amount. But the consumer or the grocer will order only a small quantity at a time. If the honey be in barrels the dealer must draw off in some small package. If the honey is in square cans he can break up the shipment without messing, and in the end he has saved time and money. He pays the producer half a cent more per pound for the honey because it is in tins, and he can now parcel out the entire shipment in small lots without any messing or waste of time.

Now, it may appear from all this that we are working for the commission man and buyer in general. We are only stating the facts as we know them. As it is an important subject, we invite discussion from both producer and dealer.

# CONVERSATIONS WITH DOOLITTLE

OUTDOOR WINTERING.

"I must winter my colonies out of doors this year, as it is impossible to do otherwise. Will not a slight protection to the hives enable me to do this?"

"A slight protection may be all right, and possibly best for Illinois, Indiana, Ohio, or Pennsylvania; but in this colder climate of Central New York the heat of the bees alone must be depended upon for warmth; and any plan of outdoor wintering which we may adopt must conserve the heat as much as possible. The place is sheltered partially or wholly by woods, which will allow the sun to shine in, though keeping off the prevailing winds."

"I have a place where I can put the bees for winter where there are woods on the west and south side, so that no wind will touch them except from the north or northwest."

"Such a place as that will be much better than most bee-keepers have, for this will allow the bees to fly, many times, when they ordinarily could not; for, more often than otherwise, when it warms up enough during winter so the bees can fly, a strong south or southwest wind prevents, as the wind nearly always blows from those directions every time the mercury rises to 40 or 60 degrees during December, January, February, or March."

"How much packing would you use?"

"When I wintered bees out on their summer stands during the '70's and '80's I did a lot of experimenting to find out just how thick the packing should be to give the best results; and the conclusion I arrived at when using chaff or sawdust was that five inches was the nearest right. The bees were entirely surrounded, except at the entrance, with this chaff."

"I can get dry sawdust, cut from kiln-dried lumber, and very fine. How would that do for packing?"

"It does very well, but I think it is a little more likely to get damp and soggy during winter than the chaff. I have used sawdust for years, side by side with the chaff; but my experience was in favor of dry timothy chaff, as we used to have much of that kind of chaff at that time when nearly every farmer raised his own grass seed."

"But that can not be obtained now. Some tell me that where a double-walled hive is used, a *dead-air* space between the two walls is better than a space filled with either chaff or sawdust. What do you think of such a claim as that?"

"My experience has been that the bees did best when the packing was used. In my later outdoor wintering I used wheat straw for packing double-walled hives, and I found this far better than an empty space, and quite a little better than either timothy chaff or sawdust. Those who argue for no packing tell us that a dead-air space is preferable to a solid wall for keeping out either heat or cold; and that when we pack a dead-air space with either chaff or sawdust we make, in a measure, a solid wall of it. Now, by using the coarse wheat straw for packing we cut up, so to speak, that solid wall into hundreds and perhaps thousands of little dead-air spaces, as each straw is a dead-air space of itself. And we not only have these hundreds of dead-air spaces, but the spaces surrounding and between the straws are so shaped that all moisture, which always accumulates more or less between the walls of a hive during winter, passes off into the open, and thus our colony of bees is not only very much helped about retaining its warmth, but they are kept dry and comfortable. This was the way I wintered all of my colonies which were left outdoors during the later '80's and early '90's. Since that time I have favored cellar wintering, not only because of the better results but for the great saving in stores."

"Did you entirely surround the colonies with this straw except the entrance?"

"Yes."

"How did you fix the entrances?"

"By making a flue, runway, or bridge from the outside to the interior, about 5 inches wide by ½ inch deep."

"Did you have any trouble about the bees coming out on bright sunshiny days during March or earlier, when the air outside was too cold for them to fly, after they left the warm hive, so that many would get lost on the snow upon taking wing?"

"Yes, to a certain extent; but bees are not enticed out of double-walled straw-packed hives to nearly so great an extent as they are from single-walled hives. The trouble can be pretty much done away with by leaning a wide board up in front of the entrance, standing the lower part on the alighting-board out four or five inches from the entrance, and allowing the upper end to rest against the front of the hive."

"But this would have to be removed every time there comes a warm day so the bees could fly."

"Not necessarily. It can be overcome by cutting out from the bottom of this board a piece the size of the runway, which goes from the entrance to the interior of the hive."

"But will not this allow the sunlight to enter the hive?"

"Not the direct rays of the sun, as they strike this board and are thus kept trom coming near the entrance of the hive. When the bees come out at the entrance they are in the shade till they pass over the space made by this leaning board; and this space being as cool, or nearly so, as the outside air, they will turn and run back into the hive unless the air outside is warm enough for flying in safety, except, perhaps, a few bees that are ready to die of old age, or when the bees are wintering so poorly from some cause that they must get out to empty themselves or soil the combs and the inside of the hive. There is more in this vestibule than some imagine. Suppose we should leave the doors of our houses open all winter, as most of the entrances of beehives are left, I think we should have hard work to keep warm in spite of our warm fires. We not only close the doors, but most of us have a storm-door over the outside door, that but little cold may get in when the inside door is opened. When a hive of bees is completely surrounded on all sides with several inches of dry dead-air spaces, and a vestibule over the entrance, each

colony is protected to the extent of making each hive into a little cellar by itself as nearly as possible.

Borodino, N. Y.

# GLEANINGS FROM OUR EXCHANGES

By W. K. Morrison

### TROUBLE OVER A BEE-TREE.

The honey crop of Indiana must be very short this year or there must be a tremendous demand for the sweet of the gods. Any way, Orlando Norris, of Sullivan, Indiana, got shot almost to death in defending a bee-tree on his father's farm. Andy Price and two other men are in jail in consequence. They went in the night time to collect the honey, and succeeded in cutting down the tree. This awoke the farmer and his sons. In the altercation which ensued, one of the sons, whose name is given above, got shot in the side. Men will do almost any thing to get honey—in Indiana. A similar case occurred in Ohio this fall. One man got killed.

### THE RIGHT SORT OF MAN.

In a recent issue of the *American Grocer* the editor had the following to say of Dr. Wiley:

That sturdy chemist who has been at the head of the Chemical Division of the Department of Agriculture for over twenty-five years is a bachelor with the right sort of stuff in him. He has been fought in every way. Men have tried to neutralize his work, and bands of men and great corporate interests have tried to defeat his plans to give the people a national pure-food law that would be effective and preserve the integrity of the food supply. He has been abused, lied about, ridiculed, but he never loses his temper, keeps good-natured, and quietly keeps at work as the whisky-blenders have recently learned. The President may question his policy; the Secretary of Agriculture negative his rulings; commissions of experts may be appointed to test decisions; the press may praise or howl for removal; but defeat is a word Wiley hasn't learned to spell. The first International Congress for the Repression of Adulteration of Alimentary and Pharmaceutical Products at Geneva, this year, made him its honorary president, as he was detained from attendance. If Wiley had become discouraged, resigned, and given up the fight, pure-food legislation would have been held back for many years.

### CAUCASIANS AT NEBRASKA FAIR.

The reporter for *Wallace's Farmer* at the Nebraska State Fair is a wide-awake man. He states:

The bee and honey exhibit is mostly made by dealers. Premiums are not large enough to attract many producers. A feature of this department was a lecture twice daily given, by Mr. F. G. O'Dell, on bees and bee-keeping. These lectures were delivered from a big hive in which was a swarm of bees, said to be "stingless." The stingless quality, however, was seriously questioned when the lecturer got somewhat stung up one day.

Nothing could be further from the truth than the statement that Caucasian bees are stingless, for they are well furnished in that respect—as well as any—and know how to use their stings when circumstances permit. Any one purchasing Caucasians for their stingless qualities is getting a gold brick. I remember when Cyprians were reputed to be quite mild in temper, and some of us took the bait—to our sorrow.

### THE LOCUST BORER VS. BEE-KEEPERS.

Some one can render a priceless service to the bee-keepers of the United States by finding an enemy to the insect which bores holes in the common black locust. According to all literature of the forestry experts employed by Uncle Sam this is the only drawback to planting the black locust on a grand scale. Many farmers would plant it quite extensively if it were not for the borer. This is particularly true of Ohio, Indiana, Illinois, Missouri, and Iowa; but a locust-grove is growing well near Denver, and there are many in Kansas. It is a splendid honey-bearer. It can not be termed a water-white honey, but the aroma or bouquet is fine. Though a rapid grower the wood is hard and very durable, and useful for many purposes. There ought to be a remedy for this trouble. We could, as a nation, easily afford $25,000 to the man who can find a remedy. The honey-locust seems to be immune or nearly so.

### WATER IN HONEY; A FEW STRONG TALKING POINTS ON HONEY AS A FOOD.

Honey is one of the dryest of human foods, as it usually has less than 20 per cent of water. Beefsteak, of the most expensive kind, contains 65 per cent, and even then there is some bone to be reckoned with. Some of our most expensive fruits and vegetables are nearly all water, 95 per cent and some even more! This is a point that bee-keepers can harp on a good deal. Anybody can easily see that, between a pound of steak at 18 cents and a pound of honey at 18 cents, the advantage lies with the honey. Moreover, honey will keep indefinitely, whereas beefsteak deteriorates in a few hours. Actually, honey improves with age. Add on to this the fact that honey is one of the very few predigested foods. In the United States to-day milk is the only food which compares favorably with honey, both as to quality and price. In some ways milk is far inferior to honey.

### THE FRENCH TARIFF ON HONEY.

The French Tariff Commission has decided that $6.00 per 220 lbs. will be the maximum tariff on honey, and $4.00 per 220 lbs. the minimum. This is far short of what the French bee-keepers desired; but I imagine that the Chamber of Deputies will ratify the views of the Commission.

In this connection it has been noted that the strict suppression of all honey frauds will do the bee-keepers more good than a high tariff. The government chemists will aid the bee-keepers in suppressing spurious honey. There are now laboratories belonging to the pure-food department at Paris, Amiens, Arras, Auxerre, Chartres, Bordeaux, Clermont-Ferrand, Dijon, Lille, Lyon, Montpellier, Nancy, Port-Vendres, Toulon, Havre, Poitiers, Reims, Rennes, and Tours. The prices of honey are no higher in France than in England, where there is no tariff, so that it is very likely that the pure-food officials can do the bee-keepers more good than the tariff commission.

### FOUL BROOD IN INDIANA.

The Indiana State Association of Bee-keepers is making a vigorous effort to have their State fall in line with the progressive bee-keeping states, and for this purpose have prepared a foul-brood bill which they will ask the legislature to frame into law. This law is much required in Indiana,

and every bee-keeper who expects to stay in the business should lend a helping hand. The committee having the matter in charge is composed of excellent timber; namely, Jay Smith, of Vincennes; George Demuth, of Peru, and Walter S. Pouder, of Indianapolis. These men can not do it all themselves; they must have public opinion behind them, and practical assistance when necessary. A certain amount of public spirit is required to make laws worth any thing, and there are plenty of good bee-keepers in Indiana who can be of service, if they will. They can have this law if they insist on it. Don't hang back and let some one else do all the work. Politicians require prodding or nothing is done. Sit down and write your representatives and senators that you expect them to vote for the bill appointing a State Inspector of Apiaries. Your letter will count for a good deal.

### IRRIGATION IN PORTO RICO.

It has been decided by the insular government to spend $3,000,000 on an irrigation project somewhat similar to those now being constructed in the United States. Porto Rico, though a small island (a little less than Jamaica), has a peculiar rainfall distribution. On the eastern end there is an enormous rainfall — 120 to 150 inches per annum — whereas on the south aud southwest the fall is so light as to render farming precarious. Irrigation will give the sugar industry very great encouragement; but whether that is a good thing or not depends on the point of view. It will certainly help the landlord class and the owners of sugar-mills; but industries like bee-keeping will not be helped — quite probably the contrary. It will create an army of poorly paid laborers who will live in barracks a hand-to-mouth existence, working to help the sugar trust. The life they lead demoralizes them. On the other hand, a band of small fruit, vegetable, and coffee farmers would build up the community. Bee-keeping in Cuba has been curtailed by the extension of sugar-cane farming. This is not so beneficial as might be thought.

### HANDBOOK OF SOUTH CAROLINA.

Through the courtesy of Mr. E. J. Watson, Commissioner (Columbia), I have been favored with a copy of the *Handbook of South Carolina.* It is a large book of over 600 closely printed pages, containing many good illustrations. It forms a complete description of the Palmetto State. If any of the northern readers of GLEANINGS have serious intentions of moving to a milder climate I would earnestly recommend them to get a copy of this book. No price is attached, but doubtless the charge is nominal. As a field for skilled gardeners, farmers, and fruit-growers, South Carolina is not surpassed by any country in the world. On the coast there are old groves of oranges, trees which sometimes fruit, while up near the mountains splendid apples, grapes, and peaches are grown. Truck-growing is an immense industry along the coast. The greatest yield of corn ever known in this country was obtained in South Carolina, and its cotton is famous. It has not figured very largely as a bee-country, nevertheless much of it is well adapted, and Mr. Watson writes that white clover is being scattered all over the upper portion of the State by agents of the United States Department of Agriculture. The immense cotton-mills, fertilizer-factories, lumber-mills, etc., furnish a splendid market. Education is well attended to, and railroads completely intersect the whole land.

### APICULTURE IN SPAIN.

The editor of *Gaceta Apicola de Espana*, in the September issue, laments the condition of bee culture in Spain in very pessimistic terms. He says that, on many occasions, he has referred to the superior position of bee-keeping in Cuba, where the conditions are no better than in Spain. But he says the style of bee-keeping in Cuba is North American, not Spanish, thanks to the easy communication with that country. (The Spaniards usually term our country Norte Amerique.) In Cuba the predominating flower is the campanilla, which produces a very light rich honey, much sought after by foreign merchants who export it to Europe. He claims the honey of romero (rosemary), which is common in Spain, would compete with the campanilla if given an opportunity; but the amount of honey produced by the movable-comb system in Spain is relatively very small; whereas in Cuba movable combs are the whole show. This accounts for Cuban superiority, both as to quality and quantity.

The editor is correct. Spain ought to be a great honey country. It has the right kind of flora, and excellent climate, and proximity to great honey markets. In fact, there is a great opportunity right now for the Spaniards to show what they can do if they will only follow the lead of the Cubans and import American bee-supplies by the carload. Will they rise to the opportunity and grasp it? They can very speedily overtake and surpass all European or West Indian rivals.

### CANE SUGAR VS. BEET.

Dr. Miller wants to know more about sugar. It is a difficult matter to explain this to the public, but I will try. Long ago Huber found out that raw sugar, when fed to bees that were engaged in comb-building, produced more beeswax than a high-grade or refined sugar. In fact, they made more from raw sugar than they did from honey. This experiment was verified by Dumas and Milne-Edwards, two very celebrated French naturalists who used the most careful tests in the work. Others have tried this with the same results. You can not very well try this experiment with beet sugar. Raw beet-root sugar is not very nice. In England, where beet sugar is very common, it has been often noted that bees do not do so well when fed on it. Remember, too, the beet sugar is a little cheaper and easier to get. The Germans get around it somewhat by inverting the beet sugar. The syrups they make are very nice indeed, and are sold all ready for the bees. They are sometimes made with grape sugar added. This is to make the syrup resemble honey as far as possible In this case an ounce of practice is worth a pound of theory. Bees are very fond of and do well on the juice of sugar-cane. It encourages wax secretion. The best cane sugar for bees is the simple open-kettle brown sugar made in Porto Rico. The advent of Americans

into the islands has nearly put a stop to its manufacture. It is made in the same way maple sugar is, and of course retains the natural phosphates, salts, and phosphoric acid present in the cane-plant. The cane sugar, with large yellow crystals, is next best. Fruit-canners also prefer it because it has a sweet honey-like flavor.

It is not so easy to get such sugars, because the sugar trust people want to pocket about a cent a pound made in refining them into white sugars. Raw sugars pay a much lower duty than refined, and it is in manipulating this difference that the trust has made millions in profits with no equivalent benefit to the consumers. Some of these raw sugars would suit us better than the refined; but the trust wants them, and controls the situation. The trust does not care to handle imported *refined* sugar—that is, sugar above No. 16 Dutch standard, and very little is imported.

Our most highly refined sugars, even when made from cane, are objectionable, because they contain traces of very powerful poisonous chemicals used in preparing them. These are not necessary, but they are cheaper, and easier to use.

# BEE-KEEPING IN THE SOUTHWEST

By Louis Scholl

Cotton honey, when gathered from that source alone, and from rank growing, thrifty plants, is nearly if not quite as white as white-clover honey. This year we have had an abundance of cotton honey, and several other bee-keepers who know will confirm the above. When first gathered, cotton honey has a rather strong flavor of the plant itself; but as it grows older this is lost.

"Waxcraft" is a good book on wax. Now, why not have one on *honey?* It is interesting to note the many different uses made of wax, especially for technical purposes, both in practical recipes and in medicines. It would, perhaps, be more surprising to note the extent to which honey is used in these things. I know honey is much used in medicine, etc. and it seems to me; a book of this kind would be welcomed.

A common long butcher-knife, well sharpened, and kept free from the gumming of honey, by frequently washing in *cold* water while uncapping, is the knife I have preferred for several years, after using several of all the different uncapping-knives on the market. Since the cutting is always downward, the stroke is more direct, as there is no bend in the handle. The knife reaches clear across my shallow combs, and it is much more easily wielded.

We're doing the fairs with our exhibits. It's a good advertising scheme, both for the exhibitor and the fairs. We've been very welcome there; and to encourage these exhibits, liberal premiums are provided. For these reasons good exhibits can be made, for otherwise it is expensive to get up creditable exhibits and go long distances to fairs. We enjoy it, like Mr. Hutchinson; and if one is clever enough to have every thing arranged properly it is not so difficult a matter to make the moves. More should try it, and advertise our industry.

Not much has been said in print about "one of the signs of queenlessness," p. 1048, and I am in doubt whether there is very much in it. But, of course, localities differ. I've often studied over the matter right at one of these colonies, with the combs in front of me. I remember often remarking in the midst of such a quandary that "I would gladly give a dollar to know for certain whether or not there is a virgin queen in that hive." There were all kinds of signs pointing to one or the other. Sometimes the bees will keep the cells in the center of the brood-chamber so nicely polished for weeks that one will expect a laying queen to take possession at once; and, again, I have seen those cells filled with honey throughout the brood-chamber with a virgin in the hive several days, and, several times, even after the queen had begun laying in a few empty cells scattered right among those with honey.

### NARROW VS. WIDE TOP-BARS

The shallow frame that has given me the best satisfaction, and which has been tried in my yards for ten years, is just like the regular 5⅜ Hoffman self-spacing frame, with the exception of the top-bar. My top-bar is only ⅞ inch wide, but ½ inch thick. It is stronger than the wide thinner ones on the market, and thus gives more free communication between frames from super to super. These spaces are very narrow in the supers as now made, and act too much like queen or "bee" excluders. This is detrimental, especially if the frames are used in brood-chambers. No groove for foundation is needed, as the foundation is fastened with melted wax much more easily. When the frame is new, the groove is in the way or else the sheet must be carefully put into it; but when the frame is refilled again and again the groove is filled with wax any way. Why are they not made plain regularly, Mr. Editor?

### BULK COMB HONEY IS MORE PROFITABLE IN THE SOUTH THAN SECTION HONEY.

Of all the trouble I had this season it was the fixing-up for the production, then the taking off, the scraping, labeling, grading, casing, crating, and shipping of a few hundred pounds of *section honey*. It was the most expensive honey we produced, and it gave the least returns for the investment. The good old "chunk" honey, as many call it, beats it all to pieces here in the South. It is more easily produced, easier taken off, packed, and shipped, and more readily marketed at good remunerative prices.

We not only save the great expense of buying sections and shipping-cases every year, but the bees make *more honey* in our frames than in sections; and we save high freight charges and the danger from smash-ups here in this warm climate. Bulk comb honey in cans goes at fourth-class freight rates, the same as extracted honey, while section honey goes at double first. Then it is much easier to prepare and pack a crop of the bulk comb honey than of sections; and as there

is the greatest demand for the former, it means more dollars in our pockets to produce that kind.

SHALLOW VS. DEEP SUPERS.

Another year of extensive manipulations with both deep and shallow supers convinces me still more that more satisfactory results can be obtained by using shallow supers for extracted honey as well as for comb honey. They have more advantages than disadvantages. It is true that more supers and frames must be nailed up for a given quantity of honey secured, and the first cost is a little greater. It may be well to keep in mind, however, that, as lumber gets scarcer, narrow lumber may be less expensive for the shallow supers; and as the shallow frames are made with a much lighter top-bar the difference in the amount of material between two shallow frames and one deep one is not very great. What difference there is between this and the nailing-up of the frames is soon offset by the fact that no wiring is necessary with the shallow ones; and, further, that thin super foundation is used in them, thus making quite a saving at the very start in this respect. Such light foundation goes much further; and where the frames have to be refilled at frequent intervals the difference in expense soon counts up.

There is only one other argument generally brought out by the deep-frame advocates in favor of the deep kind, and that is the question of uncapping. Even if I should concede their claims I have found so many other points in favor of the shallow frames that it puts the others much in the shade. This is speaking of *my* manipulations in *my* localities, of course. But since these localities, of which there are a dozen, vary very much, I am sure the same differences would hold in apiaries still further away.

There is an advantage in giving the bees room by tiering up with shallow supers, and the gain here is again enough to pay for the extra trouble and expense, as just a little more surplus that is obtained in this way counts up in a whole crop.

The main gain comes in taking off the crop. What a slow job to have an empty box on a wheelbarrow into which each comb is put separately after brushing off the bees, irritating them and starting robbing in a wholesale manner! We have tried this. It was our way *before we knew better*. Now we have this to do only when a queenless colony has been set on top of a strong one and the deep combs have become filled with honey during the rush; and even those who have assisted me at various times have carefully left these to the very last to be taken off.

No brush is ever needed in our apiaries when removing honey. A good smoker and a hive-tool are all. The combs being shallow the bees can be sent scampering down as soon as the cover is raised. Half a dozen colonies are opened in quick succession, smoke driving down most of the bees, when the full supers are jerked off, set on end on the ground, when the rest of the bees hurry off. In half an hour a thousand pounds of honey is ready to haul in. The few bees that cluster on some of the supers are jounced off over the wheelbarrow handles.

So far I've beaten the deep-frame advocates; but now it comes to the uncapping. The knife reaches over the entire width of the comb, and—you know the rest! If the deep combs were *always* as evenly filled as the shallow ones, fewer combs would need to be handled; but the lower part of the combs is too often more difficult to uncap, so the difference in uncapping is not so great after all. Besides, two of my 5⅜ combs hold more honey than one L.

# GENERAL CORRESPONDENCE

## SELLING HONEY.

### Some Experience in Selling Honey from House to House, and to Grocers; the Requisites of a Good Salesman.

BY WESLEY FOSTER.

There have been a good many articles in the bee-journals on the subject of selling honey. These articles have treated the matter in two ways: 1, house-to house selling; 2, introducing the product to the people through grocers. Calling from house to house brings one in closer touch with the consumer, and the sales will be greater in number for the territory covered; but in a large city such a plan would be impossible if it were desired to cover the entire territory. The ideal way would be to go from house to house with a sample of both comb and extracted honey, and let the people taste the extracted, and sell them as much as possible right there, informing them that they can get more of the same quality, at the same price, of their grocer, if they ask for it. Some of the best literature concerning honey should be left. I used this plan when I lived in a small place, and it succeeded.

For several years I have sold to the grocers only, except our near neighbors, who come to our house for their honey. The difficulty with selling through groceries is in getting the grocer to display the honey in a prominent place and push it forward on his rounds taking orders. This difficulty can be overcome if the honey-salesman brings the need for display, reading-cards, price cards, etc., to the attention of the grocer and furnishes him with the material for this. The seller of the honey can afford to put an observatory hive in along with the honey display if a good window is placed at the disposal of the salesman. A display of this kind can be left for a week or two, and then moved to some other store. If enough business is done to warrant the expense, several outfits in use at once are better.

Bee demonstrations and exhibits at fairs are popular because the details of bee-keeping are now understood less than those of any other industry.

I have sold honey more or less since I was twelve years of age. My first selling was done after my father had harvested a fair crop of comb and extracted honey from basswood and white clover. We were then living in Iowa. I carried four or five sections in a peach-basket, cali-

ing from house to house, showing my product (or, rather, the bees'). My brother was helping too, he taking one side of the street and I the other. When we got to the end of the street we would compare notes and hold a miniature salesman's convention. Father used few separators at the time, and many of the sections were very fat. My price was one cent an ounce, and each section was weighed and the weight marked on the wood Often my cakes of honey weighed 20 ounces. If I sold two dollars' worth in an afternoon I was satisfied.

When I was fourteen my father moved his family to Colorado, and after that I used a wagon for my trips and went further from home. I sold honey, mostly extracted, in several coal-camps. I had a pair of scales in the wagon, and weighed out the honey in the customer's own package. Visits were made twice a month; and on one trip, in a town of about twenty-five houses, I sold honey at every house but one, and there was no one at home there. The people in this little town would eat from two to four hundred pounds of my honey every month; and one boarding-house used nearly a hundred pounds every thirty days. My price was ten cents per pound, and it cost me about seven, so my percentage of profit was good. I believe honey-selling may be made to compare favorably with the selling of goods in other lines, and salesmen as a rule are better paid than office workers.

One forenoon when out with some of my own honey I sold fifty dollars' worth—fully ten per cent above what I could have secured in any other way—and saved two or three per cent more on freight.

Any man who knows something about honey, bees, and the flowers that bees work on, can put up a convincing talk to a grocer. Convince him that you know how to take care of bees and how to raise honey, and usually his foolish fears of adulteration will vanish before your bee-and-honey talk. I get their confidence by answering as best I can all the questions they ask. Then I enlarge on the wisdom of handling the best honey, and also on the fact that my prices are so they can make a good profit on the article. Do not try to get grocers to handle any thing on less than 20 per cent. If you have a line of comb and extracted honey, try to let the profit on some run up to 30 per cent, and then the grocer will not hesitate to handle some for 20 per cent. Honey is not as yet a necessity, and luxuries usually bring the largest profits.

The best sale I have made so far was about a month ago. I called on The Blank Grocery Co. and told them I had new comb honey, and judged that they could use at least a case a week. Mr. Blank took me back and showed me a pile of seven or eight supers full of nice comb honey, but last year's product, and all candied. I frankly told him that he had that honey on hand late in the season, and that the best thing to do was to render it and have it put in bottles for his trade. In a short time I had sold him two cases of new honey, and took the old to render for him at a cash price to pay for my time. One week after finishing the rendering of his honey I sold him 100 cases of new honey — fully fifteen per cent above what I could have sold unless I consigned it, and it is a question whether I would have obtained anywhere near the price I received.

In every town of any size one will find little stores where it is hard to sell honey, as they carry a very small stock. I find that these are good places to sell honey, though I often have to leave the honey and let the grocer sell it and pay afterward. Honey will sell in any place if displayed in a prominent place, and in all these consignment cases I require the dealer to make a special effort to sell, and give him 25 per cent, so it is a virtual guarantee of that much, or I take back the goods. I have never been asked to take back any honey yet. Sometimes I am able to do even more for the storekeeper, such as fixing up a window display of honey and beeswax, etc., for him. It is more to my interest that the grocer should succeed and make money by selling my honey than that he be overstocked. I try to get into the confidence of the grocer; and if I am his true friend he will often tell me his real trials, and I must understand his business well enough to offer some suggestion that will often help him out. It will at least show him that he has my genuine sympathy. Under such circumstances a selling-trip will be nothing but a round of pleasant calls. This is real salesmanship, which is easy after the first plowing is done.

Salesmanship is diplomacy, for a man must be persuaded to part with his money, which is a most painful procedure with most of us. The wire to pull is the mention of the profit he will receive in addition to his first cost.

Here is a sample talk. I never gave one just like this, perhaps, although the substance of it has passed over the counter several times before my honey followed suit:

"Good morning, Mr. George. My name is Foster. I live down on Arapahoe St., across from Lincoln School. I am a bee-keeper, and raise honey to sell to grocers like you. I never met you personally before, but have known you by sight for some months. May I tell you about the way I put up my honey, and the generous profit the grocers are making who handle it?"

Generally I am encouraged to go on. "Now, I have comb honey put up in cases of 24 sections, graded according to the rules." Then I tell him about the rules so he can judge comb honey himself. "My extracted honey is thrown from the combs by centrifugal force, the cappings being removed with a knife made for that purpose. The honey is then heated to 150 to 170, and bottled at about 110. Honey thus put up will not granulate so quickly as when put up cold. My honey, both comb and extracted, is gathered by the bees from alfalfa and also from sweet clover. You can make 20 to 30 per cent on this honey; and as all pure honey will granulate in time, I can replace any that candies, before being sold, with new fresh goods. I see you have a few jars on hand, in which the honey is candied. If *I* had sold you that honey you could call me up and have liquefied honey in its place. If you will take ten dollars' worth of me I'll liquefy what you have on hand, free of charge."

"But," says Mr. George, "I have few calls for honey, and do not care to handle the extracted any more. I can use a case of the comb if you will replace any that candies."

"You have brought out another point. Your

order boy doesn't ask people if they want any nice new honey, does he? Honey is a specialty, and needs to be pushed, and with the profit you make on it you can afford to push it somewhat. You put in several cases of the extracted in tumblers, half-pint jars, and pints; and if you can't sell it I'll take it off your hands."

In seven or eight times out of ten I get an order, large or small. On the second and third trip my sales are very much increased, and the grocers call me up and give me their orders by phone. When I start in with a grocer who is not interested I get him to talk about bees, bumble-bees, and their stinging abilities (this seems to be uppermost in the majority of people's minds), about the flowers bees work on, how queens are raised, and the organization and division of labor in a hive.

I have read most that Burroughs and Mæterlinck have written on the bee, and one can learn from them the popular way of telling about bees. It is invaluable in selling honey. When you have told a lot of bee experiences you will be known as a honey-man and not as a mere salesman.

The two objections most persistently brought up regarding extracted honey are, 1, that bee-keepers feed their bees sugar to get them to make honey, which process causes the honey to candy; 2, most of the honey on the market is mixed with glucose, sugar syrup, or just thinned with water, and neither you nor any one else can tell the genuine from the adulterated.

A restaurent manager fired both of these objections at me. He didn't think that I knew pure honey, and he thought the bees these days didn't get a chance to work on the flowers, for the bee-keeper kept stuffing them with sugar or molasses so they would make a great surplus of "fake honey." He thought we doped the bees with sugar, glucose, and molasses, and then further adulterated and thinned it after taking it from the bees to enhance our profit.

Some men are literally steeped in such ideas; and this man, before I left, mixed some honey half and half with water, and, after tasting it, said that would go with his customers as well as the genuine. He didn't know pure honey, and didn't believe but that his customers would not know the difference between half-and-half honey and the thick well-ripened article.

Fellows of this stamp are shoddy thinkers regarding others, and are not above shoddy practice to their patrons. The better plan to pursue with a customer of this kind is to push the comb honey and let him go elsewhere if he wants adulterated goods or wants to adulterate what he serves on the tables of his restaurant.

Denver, Col.

## HONEY RESOURCES OF NORTHERN MICHIGAN.

### A History of the Conditions Leading up to the Growth of the Wild Red Raspberry; What Constitutes a Raspberry Location?

BY E. D. TOWNSEND.

Northern Michigan is the home of the wild red raspberry, the honey from which is so fast forging its way to the front on account of its beautiful aroma and exquisite flavor. This part of the State is also noted for its broken landscape, with the unlimited variety of soil, its hills, and its creeks and innumerable lakes. The timber also varies almost as much as the landscape. However, the bee-keeper is most interested in the honey-producing flora and in the location in general.

Probably more than half of Northern Michigan was once covered with the white and Norway pine, which has now been nearly all cut off for lumber. During the first dry season after the cutting, fire burns over this stump land, and then two or three years later the willow-herb comes to maturity. There was a time when this produced large quantities of very fine honey; but as the pine is now all cut, or nearly so, the prospect is that the willow-herb in Michigan has had its day. After the willow-herb this pine "cut-over" grows up to blackberry brush, and, later, white clover comes in. This white clover, when covered with snow, so that it does not winter-kill, usually produces a fair amount of very fine honey. The blackberry, on the other hand, never produces honey, for the bees rarely notice it. This district is now being settled and made into farms, and a considerable amount of buckwheat is being sown, which is a very good honey-yielder on the light sandy soil, although it is difficult to find a location where there is enough sown to support a large number of colonies. The little honey that does come from the buckwheat, however, is very welcome. On the lowlands near the creeks, rivers, and lakes, asters, goldenrod, and boneset come during seasons when the rainfall is abundant, and these produce some honey, although many times very sparingly.

There came a day, finally, when the pine timber was so nearly exhausted that the price of lumber soared high, and hard-wood timber became valuable. This was about ten or twelve years ago, and since that time the hard wood of Northern Michigan has been gradually cut off, and *this* cut-over is where the celebrated wild-red-raspberry honey is produced. Such land does not need to be burned over, and some think it is even better when it is not burned over, maintaining that the bushes are not thrifty when fire has run over the ground. It certainly looks reasonable that the bushes should be more thrifty, for the fire burns off much of the rich loam. To produce honey to the best advantage, the plants should be thrifty, for it seems that, if the growth is stunted, no honey is produced; or, in other words, if there is any thing the matter with the plant, the honey is the first to suffer. There is something to say on the other side of the question, however; for if the land is not burned over it will soon grow up to underbrush, which smothers the raspberry much sooner than if it is burned over occasionally. It is a disputed point, therefore, whether it is better to get a smaller crop for a longer number of years or to get a larger crop during fewer yers. This hard-wood land burns over in April, before the leaves start to any extent; for when the leaves are grown the shade is so dense that the sun can not penetrate, and there is not much danger of fire running. When the fire goes over the *pine* cut-over it may run for miles, burning night and day, and it makes a very hot fire which burns the soil badly.

This is not the case on the *hard-wood* timberlands, for there it burns but slowly during the day, and at night nearly goes out, only a few old logs serving to hold the fire until the next morning, so that when the sun is up, and the dew disappears, it starts anew and burns another day. This is continued until there is a shower, when it will be put out; and since it burns so slowly, no very large territory can be covered before it is put out. This means that there is never a location wholly burned over, so most of the bee-keepers have both kinds of pasture—the burned and the unburned.

We have said before that the wild-red-raspberry district is variable, and this must be taken into consideration when selecting a location for bees; for, on account of the pasture not being good in all places, it would be almost impossible to select a location where one could establish a series of outyards without going more than the regular distance. There are some such locations to be found, but they have been occupied for a long while; and now if one wishes to find an unoccupied location he will have to go back quite a distance, and even then he will quite likely find a location suitable for only one yard. He will then have to hunt some other place for the next yard. It should be stated, furthermore, that even these scattering locations are nearly all taken; for whenever there is a good thing there are always several ready to accept it. Take, for instance, the case of the Hutchinson Brothers. Although W. Z. Hutchinson has traveled extensively over the State, they were obliged to accept a location so situated that some of their outyards are eight miles apart. One is often compelled to buy out some one already established, in order to secure a location.

Another point to be considered is that the level or desirable land for farming purposes will soon be cleared and made into farms. This usually happens soon after the timber is cut, so that the raspberry does not have a chance to grow or produce honey. In view of this, one should locate where the land is so rough and poor that it can never be cultivated. The majority of the best raspberry districts are of this latter description, and they will be valuable for the raspberry honey until new timber grows and smothers the bushes.

Mr. S. D. Chapman, of Mancelona, Mich., finds that some of his best raspberry district is where the timber was cut twenty years ago. This particular location must have been burned over several times, for there is a twenty-year-old "chopping" near our Kalkaska County bee-yard which has never been burned over, and it is now covered with timber, some of it 40 ft. high.

Thus we find the raspberry district to be always changing; and when one particular location is not yielding as it should, on account of a failing supply of the nectar-bearing plants, the apiary must be moved to some more desirable point. Of course, this is quite likely to be the case in other locations besides the raspberry, for the honey-producing flora changes with the country, and during this "era of outyards" it should always be borne in mind that it is better to be put to the inconvenience of going some miles to an outyard than to harvest meager crops at home in the midst of a worn-out pasturage.

The wild red raspberry begins to produce honey some time during the first half of June, depending upon the weather. An early spring with favorable weather causes a rapid growth of the foliage, and consequently an early bloom that may reach maturity as early as June 1. During the last few years, however, or, in fact, during the writer's experience in the raspberry district, cold backward springs so retarded the growth that the honey-flow did not start until nearly the middle of June.

Remus, Mich.

[The question naturally arises, can we introduce some plant into Northern Michigan which will supplement the red raspberry? Sweet clover at once suggests itself, but there may be others. Sweet clover would do no harm, and yet it would in time improve the soil. Some of the poor lands of Michigan have been improved by the growth of mammoth clover.—Ed.]

## FERMENTATION OF UNRIPENED HONEY AND ITS CAUSES.

BY EDWIN G. BALDWIN.

*Mr. Root:*—On page 1055 Prof. Cook tells of the unusual fermentation of honey on the hives, owned by a bee-keeper of Southern California. Prof. Cook attributes the condition to a possible excess of moisture in the air, but admits that this is but a guess. In Central Florida we often have it so damp for weeks that all things in the house will mildew and mold if not aired in the sun very often; and yet I have never noticed any fermentation of honey on or off the hives there.

On page 12 of the United States Department of Agriculture, Bulletin 110, Department of Chemistry, Mr. G. A. Browne has this note on changes wrought in nectar by the bees in their working and storing of the crude product:

"Another modification produced in the nectar by the bees is the introduction of a minute quantity of formic acid. This acid is wanting in the pollen and nectar of flowers, and is supposed to be introduced into the honey by the bee just previous to capping the cell. The formic acid thus introduced by the bee is supposed to act as a preservative, and *prevent the honey from fermenting.*"

In the article already referred to by Prof. Cook, the bee-keeper in California says, "The bees die off very rapidly." May not this mortality be a cause and not a result? May not the fermenting be caused by a *lack* of the essential formic acid—a lack caused, perhaps, by a pathological condition in the bees themselves? At least, the coincidence is striking; and as the occurrence is a unique one, it seems to me that perhaps the last word on this phenomenon has not yet been uttered. I should like to hear further concerning this singular state of affairs in Calexico in particular, and of formic acid and fermentation in general.

Trevose, Pa.

[Without knowing any more than has been said in Gleanings, I decidedly agree with Mr. Baldwin. It seems to me the nectar fermented because, for some unknown reason, there were not enough bees on hand to take care of it. Something killed off the bees, and then the thin honey fermented. With plenty of bees on hand, nectar will not ferment.—W. K. M.]

THE LATE E. W. ALEXANDER.

"His life was beautiful, his work enduring, his death triumphant."

## IN MEMORIAM OF E. W. ALEXANDER.

BY REV. D. EVERETT LYON.

On Saturday, Sept. 19, there passed from earth to heaven, in the death of E. W. Alexander, of Delanson, N. Y., not only a prince of bee-keepers but also one of the purest and most sympathetic of men who ever lived. For many months this kind-hearted man was a great sufferer from an abdominal affliction; and when the end came it was to him a welcome release from his untold suffering. The end came not to our brother as a surprise, but was the culmination of his expectation, and the summons found him with his spiritual house in order, ready to receive his well-merited reward.

For a year or more he often expressed to his devoted wife the desire that the writer might officiate at his funeral, and preach the sermon; and when the telegram called me to Delanson for that purpose I felt that it was a sacred duty that could not be ignored.

Leaving home immediately at the close of my Sunday-evening preaching service on Sept. 20 I arrived in Delanson the following morning, and proceeded at once to the house of mourning. Our dear brother had but recently purchased a beautiful little home, and it seemed a strange providence that he at only 63 years of age should so soon be carried from it.

When the hour of the service arrived, a vast throng of people crowded in and about the home to pay a last tribute of respect to one esteemed, and an honor to the community in which he resided. Though a great sufferer in the last few months of his life, yet in death his face seemed singularly peaceful, with just a trace of that genial smile that made every one feel that he was their friend.

I felt it a great honor to be permitted to stand beside his coffin and speak of his many virtues, and refer to his beautiful Christian character. After the service his three sons—Frank, Fred, and Bert—and his devoted son-in-law, acted as pall-bearers, at their father's request, and tenderly carried his remains to the waiting hearse.

A ride of four miles brought us to the beautiful cemetery at Esperance, where his poor tired body was laid at rest to await the resurrection of the just; and as I turned from the grave I felt that the bee-keepers had sustained a great loss in the death of such a friend.

May I be permitted to say a few words of appreciation concerning one who, as a bee-keeper, was a prince among us—the greatest Roman of us all—a very Gamaliel at whose feet we learned so much? Let me speak of him, first, *as a man.*

E. W. Alexander was every inch of him a man. Every thing that was mean and base he spurned with contempt, while every thing high and noble found in him its earnest advocate.

Like Longfellow's blacksmith, he could "look the whole world in the face," so pure and upright was his character.

Singularly sympathetic, he had a kind word for every one, and special sympathy for the man who was down and out.

All the years of valuable experience as a bee-keeper, much of it the result of costly experiment, he freely gave to his fellow bee-keepers, and nothing delighted him better than to see the success of others.

As a bee-keeper remarked to me after the service, "He was the great reference-book for us all." Yet withal he was the most modest of men, and, though deeply touched by Dr. Miller's recent note, that he, as one of the rank and file, saluted him in his triumphant march to receive his crown of rejoicing, he said to his wife, "That was very kind of Dr. Miller, but, really, I don't deserve it."

Second, *as a bee-keeper.* Our friend was a truly great bee-keeper, not so much from the fact that he managed with his dear son Frank the largest apiary in the world in one yard, as that his management was so thorough and systematic, as based upon such a complete knowledge of the habits of the bee.

If for no other reason, his method of treating weak colonies in the spring, and other helpful suggestions, have placed the bee-keeping fraternity under lasting obligation to revere his memory.

As a frequent visitor to his apiary I can positively assert that all the wonderful achievements ascribed to him were literally true, as he was successful in every sense of the word.

It often pained him that others questioned the merit of some of his methods, notably that of strengthening a weak colony by placing it over a strong one, but he would frequently point out where failure was the result of bee-keepers overlooking some little though essential detail.

Every plan he suggested was the result of successful experiment, and he was actuated solely by a sincere desire to see his fellow bee-keepers succeed; in fact, the success of others was a passion with him.

What he has done for the bee-keeping world entitles him to a place with Langstroth, Dadant, Dzierzon, and other stars of the first magnitude.

Third, *as a husband and father.*

It has been my privilege as a clergyman to enter many homes in various parts of the country, and yet I must say that, for happiness, harmony, and contentment, the home of our brother was an ideal one. He loved his home, his wife, and his children. On the occasion of a visit he related to me with much pardonable pride the satisfaction he felt in the fact that his children were all doing well, and that none of them had ever caused them a heartache. What a comfort this must be to his sons—noble, manly fellows, every one of them—and to his devoted wife and daughter! It is such sweet homes as this that constitute the bulwark of our national righteousness.

In closing I desire to speak of our brother, fourth, *as a Christian.*

Brother Alexander was not only a Christian by profession, but, best of all, he lived the Christ life, and followed the example of his Savior, who "went about doing good."

Our friend made no loud profession; but everybody knew that he loved God with all his heart and his neighbor as himself, and Christ said this was the sum total of religion.

A few days before his death, his dear wife, one of the biggest-hearted and most motherly of women, played on the organ, and sang, at his request, his two favorite hymns, "Jesus, Lover of My Soul," and "Nearer, My God, to Thee;"

and when she finished he requested that she sing them over again, which she did, to his great satisfaction.

The day before his death he turned to his wife and said, "Oh! wouldn't it be nice if, when the end comes, I could just go to sleep?"

Truly, with Paul he could say, "I am now ready to be offered, and the time of my departure is at hand. I have fought a good fight, I have finished my course, I have kept the faith; henceforth there is laid up for me a crown of righteousness which the Lord will give me at that day; and not unto me only, but unto all them also who love his appearing."

Among those present was Mr. N. D. West, of Middleburg, N. Y., who, in the past few months, has been a frequent visitor to the Alexander home, and who, like the writer, felt most deeply the loss of a true friend.

"E. W. Alexander, hail and farewell." "We will meet thee again in the dawn of the resurrection morning."

The bereaved family have the sympathetic prayers of the bee-keeping brotherhood.

Whatever provision our dear friend has made for his family is as nothing compared with the priceless legacy he has left them of an honored life. If I were to choose the epitaph to be placed upon the stone to mark his last resting-place, it would be this:

"His life was beautiful,
His work enduring,
His death triumphant."

Rye, N. Y.

FIG. 1.—LOAD OF BEES ENTERING THE WATER TO LOAD THE BOAT BOUND FOR LONG POINT.

## MIGRATORY BEE-KEEPING.

### Moving an Apiary to Basswood at Long Point Island, Ontario, Canada.

BY PAUL MICKWITZ.

It takes experience and care to move bees on the train; but something else is necessary for moving them 12 miles over water in small vessels. It takes courage. Mr. R. F. Holtermann, of Brantford, Ont., with whom I have been this season, has twice before moved his bees to Long Point. This beautiful island, situated in the northern part of Lake Erie, belongs to the Long Point Co., which consists of millionaires from New York, Buffalo, etc. It is especially noted for its excellent opportunities for hunting and fishing. About three-fourths of the trees are basswood, which sometimes yield heavy crops of honey. Twenty years ago Mr. Holtermann had his bees on this island for queen-rearing purposes. Two years ago he had 240 colonies there for the basswood-honey flow, and since that time he has had the sole privilege of utilizing its rich honey resources. This time 100 twelve-frame L. hives were moved over as announced on p. 932, Aug. 1st.

The preparations were made so early that we could take a rest before the night work began; but after sunset the screens were put on. The large space be-

FIG. 2.—LOADING THE BOAT FROM THE WAGON.

FIG. 3.—UNDER WAY.

tween the entrance and the screen, made possible by the portico, seems to be a splendid arrangement, for the bees have a chance to get out of the hive and get fresh air through the large screen. On four hay-racks the bees were taken to the station, where they were loaded in a cattle-car. Close attention was paid to the condition of every hive, and where bees in large numbers were playing with their antennæ through the screen, water was poured against it, cooling them.

The next morning we left for Lake Erie; but our freight train was so slow that we could not get the first lot of bees moved over to Long Point until about two o'clock in the morning, then, after placing the hives in the high grass on the shore, the water became so rough that it was impossible to take the rest of the hives over. Our boatman brought us back to the shore, but did not dare risk loading up again. He could not wait for us, either, and we were, therefore, compelled to seek another vessel. A little steamboat was finally hired, and the following morning the other lot of bees was taken 12 miles to the island. These bees had been confined 68 hours, and were still in an excellent condition, although they had been thoroughly watered every hour, at least during the day, when the hot sun was shining on the shore. Two hives, in which the bees were suffering, we gave a flight in the evening. It seems to be very important, not only to throw water against the screens, but to throw it all over the hives.

The hives were brought from the shore to the steamboat on hay-racks, on account of the shallow water; and from the steamboat to the shore of Long Point they were brought in a little row boat, about 15 at a time.

Two weeks later the honey was extracted, and the bees brought back to the shore and placed ready for buckwheat.

Brantford, Ont.

[Mr. Mickwitz is from Helsingfors, Finland, Russia, and by arrangement before leaving there he is spending a season in Canada with Mr. R. F. Holtermann. It is his intention to spend another year in the United States, and then return to his native land to engage in bee-keeping. Before going to Mr. Holtermann's, Mr. Mickwitz spent one winter with The A. I. Root Co., familiarizing himself with the various styles of bee-keepers' supplies and other details of manufacture. He was not unfamiliar with the general subject of bee-keeping when he came to this country; but when he arrived here he knew practically no English; but in the short time that he has been here he has acquired a remarkable command of our language. His letter, which we publish, is a model of idiomatic English—not a misspelled word nor an ungrammatical expression.

It is with peculiar pride that we observe that the bright and progressive young bee-keepers of Europe have come and are coming to America to study modern American bee culture. It is these young bloods who, in the near future, will be largely instrumental in setting aside the old straw skep and the box hive, and introducing the modern movable frame of the Langstroth type. There are movable frames of the Dzierzon style in Europe; but they have nothing of the conven-

FIG. 4.—UNLOADING THE BOAT AFTER THE RETURN TRIP.
Reading from left to right, those on the boat are — Walter Bailey, a local bee keeper; Ivar, Mr. Holtermann's eldest son; and Mr. Secord, of St. Williams.

FIG. 5.—THE APIARY AFTER IT WAS MOVED TO LONG POINT ISLAND.

ience and the rapid handling of the Langstroth in its various modified forms.

We wish to say of Mr. Mickwitz that he won the esteem and respect of his fellow-workers during his brief sojourn at The A. I. Root Co.'s plant. He will go back to his fatherland well equipped, and we doubt not he will be an important factor in modernizing methods among his own people.—ED.]

## QUEEN KILLED BY A RIVAL QUEEN.

BY J. L. DAVIS.

In GLEANINGS for Aug. 15, third item of Stray Straws, you speak of the bees and not the queen as killing the other queen. Some years ago I opened a hive that had a young queen that was laying some three weeks. Her mother was in the hive laying also, as they happened to be on the same card. As I ran my eyes over the surface of the card next to me the old queen came through a hole next to the frame in the upper corner. She took a zigzag course down across the comb, stopped near the lower corner, and seemed scared. She was breathing fast. I watched her about five seconds, and pop came the young queen through the same hole in the upper corner. She came racing down across the comb. Just as nearly as I could tell, she followed in the same track that the old queen did. She came until she got within about an inch of her mother, and stopped for an instant. The old queen appeared to know that the daughter was after her, and was near. She started to go as if to do so carefully, and not be discovered by the other; but as she started I could not tell whether the young queen jumped or ran, as she was so quick about it. However, I noticed that the three or four bees that were between her and the old queen did not get out of her way. She went right over them and grabbed her mother, as I thought, by the middle leg on one side close to her body; then a desperate struggle began on the part of the young queen to swing around to sting her mother in the mouth. The old queen did not fight, but tried with all her power to keep the young queen from getting her sting in her mouth. In about ten seconds she succeeded. In an instant she let go and started off as unconcerned as though nothing had happened. The old queen seemed paralyzed, and started to roll off the comb, her jaws working and legs twitching, and she was soon dead.

The next year I saw the same thing in Mr. Barnes' apiary, only the queens met while I was holding the card. Both of the young queens acted as though they had been drilled by the same master hand to do the killing.

I have owned bees for 54 years. Bees emigrated through and from here and the next county west about 40 years ago.

Dimondale, Mich.

[As a general rule we may say that where there are two queens in a hive the death of one of them is caused, not by the bees, but by the rival. But there are clearly some cases where the bees take a hand in it. This was clearly shown in the instance related in the Straw in our issue for Aug. 15 to which you refer.

Again, it may be stated that, if a strange queen be dropped into a colony where there is already a queen, the bees will immediately attack her—

that is, ball her and sting her to death, or kill her by suffocation. But if two queens be caged in a hive, say for 48 hours, and the bees are friendly to one they will be friendly to the other. Either queen may be released. Yes, both queens may be released; and so long as they are kept apart there will be no interference on the part of the bees, probably, for some days. If the two queens are released during the honey-flow, if they can be kept from coming together the bees will not kill either one; but should they be able to meet, a mortal combat will take place. After the honey-flow is over, if the queens themselves do not settle the question, the bees will probably make way with one queen.—Ed.]

FIG. 1.—SHOWING A "FLOOD APIARY" IN A PECAN-TREE GROVE; A VALUABLE AND IDEAL TREE FOR SHADE.

## RIVER-BOTTOM APIARIES IN TEXAS.

### A Quick Way of Making Increase at Out-apiaries; the Danger of Floods.

BY LOUIS SCHOLL.

It is well known that the writer keeps bees in a great variety of places. The result is that he is sure to get some honey somewhere. There are sixteen yards in all. The two pictured here are furthest away. No. 1 is 183 miles, and No. 2 is 197 miles from home. These can well be called "legged apiaries," as the hives are kept on high scaffolds on account of the overflows. This spring the water came up several times to within four inches of the bottom-boards, being 3½ ft. deep in the yard, and remaining once for nearly an entire week. These are the highest places for miles around. The water is from 4 to 6 ft. deep over great areas at such times. No. 1 is located in a young pecan-tree grove. These trees make an ideal shade during the summer, and they shed their leaves for winter so the sun can strike the hives. This is very necessary, as the atmosphere in these wide valley lands is very damp. Besides being one of the best shade-trees for all kinds of purposes, it is a valuable tree for nuts. If the trees have been "worked" (budded or grafted with the thin "paper-shell" variety), the nuts command an extra good price, and there is a good demand for them. These trees ought to be planted in place of the many thousands of other less valuable shade-trees. Bees gather much pollen from them in spring.

FIG. 2.—SHOWING FLOOD SCAFFOLDS, AND EXTRA BODIES FOR INCREASE LATER.

Fig. 2 shows another yard

further down the river, near an area of basswood. Many bee-keepers of the North suppose we have none of this; but East Texas abounds with basswood in some parts. Cotton is the main source, as there are thousands of acres in the large plantations.

In the last-named yard, a lot of large hive-bodies with full sheets of foundation in the frames have been placed over the brood-chambers with the shallow supers of honey above. These are to entice the bees and queen away from the lower body, and a new brood-nest will then soon be started. After this is well along, about a 50-per-cent increase can be made in a very little time. A queen-excluder is slipped between the two chambers and left for a few days, *a la* Alexander, so no eggs or larvæ may perish, when the upper portion of the hive is set on a new bottom-board on the old stand, and the lower one, with a new cover, is moved to a new stand. The entrance of this old hive on the new stand is closed with grass, moss, or green weeds, to hold the bees a few days, when they will remove it. A queen or ripe cell is introduced before the cover is put on. This has been the quickest and easiest way of rapidly increasing bees at long range, and requires very little attention. When so many apiaries are greatly scattered it is necessary to resort to wholesale short-cut methods. I have made new colonies in this way, both in the fall after the honey-flow or in the spring before it. Often I do not return for several months after making the move.

New Braunfels, Texas.

## THE VALUE OF A SWARM-CATCHING CAGE IN A HONEY-YARD.

BY E. R. ROOT.

As it is getting toward the season of the year when bee-keepers will seek to make certain appliances for next season's use, I take pleasure in showing a useful device which almost any one can make. It is neither more nor less than a wire-cloth cage of sufficient size to slip over the largest hive in the yard. Wire cloth or mosquito netting is nailed on to a light framework of the construction shown.

It sometimes happens that a colony is suddenly attacked by robbers. A cage like this can be set down over the hive, trap all the robbers, and prevent any more from getting in at the entrance. The inmates of the hive will, if outside, cluster around the outside ot the cage. It may be left over the colony until night, when the robbers may be destroyed or taken to an outyard; for to let these bees loose back into the same yard will only invite trouble for the next day.

But we have used the cage to very good advantage in catching swarms just coming out. One or two of them are kept handy in the yard; and if a swarm is seen coming out, one of these cages is clapped immediately over the hive from which it is coming. Even if some of the bees have gone out they will soon come back and cluster around outside while the rest of their companions are clustered inside.

In the photo here shown it will be observed that

A USEFUL APPLIANCE FOR AN UP-TO-DATE BEE-YARD.

EXHIBIT MADE BY SOME OF THE MEMBERS OF THE LEBANON, PA., BEE-KEEPERS' ASSOCIATION.

the swarm is clustered on top of the cage. As soon as they are all out, the cage and all is picked up at the intersection of the cross-pieces at the top, set over the hive ready to receive them, when the cage is given a jounce on the ground. A little later on it is given another bump until the bees have entered their new home.

Of course, this method of catching a swarm just as it is coming out is not new; but sometimes old things need to be resurrected until prospective users begin to see their value. This cage is one of the new old devices that should be made up for next season's use.

It may not be necessary to have such a cage where comb and extracted honey are produced; but if one is rearing queens he must not harbor in the yard any bees that have acquired the robbing habit, as they will be a continual annoyance to the apiarist and to the working colonies throughout the entire season.

## HONEY EXHIBIT OF THE LEBANON BEE-KEEPERS' ASSOCIATION.

BY E. L. BROWN.

The exhibit shown in the engraving is the first attempt of several members of the Lebanon Bee-keepers' Association, and consists of comb and extracted clover honey, beeswax, and leather-colored and golden Italian bees. The exhibit took the first prize on comb honey, first on extracted, and first on wax. We secured, also, a special prize of five dollars for the best and largest display of honey, bees, and wax.

Lebanon, Pa., Sept. 3.

[The honey exhibit, for a first attempt, is excellent. It shows good variety and the different forms in which honey is put up.—Ed.]

## THE SPIDER-PLANT AS A HONEY-YIELDER IN ILLINOIS.

BY A. N. COOKE.

I have experimented with the Rocky Mountain bee-plant the last season, and I find it one of the best for honey, as it yields more than any other plant that grows. I watched the bees gather the nectar from several flowers, and it took three bees in all cases to gather the nectar from one blossom. The first two bees stayed one and one-half minutes each; then the third bee stayed forty-eight seconds before it left the plant. I took a glass medicine-dropper with a rubber bulb to it, and I drew the nectar from 13 flowers, getting a teaspoonful in all. In one season there are several hundred blossoms to each plant, and the blossom-stalk grows about four feet after it begins to blossom, until it is finally about nine feet tall. There is no more beautiful sight than an acre of these plants in full bloom. I shall plant about two acres this year. I also have the white variety; but as to its value as a honey-yielder I can't say, as I got the seed only last fall.

If any one has a weedy patch of ground that he wants cleared up, he should sow the Rocky Mountain bee-plant. The weeds will leave, and the ground will get mellow in a short time.

Woodhull, Ill.

[It is our opinion that the plant you describe is not the Rocky Mountain bee-plant (*Cleome in*

*tegrifolia*), but the spider plant (*Cleome pungens*). We have seen the Rocky Mountain bee-plant in the Rockies; and while it very closely resembles the spider plant, being a very near relative, yet it is distinctly different. Moreover, we question whether a plant adapted to altitudes 10,000 to 12,000 feet above sea-level, and on a rocky soil, would be adapted to grow on rich prairie land such as may be found in Illinois of comparatively mild climate. Your description of how the bees gathered the honey, and of the size of the plant, tallies very closely with the spider plant.

In 1878 Mr. A. I. Root was very enthusiastic over this plant. He had quite a flower-garden of it, and at one time had as much as half an acre. It yields profusely, even late in fall, but it must have rich soil. When conditions are good it is one of the most remarkable honey-plants in the world. A single bee can not gather all the nectar there is in one blossom. Indeed, it is secreted so rapidly that a human being can gather it with a teaspoon. A. I. Root actually did this, gathering a sufficient quantity so that he was able to judge of the flavor of the nectar.

The spider plant is indeed a very ornamental plant, and is sold to decorate our flower-gardens sometimes.—ED.]

## WHEN BEE-KEEPING PAYS.

### No Encouragement for the Bee-keeper who does Not Look Ahead.

BY G. W. HAINES.

The man who is afraid of the bees, and never gives them any thought or care, but puts his whole time at something else, is not making bee-keeping pay. Some whom I visit allow the grass to grow up all around the hives. They have no sections or extracting-supers on, although in most places they talk about ordering some, and want to know where to get them quickly. Their bees are swarming, and no hives are ready. If I ask them if they take some bee-journal they usually say they get a sample copy once or twice a year, but they can not afford to take it. When I tell them that one colony of bees, if properly taken care of, will pay for a bee-journal and a book on bee-keeping the first year, many times, they say if they were a supply-dealer, or an editor of a bee-journal, or a State bee-inspector, they could do big things too; but the bees alone do not pay.

In looking over their hives it makes me want to talk to them on hive-making; but there is no use so long as they are sure that the business does not pay.

On the other hand, I sometimes call on a bee-keeper and find him at work with the bees, getting every thing ready ahead of time. He will have a lot of hives piled up nice and straight to keep them from warping all out of shape, and enough supers and sections on hand for the harvest. Besides the extracting-combs well taken care of, he will have a good supply of new frames nailed and ready for use, as well as plenty of foundation. Every thing about the bee-house will be in order, and on a shelf I will find three or four of the best bee-journals and half a dozen up-to-date books on bee-keeping. As we sit and talk about the bees and different honey crops of years gone by I do not have to ask him whether bee-keeping pays.

Mr. E. W. Alexander often told us wonderful stories at the conventions, so one morning I boarded the train for Delanson, N. Y. I found him in the honey-house, and we walked out through the apiary of those 750 nicely painted hives, all set in straight rows, while clouds of bees were bringing in the nectar from up and down that beautiful valley. He showed me that large honey-house and bee-cellar, and his way of extracting and managing bees. When we went into the honey-room I stood and looked at the thirty tons of honey, all from one yard.

The more honey a man has, the more he looks to the marketing of his crop, because a cent or two more per pound amounts to something. A man with only a few colonies, on the other hand, thinks it does not make much difference with him, just so he cuts the price and closes it out *because the business does not pay.*

I have heard people say that, when the bees are ready for winter, there is nothing more to do! However, the fall is just the time to commence for a big crop of honey, and it takes all winter to get the hives and every thing else ready, and all the evenings to read the bee papers and books.

Some one may want to know what journals to take. Take them all; and as for books, commence with Quinby, Langstroth, and all the rest down to the present date, as the bees pay for them if the owner does his part.

It was a pleasure for me to take the first premium at the county fair for the best exhibit of bee-keeping books and journals.

When one can stand the stings, lots of hard work, and occasionally a poor year, and if he is a good salesman at wholesale or retail, then there is money in bees.

Mayfield, N. Y.

## RETAINING THE AROMA OF NEW, WELL-RIPENED HONEY.

BY G. A. LUNDE.

I have noticed in GLEANINGS, off and on, that you lay great stress on having extracted honey well ripened before extracting. I have been interested in this question for over 20 years, and read with interest what Mr. Burnett, of Chicago, and others have written on the subject; but I have failed yet to find any positive information as to the *modus operandi* of how a person can, after extracting, *retain* this aroma or the fine flavor well-ripened honey has just when extracted. I doubt if any bee-master can give any solution to the problem. I have no bees here. My son is running our yards at Wausau, Wis., but I may also keep bees here next year, if I stay. We have of late years been in the practice of putting up our honey in Aikin paraffined paper bags. But I am inclined to think it is more difficult to arrest the flavor this way than when put up in tin cans or glass jars. When extracting we do it this way:

We put the honey in open barrels, as fast as extracted, with a cheese-cloth cover over the top of the barrel when not working. Then when honey, say in September, commences to stiffen, we fill the paper bags from the faucet.

We put these bags into an empty hive, as many as we can conveniently get in. This prevents them from tipping over. Then we carry these hives upstairs, open the windows so the honey will harden the sooner, and, when fully solid, we seal the bags.

Now, of course, the bags will have to be left open before being sealed; then my question is: Will not the flavor be lost during this time before the bags are sealed? We put the cover on the hives; but I should judge the flavor would escape any way.

I like the method of putting up extracted honey in these bags. Honey is handy to handle, to ship, and to serve in this way. But if the flavor can not be retained, I for one will have to try some other method. I should be glad to know if there is there is any method by which the excellent flavor of well-ripened honey can be kept in the honey when put up in paraffined paper bags. Who can give the information?

Hayfield, Minn.

[We referred this to Mr. W. A. Selser, of Philadelphia, who replies:]

The exceedingly delicate aroma of honey in general is at its best when evaporated by the bees very rapidly during the honey-flow. Nectar gathered slowly, and placed in the same cells on different days, will not have the intensity of aroma that nectar has when placed in an individual cell, all within a few hours. This can be detected by a careful observer testing the honey in the middle of a frame and on other parts of the same frame that has not been placed there by the bees on the same day.

I have made a series of special experiments in this line by washing the honey in a glass-stoppered, closed, filtered funnel with ether. After drawing off the residue (of ether and honey) I have been able to retain the aroma for a long while. This is one of the experiments which will enable one to distinguish which plant the bees have gathered the nectar from. Quite often the taste is deficient, and the aroma in honey more distinct, or, sometimes, *vice versa*. This would indicate that the rapid evaporation of the ether in contact with the honey extracts the aroma, and it has made clear to the writer that, under perfect atmospheric conditions (entire absence of humidity), the same action takes place, only in a less marked and rapid degree.

The aroma of honey has often been spoiled on account of the cappings of the cell not being air-tight, or the honey left on the hive too long, and the foreign smell of the bees is absorbed by the honey if left on after it is capped. Therefore the only way to retain the aroma is to exclude it from the air as soon as it is capped. There is no way, therefore, to retain the aroma of honey when put up in bags such as Mr. Lunde is using. The best honey, after it is candied, naturally does not come in contact with the atmosphere except on the surface. Therefore if the honey could be allowed to candy in air-tight barrels or vessels, and then dug out in its hardened condition and placed in paper bags, the desired results could be obtained, but this, no doubt, is hardly practicable.

Honey can be extracted, put up at once in air-tight barrels, coated with paraffine, and shipped a considerable distance, then immediately bottled, without any appreciable loss of the aroma. This is why honey left to ripen in large tanks, from the very nature of the case, can not be as finely flavored as honey capped rapidly by the bees.

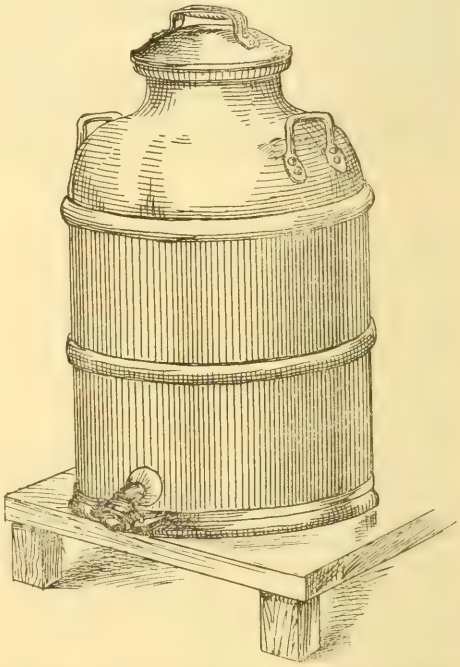
W. A. Selser.

## PROPERLY PROPORTIONED SYRUP FOR STIMULATIVE FEEDING.

BY SWARTHMORE.

Properly proportioned feed and its mixing is quite important; in fact, it is a matter for serious consideration. To secure the best possible results at the lowest expense the following recipe is recommended:

Place in a twelve-quart milk-can, for instance, several pounds of best granulated sugar, and mark to what point in the can the sugar comes. Then pour upon the dry sugar boiling water, stirring all the while until the syrup rises to the point marked. Stir until thoroughly dissolved; then cork the can and set it aside to cool.



A CONVENIENT FEEDING-CAN TO HOLD SUGAR SYRUP FOR STIMULATIVE PURPOSES.

When feeding-time arrives draw off this sugar syrup, a jar half full; add a little honey to flavor; then fill the remaining space in jar with clear water, using cold water if the weather is warm, and hot water if the weather is cold.

This we have found to be the safest, quickest, and best plan for the mixing and keeping of feed for stimulative purposes in a queen-rearing yard.

If the can is provided with a gate for ready drawing, so much the better.

If much feeding is to be done at one time, mix the syrup in a larger vessel and pour from that

into the jars. A large-sized tea or coffee pot is first rate for this purpose.

All vessels for feeding should be provided with covers lest troublesome robbers make life miserable to the apiarist.

Swarthmore, Pa.

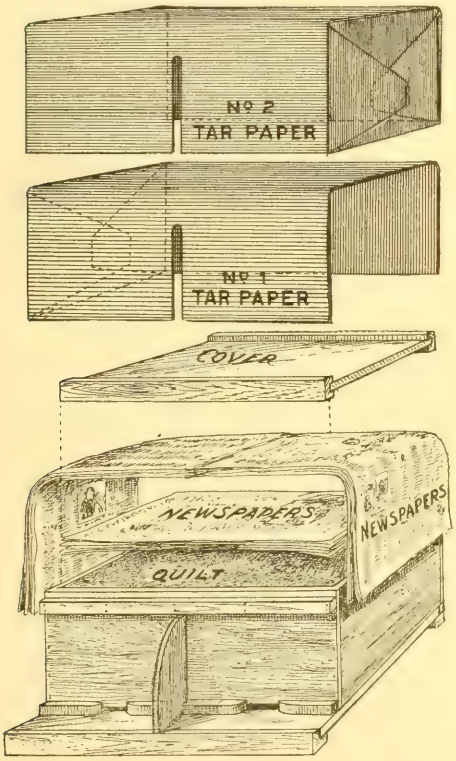
## PAPER WINTER CASES.

### How they Wintered the Bees, and how they Increased the Honey Crop.

BY L. C. ALWIN.

The drawing herewith illustrates my method of packing colonies in the spring. The first hive shown is one used in the Ferris two-queen system; but the method applies to eight or ten frame single-queen colonies as well, as shown in the second drawing.

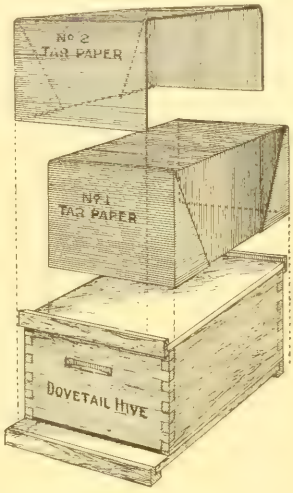
On account of the late cold and disagreeable springs, packing has become a necessity in these northern States, and the above plan, it seems to me, has proven the most practical of any that I have employed.




The reason I use two pieces of tarred paper is because I am not able to get paper large enough to cover a 14-frame hive from cover to bottom-board, as it ought to if good results are secured. I do not know whether there is any advantage in having two pieces, except that there would be a double layer of tarred paper in front, in the rear, and on top; but this can hardly be considered on account of the expense of using two pieces for a hive. There is no doubt that one piece of tarred paper per hive would be better. I use only two pieces for the Ferris hives. My eight-frame hives are all packed with a single piece.

In putting on this packing I have not made it a practice to tie it down with string, but use broad-headed tacks that I can easily drive into the wood with my thumb. But I have tied the packing of some of the hives, and think it just as good as tacks, if not better.

I am not an advocate of wintering bees outdoors in a climate so cold as that of Minnesota, although I have wintered, and am at the present




time wintering, bees outdoors successfully. My success is due to a great extent to the mild winters we have been having the last few years. But the system of packing that I describe is meant for spring protection; but I do not hesitate to advocate this method of packing for winter in a climate like that of Ohio. Although our winters have been mild, our springs have simply been — well, I can't think of a word strong enough to express myself properly—but the average temperature from the 1st of April to the 15th of May was 40° F. last year; and in spite of these conditions I had my colonies boiling over with bees, and swarming by the last week of May and first of June; and if bees rear brood extensively so that, by the last of May, the hives are just boiling over with bees and brood, with the temperature outside ranging below freezing, you can certainly winter them outdoors successfully in a climate where the temperature rarely goes below zero.

Last spring, March 15, on account of the mild weather and the restlessness of the bees, I set 54 good colonies on their summer stands. Of these, I packed 41 according to my method; and because I ran out of newspapers the remaining 13 were packed with tarred paper only. This warm weather was soon followed by a cool spell which lasted until the last days of April. On the first of May we were blessed(?) with a foot and a half of snow. This was soon followed by severe cold weather, with the temperature ranging from 5 to

10° above zero. This lasted for over a week. During this time I made it a practice to give each colony a pint of hot sugar syrup each day. The 41 well-packed colonies took theirs every day, and would have taken more. The 13 with only tarred paper would not take the syrup during this cold spell; and every night I changed hot syrup for cold, only to find it, next night, cold and untouched. Following this cold spell came a period of warm weather, and I took the occasion to examine the bees and see how they withstood the cold weather. The 41 newspaper-packed colonies had, in the eight-frame colonies, eight frames of brood or six frames of solid brood, and were boiling over with bees; and of the Ferris, or twelve-frame colonies, there were 12 frames of brood or 10 frames of solid brood, and they were hanging out at the time of examination with the temperature at 78° in the shade. Of the 13 colonies packed only with tarred paper, eight were dead—starved. Two absconded, and went into other hives, and three were sticking out their stings and shaking their wings at me when I took off their cover; and by feeding and coaxing I was able to build them up to be fairly good colonies for wintering by fall.

It might be of interest for me to say that the 41 colonies that were rearing brood during this cold spell averaged 100 lbs. per colony in last year's poor season.

New Ulm, Minn.

[The use of two pieces of tarred paper in place of one will facilitate very materially the packing and unpacking; but we would suppose that, at the line where the top piece overlaps the bottom one, wind and water would beat in; and if the hive is tipped a little sidewise the water would run down between the packing. Perhaps you overcame this in some way.

It is a little surprise to us that you secured as good results after feeding in such cold weather, even though the syrup was given them hot. It would have been our opinion that this hot syrup would have so stirred up the colony that bad results would have followed. At all events, we would say that beginners should be cautioned; for unless hives are well packed, and colonies very strong, such feeding would be a very doubtful proceeding.

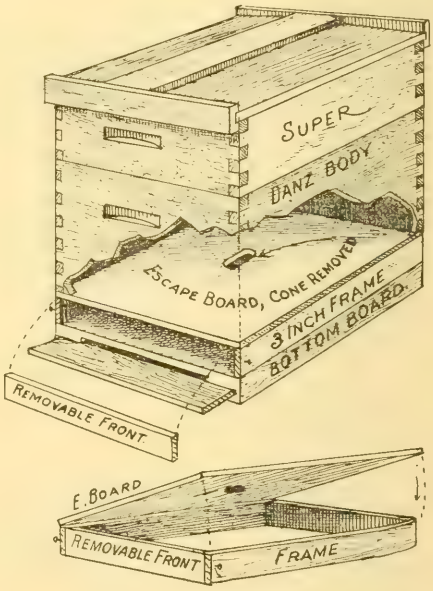
In a general way we observe that, where your hives were packed with newspapers under tarred paper, you not only secured excellent results in winter, but increased materially the amount of honey. We see no reason why hives well papered under caps should not winter their colonies just as well as those having a wooden cap over them. It was demonstrated last winter in our own yard, and reports went to prove it, that a mere paper cap without packing under it is hardly sufficient protection for outdoor-wintered colonies in localities where the temperature goes down to 10 or 20 above zero, occasionally hovering around the zero point. There should be several folds of newspaper, old carpeting, blankets, or something under the cap to provide the necessary insulation, for a cold atmosphere will penetrate a ⅞-inch board. If, however, such boards be covered with several folds of newspaper, with a good protecting cap, either of paper or wood, good results will ordinarily follow.—Ed.]

# Heads of Grain

## From Different Fields

### DEEP SPACE UNDER BROOD-FRAMES; QUEEN-MATING EARLY IN SPRING.

In experimenting on how much space should be allowed under brood-frames I have used this season the regular A or Danzenbaker bottom and B style bottoms, 1½, 3, and 4 inches deep The Danzenbaker bottom gives traces of wax; the 1½-inch B bottom gave one inch of comb built below the bottom-bars; 3 and 4 inches gave clean bottom bars. I think these experiments tend to prove it advisable to use a frame about 3 inches deep between the brood-chamber and the bottom-board. While this is true of summer I have no doubt it is also true of winter, giving more ventilation and protection from frost, especially if arranged so bees and air must pass from front to rear of hive before entering the brood-nest. Now to prevent the increase in bee appliances I intend




to place escape-boards, with the escapes removed, between the three-inch frame and bottom-board, giving the bees a central entrance and 3 inches of space under the brood-combs, with a vestibule of the bottom-board. See illustration.

Bladen, Ohio. Chas. H. Cargo.

[If the experience of Mr. C. P. Palmer, as related in our Sept. 15th issue, p. 1136, is any criterion, it would seem as if your form of bottom-board might not be very satisfactory for winter use. We can hardly see what gain would be accomplished for summer. Indeed, in a space so deep the bees would be inclined some seasons to store comb if they did not last season. Bet er not make too many of them.—Ed.]

BEE-KEEPING IN ALASKA; PREVENTING HONEY FROM CANDYING IN THAT COLD CLIMATE.

I find that setting a can of honey for a number of hours in hot water prevents it from candying, the length of time depending, of course, on the heat of the water; and as the general public does not know enough to follow instructions concerning heating, it stands me in hand to do the heating before I sell.

Now, suppose I can rent a heated room from the heating-plant—will that be as good? and how long should I keep it in a room of a given heat? Would 120 degrees for 24 hours be too much or better than 12 hours at 140 or 6 hours at 160? Any heating I have done so far has, if any thing, improved the honey; but I am wary of making an experiment on a big scale where there is so much at stake. I have had honey here two winters without candying, and during one of the winters we had the mercury down to 65 below zero for three days, 50 for one month, 40 for two months, and zero to 20 above for the rest of the season. How is that for high?

Fairbanks, Alaska. WM. LAWSON.

[We should say, "How is that for *low?*" Well, we can't beat it in any portion of Uncle Sam's domain south of Canada. As to the heated room, if you can maintain a temperature of 120 F. for 24 hours, or 140 for 12 hours you might be able to liquefy the honey; but if it were candied solid, and there were a large bulk of it, the portion in the center might still be in a more or less solid state. Generally speaking we would advise melting a smaller quantity in a smaller vessel, and for a shorter time.

But say, friend Lawson, we should like to hear more about your Alaska bee-keeping. How do you winter in so cold a climate? What are your honey sources, etc.?—ED.]

A PLAN FOR FINDING BLACK QUEENS.

I have four colonies of Italians and nine of black bees which I wish to Italianize next season. I have so much trouble to find black queens that I wish to know if the following plan would work. Form nuclei of the Italians about swarming time, then set a nucleus over each black swarm with wire cloth between for a couple of days. Then set the old hive to one side and put the nucleus in its place till all field bees have left the old swarm. Then I can easily find the black queen and destroy her and unite the young bees and brood with the nucleus. Would the old black bees be likely to kill the Italian queens? Would it disturb them very much if done during a honey a harvest?

Sodus, N. Y. MRS. WESLEY GRINNELL.

[The plan that you speak of would work, only we would advise that you cage the Italian queen at the time of uniting with the black bees. A much simpler plan of finding such queens is to use perforated zinc. If you own an Alley trap or entrance-guard, put it over the entrance, shake all the bees in front; or, better yet, move the old hive off its stand and put an empty one in its place with perforated zinc or entrance-guard over the entrance. Now shake all the bees in front, putting the combs in the new hive on the old stand, and, last of all, dump the bees out of the old hive. The bees will rush into the new hive; and by closely watching you will shortly be able to see the queen in her vain endeavor to pass the metal. She may now be picked off and killed. Indeed, it is not even necessary to watch for the queen. Shake the bees in front of the hive, and then come back in the course of fifteen or twenty minutes. Most of the bees will have gone inside. The few that remain outside can be driven in with smoke, after which the queen can be easily located.—ED.]

DO YOUNG BEES KILL THE OLD ONES WHEN THEY CAN NO LONGER WORK?

I have been observing some things about bees which indicate that they "make way" with the old folks when they consider them past usefulness—i. e., the workers. Do they? I don't think I ever read any thing of the kind.

Cincinnatus, N. Y. EMMET B. KIBBE.

[Young bees never kill off the old ones unless they are structurally defective in some way. After a good heavy honey-flow there will be many bees that have so frayed out their wings by hard toil that they are no longer able to fly. These, the other bees will carry away and drop; and, being unable to fly, they can not crawl back. In this there is not the slightest trace of gratitude, but, instead, we have an illustration of the principle of the "survival of the fittest." Old bees in the hive that are able to go to the field may remain so long as they can gather nectar.—ED.]

CLOTH COVERS FOR EXTRACTORS NOT LIKED.

On page 1596, 1907, I notice an illustration of a *cover for a honey-extractor*. I am sorry to see you pass it by so lightly in your footnote, with the suggestion that a cloth top is "just as good," and that most bee-keepers use them. What I wish to say is, that such a cover as illustrated is almost a necessity, and a much-needed improvement, and, when properly made and closely fitted, is worth $2.50 to any one who owns an extractor, and it need not cost to exceed one dollar in the making of the machine

Not all have mouse-proof houses for machines; and I have found, in leaving a cloth over the machine over night, as many as four dead mice in my extractor. The mice readily gnaw holes through the cloth.

The cover illustrated, as well as an extractor, being capable of holding five or ten gallons below the reel, is a practical necessity. Of course, the producers can have these extras made after they get the machine, but at a great additional expense. I am simply disgusted with cloths and rubbers sent with machines.

Brighton, Col. WALTER MARTIN.

[We should be pleased to hear from others on this point. If there is a demand for a mouse-proof cover it can be furnished.—ED.]

EXTRA-YELLOW ITALIANS.

I am sorry for the bad reports we read of the goldens. I find one on p. 988, Aug. 15. I find them the gentlest bees of all. My experience is that blacks are cross, hybrids crosser, Cyprians

crossest; Holy Land cross, dark Italians, if pure, good; the very yellow Italians the gentlest of all. Keep all positive black blood out of Italians for best results. I have only one cross yellow Italian colony out of 20. We have more golden or five-banded bees at present in America than we ever had before. They are gentle, winter well on summer stands, and are good honey-gatherers. This is my experience of about 12 years.

Bechtelsville, Pa. H. M. Moyer.

HONEY-DEW FROM OAK LEAVES.

The bees in this section of country have been laying in honey-dew for a few weeks from oak leaves. Probably something in your next issue on this subject on how to treat the matter and prepare for winter would prove of great value to bee-keepers in general who are troubled in this way. P. B. R.

Harmony, Minn.

[Honey-dew from oak leaves is very poor stuff for bee-feed, more particularly in your locality, where the winters are long and hard. It is probably too late now to extract the honey-dew, as that would destroy the symmetry of the brood-nest. You can, however, feed good thick syrup made from sugar, which would counteract to a great extent the evil effects of the honey-dew. In doing this it is wise to disturb the bees as little as possible. Feeding such bees in fall is casting bread upon the waters.—Ed.]

POLLEN IN EXTRACTING COMBS.

Last spring I put half-depth extracting-supers on five of my hives, and the bees filled the upper part of each frame with honey and the lower part with pollen. Please tell me the cause of this, and what to do with these fifty combs. They are on the hives yet. H. R. McAdams.

Greenville, Ill.

[Bees will very often gather an excess of pollen when pollen is plentiful and nectar scarce. We would not advise leaving these combs in the hive for winter. So far as possible a colony should have best sealed stores with little or no pollen, except that one frame of it should be left on the outside for early brood-rearing in the spring. Where one finds he has an excess of pollen in the combs in the fall of the year, we advise taking them out of the hives and setting them aside to be used in the spring for stimulative feeding.—Ed.]

HOW TO SECURE PROPER VENTILATION OF A HIVE THROUGH THE WINTER.

I have been giving some attention to bee-keeping for just a few years. I have read every thing that came under my notice relating to bees. I have experimented somewhat, and observed very closely.

There is one thing that troubles me more than any thing else; and that is, the proper hive ventilation for winter use—referring to outdoor wintering. I can keep bees warm enough; but to procure what seems to me proper ventilation is a question I have not seen satisfactorily explained. I have no difficulty in ventilating my own sleeping-room, for I sleep with two windows open, summer and winter. I have had considerable experience with horses, cattle, hogs, and poultry, and have constructed barns with very satisfactory ventilation; but to ventilate a hive properly is another thing.

I am satisfied that many bees die in winter from no other cause than damp unventilated hives. I believe bees would come through the winter in much better order if kept drier and cooler rather than warm and damp, the same as poultry. I have been wondering why Mr. A. I. Root, with his long experience with bees, and his more recent experiments with chickens, could not make some suggestion on how to ventilate a hive properly. I wish to expel the bad air and dry the hive—not absorb it. How can it be done?

The standard eight-frame hive is 20 inches long. Would there be any objections to a hive 18¾ inches or 24 inches long, same depth and width? That is, would it make any difference with the working of the bees if a hive were shorter or longer than the standard?

Storm Lake, Iowa. Geo. H. Eastman.

[You have struck on a much mooted question, and we are sorry to say that our authorities do not agree as to how the hives should be ventilated, either in the cellar or out of it, during winter. But the general consensus of opinion in the case of outdoor-wintered bees is in favor of a restricted entrance, say about 6 inches long by ⅜ deep. If the colony is not very strong, 3 inches long by ⅜ would be better. Experiments where the entrances were entirely closed by wire cloth or a small bundle of straw have usually resulted disastrously for the colonies.

The latest tendency now seems to be toward shutting out the chilling blasts from prevailing winds and direct sunlight, and yet at the same time allow perfectly free ingress and egress of the bees.

For indoor colonies, some of our correspondents say the whole bottom of the hive should be open; but of late we have noticed quite a strong tendency toward leaving no more bottom ventilation than is afforded by the ordinary hive-entrance, such as would be used in the fall or spring. Our own experiments decidedly favor the common entrance rather than have the whole bottom of the hive exposed.

You are right, that dampness is the bane of successful wintering, either indoors or out. That is the reason why it is not wise to restrict the entrance too much, for there must always be a chance for the moisture to escape.

Changing the dimensions of the hive would make no difference with the bees, but it would increase the cost of supplies and make no end of confusion for you. Better not do it.—Ed.]

SHOULD NEW CANS BE SCALDED?

Is it necessary to scald new 60-lb. square cans before putting honey in them? I have been scalding them; but if it is not necessary it would save a lot of labor. Do you rinse them with hot water before using them? J. P. Moore.

Morgan, Ky.

[As a general thing we would advise rinsing out a new square can, to remove the residue of any soldering-salts that may be left. Boiling water would, of course, be better. We should like to know what is the general practice of producers in this respect.—Ed.]

# OUR HOMES

By A. I. Root

Thou shalt not commit adultery.—Ex. 20:14.
Her house is the way to hell, going down to the chambers of death.—Prov. 7:27.

Some time ago, while in the city of New York, I had a chat with Mr. Collingwood, the editor of the *Rural New-Yorker*. I told him one great reason why I recommended that paper more than any other of our good agricultural papers was because it was taking the lead in fighting humbugs and frauds, and iniquity of every sort wherever it crops out. I have often thought of the reply Mr. Collingwood made. It was in substance something like this:

"Mr. Root, I do not enjoy that kind of work. I dread it, and oftentimes go into it very reluctantly; but when I feel that the Lord calls on me to go down into Egypt, I am going to go down—that is, when I am sure it is my duty for the good of the people, even though I sometimes go very unwillingly."

Now, dear friends, I too dislike "going down into Egypt;" and some of you may think that the matter I am going to discuss to-day might be, a part of it, left out; but after thinking it over, and praying over it, I have decided that God wants me to hold up a warning.

In our issue for Sept. 1, page 1081, I said the marriage relation should be regarded as the most sacred and solemn thing between birth and death; and I wish to emphasize that fact by two sketches from real life.

Years ago, when I was exhorting all my friends and acquaintances to choose the Lord Jesus Christ for counselor and friend, I became acquainted with a young man who worked for me, and I had several talks with him. A little later his father also came into my employ. They came from a neighborhood where Christianity was at a rather low ebb. I think spiritualism had been prevalent in that region for a number of years, and religious matters had been put in the background. After several talks with these two people, I had the satisfaction of getting a promise from both of them to make at least a start in following the Savior. If I am correct, both of them gave me their hand as they gave me the promise. I can not remember now whether that promise included coming to our meetings and standing up before the world, as an indication that they were going to give the matter at least a trial; but I fully expected to see them both take such a public stand. I can not tell whether the father came to the meetings or not. The son did, but, if I am correct, he did not get quite to the point where he stood up or took part in any meeting.

Not long after this talk, while the father was busy at his work, a young woman who worked for a family near by came out and spoke to him. They were not acquainted at that time. He may have noticed her in passing by where she was employed, and I am afraid that, even though he *was* the father of grown-up children, he had been so careless as to cast perhaps admiring glances toward her. Oh dear me! As my mind goes back, and I think it over, I am afraid there are other fathers of families—yes, and perhaps professing Christians—who are so careless or thoughtless as to cast admiring glances toward women other than their own wives, especially if such women take pains to *invite* such glances of admiration. Well, this young woman left her work that morning and stopped this father as he was going by and said something like this:

"Mr. Brown, perhaps you know there is going to be a circus over at —— next week. Now, I should *awfully* like to go, but I can not very well go alone. Would you not like to get off a day and go to the circus* with me?"

Surely this was a bold proposal, or at least some people would consider it so. Others might think there was no particular harm in it. These two persons might get on the car at the same time, and if they did not sit in the same seat nobody would think any thing about it. When they got to the circus in a strange city, where nobody knew either of them, their presence together would be unnoticed, and they might get back home and nobody know any thing about their being together. When I afterward remonstrated with the father about what he had done, *especially* after the promise he had given me, he maintained that there was nothing particularly wrong about their going to the circus together in the way I have described. He said in substance:

"Why, Mr. Root, there is hardly a man going along the streets who would refuse to go to a circus with a nice-looking girl when she went out of her way to *ask* him to go with her as a favor."

But in closing I said:

"But, Mr. Brown, do you think that a married man, the father of grown-up children, ought to go off in that way with a woman who is almost a total stranger to him?"

He replied that, putting it that way, perhaps it was not just the thing to do; but he did not think very much about it at the time, and had no idea any harm would come from it.

Now, I hope you will excuse me if I talk plainly, and tell you right out in print what harm *did* come. They did not get away from the circus as they expected to; and when they did leave they were obliged to take a train that would not get them home that night. They had to stop over at a station part way. Now, I do not know who made the first suggestion, but I do know that the elderly man and young woman stopped at a hotel at that place as *man and wife*, thinking that nobody would ever make inquiry, and that it would never be found out; and it was not found out for several months afterward. What abject folly! what *could* those two people have been think-

* Some of my friends—yes, even good Christian people—think me a little singular because I shudder at the very mention of a circus. Please notice, this woman did not invite the man to go with her to a Sunday-school convention nor even to a county fair. The circus was just the place for her undertaking. This man was a great lover of horses, and she knew it. He was an expert in handling a fine team; and, by the way, the horses in the circus are an excuse for many good people to attend. I suppose the world has mostly forgotten the book called David Harum, and I am glad that it went so quickly out of sight. Now, David Harum not only made light of religion, and held up church deacons to ridicule in his opening chapter, but later on he put in a most eloquent plea, not only for letting boys go to the circus, but *encouraging* them to go. Now mark my word: When the saloons are banished from this State, Ohio is not going to be the popular "hunting ground" for circuses that it has been in times past; for *gamblers* and *bad women* are going to decamp also when the saloons disappear.

ing about? When I first heard of it I said it was incredible, and I would not believe it till Mr. Brown himself confessed it. Why, it seems that either one of them or both had lost their senses, or at least have lost all sense of decency and propriety before they considered such a step, or, to call things by their right name, before they voluntarily decided on *committing a crime*, not only in the eyes of God but against the laws of man as well. And, by the way, I think such a thing has happened at least half a dozen times here in our locality within my recollection. Two people have gone to a hotel, and the devil has persuaded them that, by signing fictitious names, they could evade discovery. So far as I know, in every case the thing was found out sooner or later. "Murder will out;" yes, and so will adultery. And, thank God, these things *do* get out—at least a great deal of the time, and the criminals have to suffer ever afterward the condemnation of all good people. This man was living at peace with his wife and family until this event occurred; but when the wife found it out, perhaps he confessed it and begged her pardon. I do not know how that was; but I know he bitterly regretted his folly. If I am correct he was never guilty of any thing of the kind before this event, and certainly never was afterward. He was one of the kindest and most genial men I ever met. He tried to make up by a straightforward, upright life for the sins of the past; but his wife refused to forget or to forgive. She said that either he would have to leave and go somewhere else or she herself would do so. Perhaps she had scriptural authority for her course, and yet I feel sure she made a mistake. Whenever a man or woman seems truly penitent for even a sin of *this kind*, and starts out to live an honest life afterward, I think the partner of such a person should forgive and forget the past; and I am sure there is nothing in the Bible contrary to my position in regard to the matter.

Long years passed by. At different times I urged that the father be permitted to go back home, and he finally did go there and stayed a few weeks; but his wife soon decided he would have to go away again. She said the sight of him brought back again the old bitter memories, and he would have to go away somewhere out of her sight. Once more, dear friends, I dread to tell the ending. It can be told in almost one word. That aged father finally died a suicide. Do you think that the second one of our texts is too harsh and severe? That young woman who fixed herself up so as to look attractive (before she went out to see a man old enough to be her father), perhaps had no thought of any thing so serious and terrible as what I have just been relating; and yet this thing she had planned certainly *was* "on the road to hell." She broke up the family, brought misery and unhappiness untold into that household, and the end was, as we have it in our text, "going down to the chambers of death."*

God grant that this little story may be a warning to men and women, both old and young.

My second illustration is, in some respects, a sadder one still. Years ago I became acquainted with a boy who in many ways showed marked ability. I plead with him to go to Sunday-school and to become a Christian; and part of the time I thought he was on the way to the "promised land." I finally lost track of him; and as he had a bent toward mechanical work he left the farm and spent one winter in a nearby city. When I heard of him again, somebody told me he had got into some bad habits. Before he went to the city to work I had him one time at work out in the woods with a hired man. This latter man was rough and profane, and the boy finally spoke right out and said something like this:

"Mr. Root, I like to work for you, and I am well satisfied with my pay; but I am not in the habit of being sworn at, even if I do not understand every thing; and I have been brought up where I did not hear any swearing at all. Now, I hope you will excuse me when I say that this man, who bosses the work when you are not around, must either stop his bad talk or I shall have to look for another job."

I put my hand on the boy's shoulder and told him I admired his spunk and grit; and after a pleasant talk with the hired man I told him he really would have to stop his swearing while he was on my premises. Now, that very boy, after being in town just one winter, *had learned to swear*. I could not comprehend it. I found him out in the field at work one day; and after shaking hands with him I said, "John, do you remember how you once refused to work for me any longer unless I made that man stop swearing?"

He said he remembered it well, but he rather hung his head.

"Well, John, what in the world has changed you, and your opinion of people who swear, to such an extent that you are now addicted to the very thing you were so vehement against only two years ago?"

He said he did not know exactly what had made the change.

"Why, John," I continued, "it seems to me that the Devil himself has somehow crept into your young and boyish heart and caused such a change in just one short winter."

About this time John was either crying or came pretty near it; and he owned up to me, in a general way, that Satan *had* probably got hold of him. I got him to go back to the Sunday-school, and he soon became a leader in the prayer-meeting and in all Christian work. The boy was literally born again, and everybody was surprised at his piety and devotion.* When the good pastor who had united with me in getting John

* I do not know how many other families were ruined and broken up by the schemes of this woman. I only know that she made a remark once to a young girl in her teens (when this girl was shocked at her familiarity with men in general), something like this: That, according to her ideas, about all the satisfaction or fun that this world has to offer is along the line of what might be called indiscriminate flirtation with the opposite sex, married or unmarried—it did not matter very much which.

* I am told that this same girl met John one day on the street, after he had united with the church. He evidently had little or nothing to say to her — perhaps did not even recognize her. Then she complained to some of her acquaintances that since John had got religion he did not amount to any thing at all. He could not even be civil to his old friends when he met them on the street. May the Lord be praised that John did have sense enough, after he had been born again, to shun this evil woman as he would turn out of the way of a mad dog. Hydrophobia may bring suffering and death; but it is not to be compared in its final results with the one who poisons mind, body, and soul, and leads her victims "in the way to hell," and "down to the chambers of death."

into the church and Sunday-school and Endeavor Society went away I had some fears that John might slip back; but my fears were groundless. He held fast to his religion all the same, and stood by the new pastor. He exhorted everybody right and left to come to the "Lamb of God who taketh away the sin of the world." I wish, dear friends, I could stop right here and not tell the rest. But this story is going to have *another* chapter about going down "the way to hell." I have told you in times past that we might find heaven here on earth; and now I want to tell you it is *also* true that we may find *hell* here on earth as well as heaven. Poor John! in that one short winter he got a taste of hell that will probably cling to him and follow him through life. During that winter a bad woman or girl a little older than himself came in his way. He was from the country, as she well knew, and comparatively innocent and unsuspecting. After a brief acquaintance with this woman *he learned to swear.* Do you wonder at it? When I found him and pointed out to him the Lamb of God that taketh away the sin of the world he was in trouble. He listened to me like a drowning man catching at a straw, and, may God be praised, it was something more than a straw that I had to offer. I dare not put on paper the revelation that came to me later. While John's sin was forgiven and blotted out, the *consequences* of his wrong-doing during that one winter will probably follow him through life. He consulted a physician, but it was too late. He is now in an asylum for the insane, and the doctor thinks it is doubtful if he ever recovers his reason.* But we are praying for him, and we know that the power of Christ Jesus to "*cleanse* and save" is away beyond and above all that all the doctors of the world with all their knowledge have ever yet accomplished.

Now, my friends, can you not agree with me that God knows best when he says, "Thou shalt not commit adultery," and that the words of our text are not at all too severe when he says that "her house is the way to hell, going down to the chambers of death"?

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GREAT NAVIES TO MAINTAIN PEACE; MORE ABOUT IT—SEE PAGE 1156.

I clip the following from the Omaha *World-Herald*:

BUILD UP SCHOOLS, NOT BATTLESHIPS.

CROOKSTON, MINN, Sept. 17.—"If I had my way I would build a couple of warships less, yet one would be enough; and I would take the $5,000,000 which it would cost, and with it construct 1000 schools of agriculture in the United States," declared James J. Hill, Chairman of the Board of Direction of the Great Northern Railway, at the dedication of Stephen Hall, an agricultural institution, here to-day. Mr. Hill stated that, with the present birth-rate, the country will not be able to take care of its own people, let alone the prospect of exporting grains to Europe, unless the farmers study the science of agriculture and learn how to raise more bushels to the acre than they are able to do now.

I wish to express a hearty amen to the sentiment expressed in the above. May God help us, especially those of us who profess to be trying to live under the motto, "In God we Trust." May that same God in whom we are trusting help us to teach our children how to raise *wheat* in order to relieve the starvation that is *still* going on in this wide world, instead of building more battleships

With the banishment of saloons from the face of the earth, the need of battleships to preserve peace throughout the world will be very much lessened. I wonder if this has occurred to our good President while he is so vehement in urging the enlargement of our navy.

By the way, I wonder if it occurred to the *World-Herald* that they have Bible authority for the position they take. Look at this: "Wisdom is better than weapons of war."—Ecc. 9:18.

Here is something more on the same subject:

"WISDOM IS BETTER THAN WEAPONS OF WAR."

We take pleasure in submitting the following from the Chief Justice of the United States, which we copy from the *American Missionary:*

JUSTICE BREWER ON THE GLORY OF THE NATION.

"The glory of this nation is not in its increase in armament, but in its present course of sweet peace. Well do I know that many of our greatest thinking men contend that this nation should build up a great navy and a mammoth army in order to maintain its prominent and respectable place among the great nations of the world. I have no hesitancy in saying that our nation is making a grave mistake in its effort to build up a monster navy. It is uncalled for. We don't need it. We are 3000 miles from the nearest nation, and there is no danger of being molested."

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# HEALTH NOTES

NUTS AND APPLES.

I have several times spoken of the pleasure I experienced in having one or more apple-trees around the home, having apples that ripen from the very earliest until the very latest of the long-keeping sorts, and seeing the earlier ones get luscious right under your own eye where you can pick them daily from the trees. Well, just lately I have been having nuts from my own nut-tree. When we commenced to build our house there was a little shellbark hickory close to the kitchen door. I wanted to cut it down, but Mrs. Root said, "No, no!" Well, even after the tree got big the nuts were so small and few in number that I again suggested having it cut down. Mrs. Root said she loved that particular tree as much as if not more than any other tree on the place. Well, two or three years ago I commenced having a compost-heap (in order to prepare soil for my greenhouse) under and around this hickory-tree. I hauled sod from the roadside, and chopped them up with old well-rotted stable manure. Then I got several loads of sweepings from the streets, and cut it down and shoveled it in, and worked it over and over until I had nice potting soil for the greenhouse and for my flower-bed, and the children's and grandchildren's around their homes. This summer I placed one of the little poultry-houses, of which I showed you a picture, under this hickory-tree; and in order to test the sprouted-oats theory I leveled off my compost-heap and sowed the oats in the rich soil at intervals, letting the chickens help all they liked. The result was (or is) that the ground all around under that hickory-tree is a rich mellow compost, constantly stirred over and over by

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* Permit me to say here in this footnote that the saloon business, especially that part of it where they exhibit to boys indecent pictures, and encourage the work of bad women, has more to do in filling our insane-asylums and infirmaries than any other one thing in our nation or in the world; and may God be praised for the many signs that these places of filth and abomination will soon be banished from our land.

the chickens digging up the sprouted oats. What do you suppose happened? Well, the nuts this year are larger, finer, and earlier than ever before. In fact, they are the finest thin-shelled hickorynuts I ever got hold of. And, by the way, I saw in one of the agricultural papers that you can make any fruit-tree bear larger and finer fruit (and do it every year, without any off years) if you will just *feed* the tree and keep the ground loose and mellow all around it as far as the roots extend. The droppings from the little poultry-house are taken out every few days, and pulverized and mixed in with this spread-out compost-heap so as to grow still more thrifty and luxuriant sprouted oats.

Now, after each meal of grains and milk I go out by the doorstep and sit down in the shade with a nice light hammer, and get my nuts right from nature, without the intervention of any "middleman" for that part of my *menu*. Speaking about nature reminds me that a gray squirrel makes several trips to that hickory-tree every day, and he shells and rattles down about a dozen nuts for every one he carries off. The weather is so dry that the nuts ripen and shell out a week or two earlier than they usually do. In fact, this year they all bid fair to drop off before we get a bit of frost. It is just rare fun for the grandchildren and myself to go out every morning and gather the beautiful white-shelled nuts as they drop into the rich black compost at the foot of the tree.

Just now I believe I prefer hickorynuts to any other kind I ever got hold of — at least the nuts from this particular tree. And while so much is said about cultivating and growing pecans, why in the world does not somebody make a selection of the finest thin-shelled "shellbark" hickorynuts, and encourage and develop them, just as I am doing with this particular hickory-tree? I presume you might get a pretty good-sized hickory-tree from the forest and plant it in your dooryard. My chestnut-tree is not bearing this year, and I fear it is because I have not given it the care and cultivation I have given this particular hickory, and that, too, almost by accident. By all means have a good generous compost-heap somewhere in the back yard, and have it large enough, and stirred over often enough, so you can push any plant or tree about your home.

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### CAN NOT EAT HONEY OR APPLES.

*Dear old A. I. R.:*—As a health note, may I ask you why it is that every time I eat honey I am afflicted with a headache — almost identical with the "feel" of an ache I get from eating apples? I am fond of both, and yet can not eat either of them.

Yonkers, N. Y., Sept. 10. E. C. BISCHOFF.

My good friend Bischoff, I am under the impression that you are only one of thousands of other people who have the troubles you mention from eating either honey or apples; and by eating these together you probably have found they make a "bad combination." Now, I am not a doctor, and I shall, perhaps, be working in the dark; but the *probability* is that you do not have enough outdoor exercise, or that you are eating more than you need, and have likely been doing so for a long while, and now you have a sort of chronic fermentation of the bowels. I have been fighting the same thing for years; and when I get in pretty good trim by avoiding such things as distress me, I find I can eat a *little* honey and not produce any bad results. For instance, make an entire meal of bread and butter and honey, and, say, half a cup of milk, but do not eat more than half of what you feel inclined to eat. Break away from the table when your meal is just half over. For a while you will feel half starved, and be tempted to say you do not believe in any such doctrine; but after a while you will get over it and you may be surprised to find, when next meal time comes, you are not as hungry as usual. Now, I would not take honey again the next meal. Do not tempt your old trouble. Eat something else that agrees with you. In my case it would probably be a Hamburg steak, with just bread and butter, or, better still, rolled wheat. When you find that one small meal with honey has not brought on the headache you can try it again; but be careful. I am very fond of new maple sugar; but it almost always gives me a headache. One day when I was up in the cabin in Michigan I had nothing on hand for dinner but warm sugar and some dried bread. Now, I ate a pretty good dose of this hot maple syrup with my dry bread, just at the regular dinner hour, and I did not have any headache at all. If I take warm sugar right after a good meal, as people usually do, I have the headache sure.

Now, after you have mastered the honey business, and found you can eat it in small doses, try making a meal, say your supper, mostly of apples and bread and butter, or apples and wheat. The Battle Creek folks recommended, some years ago, that people who can not eat fruit would find that, if they made a whole meal of it, eating the fruit without sugar or any thing else, they would have no trouble; and as soon as I read the above I made a supper of baked apples — not another thing. It is true I did not feel quite satisfied; but an hour or two after my meal I felt all right, and slept unusually well. The great trouble is, we eat the honey and the apples after Nature has been pretty well satisfied; and the worst part of it is, we keep on doing it until our digestion is all out of joint, and it takes a long while to get back again. Take only a few different things at any one meal, and not too much of these few. It will not hurt you to go hungry a little while. After you find that Nature will get accustomed to the scant menu, you will feel better than you ever did before. Try it, and see if I am not right.

Now, brother B., be very careful not to put any thing into your mouth between meals except water; and particularly do not taste of an apple or of any honey. Just a very little sweet will keep this fermentation going when it once gets to be a chronic trouble. Now, as an illustration of what real health means I wish to quote once more from T. B. Terry in the *Practical Farmer*:

#### WORK A PASTIME AND LIFE A JOY

Study to toughen the body. Make it warm itself more. Every detail in this article has been followed by the writer systematically for several years. The reward is great. Many others are doing about the same. I am glad to give one delightful report from a woman who does not wear a corset at all. She lives on a farm, and tells of sleeping full time with all windows and doors open, etc., then adds: "I believe I never before got quite so near nature as I have this summer. I revel in air baths, sun baths, and cool-water baths at all possible opportunities. My clothing is loose and light. And how good all this makes me feel! What a fine thing it is to see stacks and stacks of work and

feel equal to it all! Mornings I feel something as an engine must when pressure of steam raises the safety-valve, only I can vent my strength by pushing the work, and work seems to me now like play. It is a delightful pastime." Few women work as hard as this one does. An old report from her tells a different story. Others who will live more simply and naturally can attain to this perfect degree of health which makes work a pastime and life a joy.

# HIGH-PRESSURE GARDENING

By A. I. Root

ALFALFA AND LIME.

Mr. Willis O. Wing, the great alfalfa king of Ohio, tells us in the *Ohio Farmer* that he has made a wonderful discovery in regard to alfalfa. This discovery is that alfalfa needs lime -- must have lime in the soil where it grows to perfection, and it wants more lime than any of the other clovers unless it is sweet clover. In fact, alfalfa and sweet clover grow most luxuriantly on soils that have enough lime or other alkali to kill out ordinary plants and other clovers. Your ground needs to be well underdrained for alfalfa or any thing else, and then it should be fertile. Any kind of manure suits the plant. But the underdraining and manure are not all. The main thing is lime. Use lime at the rate of even six tons to the acre, either burned or unburned, and then you can grow alfalfa anywhere; and you ought to get a ton of alfalfa hay for every ton of lime you put on the land; and after you once get the alfalfa started it is good for the rest of your lifetime—that is, with ordinary care. This matter interests bee-keepers particularly, because the same thing applies to sweet clover. Just as soon as I read it I remembered seeing sweet clover growing with such wonderful exuberance on the alkali soils around Salt Lake City, and I have repeatedly told you, as you may remember, that, after sweet clover has got a foothold, it sweetens the soil so it will grow any thing else. Both Prof. Thorne and Green, of the Ohio Experiment Station, said to me just a few days ago that the farmers of the world need to wake up to the fact that sweet clover will grow on ground too poor for any other plant; and not only that, sweet clover has the wonderful property of making poor worthless land available for any other crop. You may remember my telling about getting a fine crop of potatoes on hard yellow clay, such as is thrown out by the side of the railroad, where they made a twelve-foot cut. Sweet clover got in on this heap of poor yellow subsoil clay; and after it had grown there for several years I plowed it under and planted my potatoes; and yet there are some people even now who talk about sweet clover being a "noxious weed." Read the following extract from the article referred to:

"How much lime?" "One hundred pounds to the square rod; that is little enough," I replied. The man hesitated at that, and balked just a little. One hundred pounds to the square rod is eight tons to the acre. He put on six tons. He inoculated the soil with other soil from a good alfalfa-field. He sowed alfalfa. He got six tons to the acre the next year, and all his neighbors came to see the miracle that had been worked. That lime cost the man about $12 per acre. His six tons of alfalfa hay were worth to him at least $100 to feed his cows, so it paid him immensely, did it not?

# POULTRY DEPARTMENT

A POULTRY-HOUSE ENTIRELY OF CLOTH; POULTRY-HOUSES IN GENERAL, ESPECIALLY FOR FLORIDA AND OTHER WARM CLIMATES.

You know I have been for some time keeping poultry in Florida, without any house or structure of any kind, and I claimed that none was needed. However, when I came to separating my cockerels from the pullets I found it was a difficult matter to climb into the pine-trees and get them off from the roost. Besides, there needs to be some sort of shelter to keep your grain and other feed dry; and it is rather desirable, also, to have the nests where they will not be soaked by rain. To get the best price for our eggs we want them clean and bright; and the only way to do this is to have nice dry nests under some sort of shelter, and gather the eggs once a day or oftener. There *are* times, also, even in Florida, when the fowls would get under some kind of shelter if they could find it. While considering all of these matters lately, I have wondered a good many times if some sort of cloth tent would not answer every purpose. Perhaps some more substantial roof would need to be over the feed-bin. The whole poultry-world is now pretty well agreed on the cloth front or muslin curtain on account of ventilation.

Well, after having all of these things in mind for some time past, you can understand with what avidity my eye caught on the following, which I clipped from the *Rural New-Yorker*. In fact, I read the article over and over again. Here is the clipping:

Some readers of the *Rural* may remember that last winter the experiment was tried at Storrs College of keeping White Leghorns in a tent, such as can be bought from the Chicago mail-order houses for $6.00. August 25 I was at Storrs, and saw those same birds still living in the same tent, a handsome cock and eight hens, and, so far as I could see, not the tip of a comb on any one of them had been touched by frost. I inquired as to the egg production, and was told that the eight pullets had laid from five to six eggs a day, and sometimes eight. I looked in the tent at about 3 o'clock, and there were six eggs in the nest then. The birds are not confined to the tent, but have the full run of a grassy yard. Beef-scraps and a dry mash which is partly of cut clover are kept by them all the time. This would seem to be a wide departure from the old way of "extra-warm houses to make Leghorns profitable;" but it is in seeming only, for it was stated that "it was warmer last winter inside that tent than in any poultry-house on the place." The air was pure, the ventilation perfect. We had a temperature last winter of 4° below zero on several mornings; and that none of these Leghorns had their combs frozen was almost incredible. The only furniture in the tent, aside from the feed-boxes and drinking-fountain, was a large box about two feet high, on the flat top of which the birds roosted, no perch being provided.

After reading it I went and got Montgomery Ward & Co.'s catalog, and found that they advertise a tent made of 8-oz. duck, 7×7 ft. inside, 3 ft. high at the eaves and 7 ft. to the ridgepole, which is probably the tent alluded to in the item above. I wonder if we are to understand from the *Rural* that only eight hens and a rooster kept there inside all last winter better than in any other poultry-house on the place. If this is true, the tent was probably closed up very tight—that is, there were no openings to permit a draft. The nine fowls warmed all the air inside, and the gradual change of the air, without any draft of air, gave abundant ventilation. If this is

true, why in the world do we want any cheaper material for poultry-houses than cloth? and we certainly can not get any thing *lighter* to move about than a cloth tent. Why, I was so much taken up with the result of the above experiment that I felt a strong inclination to start right off on a trip to York State just to see that successful poultry-house made of cloth alone. Who can tell me more about it?

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ANOTHER WONDERFUL SECRET.

We clip the following advertisement from the *Woman's National Daily:*

EGGS! EGGS!! EGGS!!! Do you want plenty of eggs all winter when prices are high? Then get the Great Russian Method of feeding hens. Feed costs only 10 cents a bushel. The greatest egg-producer in the world. Send 25 cents for secret information how to make it yourself. The Russian Egg-Food Co. Agency, Box 147, New Berlin, Pa.

Who does not want eggs just as winter is coming on? Well, here goes another venture for the wonderful secret, and below is what I got for my 25 cents:

THE RUSSIAN METHOD OF FEEDING FOR EGGS.

Take one quart of oats; ½ pint each of wheat and corn; mix in in a bucket; cover with cold water for 24 hours. Then pour off the water, put the grain in a wooden box, three or four inches high, with loose bottom, to drain off superfluous water, Put grain about one inch deep in the box. Wet it every day. In a few days it will begin to sprout, and in eight days it will be ready to feed, tops being about six inches high, and the sod two or three inches thick.

Cut a piece of sod about six inches square for every twelve hens. Feed green tops and all. This furnishes green food all winter for hens, and they devour it greedily, while the grains, being soaked soft, are an excellent grain food. Place a fresh supply of grain to soak every second day.

This method makes five or six times the original amount of grain, and is the cheapest and greatest egg-producer ever tried.

THE RUSSIAN EGG-FOOD AGENCY,
New Berlin, Pa.

Very likely the above may be worth 25 cts. to a good many people who do not know any thing about sprouted grains, especially in winter, when there is a lack of green food; but after working it quite a spell I think you will find it is quite a little trouble to give it attention every day. I think the *Rural New-Yorker* (or some other periodical) says when a busy man counts his time he will find it costs about as much as to raise a crop of oats in the ordinary way. Yes, you *will* have five or six times the amount of coarse food; but how much more is it worth, to keep fowls from starving, than the grain was before it sprouted?

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# TEMPERANCE

THE UNITED STATES GETTING DOWN TO BUSINESS.

GLEANINGS IN BEE CULTURE was the first periodical on the face of the earth to announce that men can fly, and to give full proof and particulars, notwithstanding the *Scientific American* now comes out declaring *they* first announced it to the world, etc. Well, GLEANINGS was one of the first to suggest that Governor Hanley, of Indiana, should be our coming President; and every time I have heard him speak I have been more and more impressed that he is the man chosen of God, if not *just yet* chosen by the American people. In the Indianapolis *News* for Sept. 16 we find the following:

HANLEY WILL PART COMPANY WITH REPUBLICANS IF THEY JOIN BREWING INTERESTS.

MUNCIE, IND., Sept. 16.—In a speech made at Albany, Ind., yesterday, Governor Hanley made the solemn declaration that if his party joins interests with the brewing companies and saloons he will part company with it. The declaration was made before a crowd estimated at 2000, and it was vigorously applauded. Lifting his right hand, Governor Hanley said:

"So help me God, if my party comes to Indianapolis and joins hands with the brewing interests, the saloon-keepers, and the distillers, on that day I want out of it; and if your party joins hands with these same interests, you ought to walk out of it."

There! can either Taft or Bryan say as much? If not, they are not fit for the sacred office of chief magistrate of this great republic; and I am confident that the majority of the voters of this country will stand by me if they have only a fair chance. What do you think about it?

On page 1086, Sept. 1, we said that President Roosevelt, at least some time in his life, gave utterance to a sentiment that comes pretty near Hanley's present declaration. The question is, "Can President Roosevelt right now in the present crisis indorse and subscribe to the quotation on the page referred to above?"

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UNCLE JOE CANNON; HIS PROFANITY, OPPOSITION TO TEMPERANCE REFORMS, ETC.

A year ago or more, in talking with Superintendent Baker, of the Anti-saloon League, I told him I thought it was a burning shame that such a man as Cannon should be permitted any longer to occupy so important a position so near the head of our government. Baker replied that, while he agreed with me, we should bear in mind that, just at present, the Anti-saloon League was fighting the saloon, and not blasphemy in particular. Since then we have had proof again and again of the way in which "Uncle Joe" has sidetracked our temperance laws, to say nothing of parcels post and postal savings banks. Meanwhile the Methodist Church has come to our aid. See the following, which I clip from the Woman's National Daily:

DENOUNCE CANNON'S PROFANITY.

At the closing session of the Rock River Methodist conference Speaker Joe Cannon was roundly denounced for using "unequaled profanity" and opposing temperance legislation. Rev. J. K. Shields, superintendent of the Anti-saloon League, said: "What is Joe Cannon? Just a few days ago I met a young lawyer whom we had sent down into the State to talk temperance. He told me that he had met Uncle Joe in a car, and had ridden with him for quite a while; and when I asked him for the impression that Uncle Joe had made, he said: 'Shields, I have heard vileness from the mouths of many men; but the profanity that streamed from the lips of Joe Cannon I never heard equaled.'"

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SHALL OUR BOYS BE ENCOURAGED IN THE USE OF GUNS?

We clip the following from *Our Dumb Animals;* and we will only add that we are in hearty agreement with the sentiment of the clipping:

BOYS' BRIGADES.

A friend, calling on us the other evening, said he met a Sunday-school boy belonging to one of the Boys' Brigades, holding a gun. He remonstrated with the boy in regard to the shooting of birds: but the boy at once replied, "President Roosevelt does it," as though that were conclusive on the subject. Now, we have thought that President Roosevelt's proposed visit to Africa to shoot, wound, and kill animals he may find there would be less harmful than some other things. But the newspapers are now staring that he is to receive an enormous price from some publishing firm for writing an account of all his shootings, which may get a circulation of millions among American schoolboys, and stimulate in them all an ambition to use army rifles and follow the example of their distinguished adviser. We have no doubt if Roosevelt does this it will bring to him personally a large amount of money; but what the effect will be on millions of schoolboys in America is another and far more important consideration.

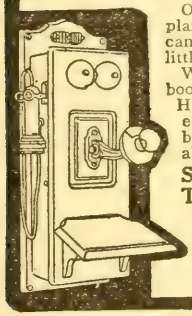
# Let Us Tell You How the Farm Telephone Pays

## These Three Books

which we will send you free, explain why a Telephone on the Farm is a good investment. How it saves time, money and labor. How you and your neighbors may install the finest system there is, at reasonable cost, just as hundreds of thousands of other progressive farmers have

## Stromberg - Carlson Independent Telephone

equipments are to the farm what the railroad train and the trolley car are to transportation.



Our directions are so plain and simple that you can put up a line with little effort.

Write today for our free book, "How the Telephone Helps the Farmer." 21st edition, and two other books telling you all about it.

**Stromberg - Carlson Telephone Mfg. Co.**
**Rochester, N. Y.**
**Chicago Ill. Kansas City Mo.**
(Address nearest office)



# CALIFORNIA CHRISTMAS-BOX Direct to You

or to any point in the country on your order.

**25 lbs. Dried Fruit, 12 Cans Canned Fruit, 1-2 gal. Honey, and 8 lbs. Nuts**

Guaranteed first-class and all this year's crop. Dried Fruit put up in 2-lb. cartons

**THIS BOX COSTS $7.50**

## WE PAY the FREIGHT

**Two of Our Regular Assortments**

50 lbs. Dried Fruit, 6 kinds, packed in 2-lb. cartons, $6.00 box.

Canned Fruit Assortment—Fancy Fruit put up in heavy cane syrup, 24 cans, 5 kinds, $4.75.

Combination—50 lbs. Dried Fruit, 2 doz. cans Fruit, all for $10.50.

We pay the freight.

Write for price list of all assortments. Also Three-colored Souvenir Post-cards Free.

*References: First National Bank, Colton, California.*

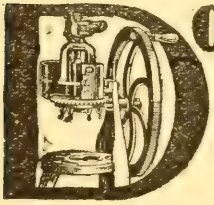
**California Fruit Products Co.**
**Avenue I, COLTON, CALIFORNIA.**

**Mend Your Own HARNESS**

Put the money you would pay the repair man in your own pocket and use Myers Lock Stitch Awl instead. It stitches like a sewing machine and will mend harness, saddles, fur coats, robes, shoes, gloves, canvas, carpets, etc. Something you and your neighbors need every day and costs only $1.00 prepaid. You can secure the agency in your locality and make money. One agent sold 100 in 4 days. Write for booklet.

**C. A. MYERS CO.**
**6537 Woodlawn Ave., Chicago, Ill.**





# DOUBLE YOUR EGG YIELD

Fresh, raw, green bone contains over four times as much "protein" and other egg-making materials, as grain. It takes the place of worms and bugs in fowls' diet; **that's why it gives more eggs**—greater fertility—stronger chicks—earlier broilers and layers—larger market fowls, and bigger profits. You can cut it most easily, rapidly and best with

**Mann's Latest Model BONE CUTTER**

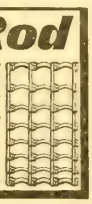
Automatically adapts cutting to your strength. Never clogs. Cuts all adhering meat and gristle. We send it on **10 DAYS FREE TRIAL. No money in advance.** Catalogue free.

**F. W. MANN CO., Box 37, Milford, Mass.**



# 15 Cents a Rod

For a 22-inch Hog Fence; 16c for 26-inch; 19c for 31-inch; 22 1-2c for 34-inch; 27c for a 47-inch Farm Fence. 50-inch Poultry Fence 37c. Lowest prices ever made. **Sold on 30 days trial.** Catalog free. Write for it today.



**KITSELMAN BROS.,**
**Box 21, MUNCIE, IND.**

# The Rochester Radiator will

**SAVE HALF YOUR FUEL** or give you double the amount of heat from the same fuel, if you will give it a trial, or we will refund the money paid for it. Write for Booklet on heating homes.

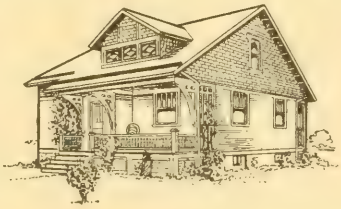
Prices from $2 to $12

For hard or Soft Coal wood or gas

Fits any Stove or Furnace

**ROCHESTER RADIATOR CO.,**
**50 Furnace St., Rochester, N.Y.**

# BUILD AT HALF PRICE



## Hundreds of Dollars Saved on Your New House

### By Buying Material Direct from the Mills of Gordon, Van Tine Co.

LET US SAVE YOU HUNDREDS OF DOLLARS on the cost of your new house. We will sell at **50 per cent below retail prices** all the Lumber and Millwork, including Joists, Studding, Rafters, Sheathing, Shingles, Flooring, Lath, Inside Finish, Doors, Windows, Mouldings, Frames, Stair Work, Porch Work, etc., used in building the house. Hundreds of homes in all parts of the United States have been built at **half price** from Gordon-Van Tine building materials. Our **Cut Prices** have saved thousands upon thousands of dollars to the home-owners of America. If you are going to build a House, Barn, Store, Factory, Shed, Poultry-house, Granary—any kind of building—we will furnish every thing at half the usual price.

## MILLWORK AND BUILDING MATERIAL 50 PER CENT BELOW RETAILERS' PRICES!

Our Cut-price Buzzsaw is humming. It cuts through every thing. The Gordon, Van Tine Co. is the largest independent Millwork and Building Material concern in the United States. We can not be bound by the "trade agreements" that have kept prices at the top notch for ten years. In our great warehouses we carry mammoth stocks of Lumber, Millwork, Roofing, etc., for **quick shipment**, at **Cut Prices.** Our Millwork is guaranteed up to the high standard adopted by the Sash, Door, and Blind Manufacturers' Association of the Northwest. Our Lumber is bright, fresh, well manufactured, and guaranteed to conform to the established grading-rules. We do not sell "wreckage." We agree to refund money and pay freight both ways if goods are not exactly as represented.

## FREE GRAND MILLWORK CATALOG of 5000 Bargains for Home Builders FREE

Our latest and greatest catalog is now ready for free distribution! Gives complete descriptions and accurate pictures (many in full colors) of every thing we manufacture and sell. Shows all the new creations in Millwork styles! Startling reductions in prices! Full of valuable information for builders! Money-saving offers on every page! We send it free, postpaid! Write for it and build at Half Price.

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| **Including—** | **Inside Finish** | **Porch Work** | **Joists** | **Grille Work** |
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CHAS. A. GREEN, Editor.

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**Earn a New $500.00 Piano**
**Earn a $50 Marlin Rifle**
**Earn a $12 Internat'l Dictionary**
**Earn 100 Peach Trees**
**Earn 100 Plum Trees**

*NOTE—We offer these and other prizes besides our regular cash commission.*

Send us no money. Simply send us your name and address and we will send you our confidential terms to canvassers, stating how you may obtain valuable prizes FREE for a little work introducing Green's Fruit Grower in your neighborhood.

USE THIS COUPON

*Green's Fruit Grower Co., Rochester, N. Y.*

Gentlemen—send me Green's Free Agent's Outfit, consisting of 3 different issues of Green's Fruit Grower and your confidential terms to canvassers stating how I may obtain hundreds of dollars in prizes and cash pay for a little work introducing Green's Fruit Grower in my own neighborhood.

Name .....

Town..... .....State.....

(Green's Fruit Grower, Rochester, N. Y.)

## Why Do You Remain

in a section where the climatic conditions are so against you, where it is necessary to battle with the rigors of a long winter?

## Wouldn't You Like

to be permitted to carry on work out-of-doors throughout the entire year? A location in our southern territory offers many opportunities and advantages, and makes life a pleasure the year round. The lands can be obtained at reasonable prices, they are equally as productive as yours, prices as good, if not better, for your crops, and no long winters of ice and snow to contend with.

## The Seaboard Air Line Railway

through its Industrial Department, is anxious to assist you in bettering your present condition. Literature will be sent free upon request. Ask for copy of "FRUIT AND VEGETABLE GROWING" in the Land of Manatee, written by a western man, containing descriptive data, pro ts derived from various crops, etc.

## Special Rates

**November 24th**

The lowest rate ever offered for the benefit of prospectors and homeseekers will be in effect from certain points on Nov. 24th. Let us help you take advantage of this opportunity to make a trip of investigation at very little cost. Write for full particulars.

**J. W WHITE**
**General Industrial Agent**
**SEABOARD AIR LINE RAILWAY**
**Portsmouth, Va.**
**Dept. F**

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**Seeds, Bulbs, Roses, Shrubs, Vines, Mail-Size Trees, Etc.**

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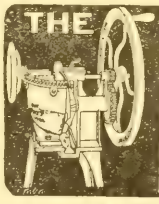
**THE STORRS & HARRISON CO.**
**Box 4, Painesville, Ohio.**



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**GREEN BONE and VEGETABLE CUTTER**
will save half your feed bills and double egg yield. Guaranteed to cut more bone, in less time, with less labor, than any other. Send for Special Trial Offer and handsome catalogue.
**HUMPHREY,**
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## FIX YOUR ROOF

**5c Per Square.**—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

**Roof-Fix** **The Perfect Roof Preserver,** makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our **free roofing book** tells all about it. Write for it today.
**The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.**

**MICHIGAN LAND** for fruit, stock, and diversified farming. Write S. S. Thorpe, 10 McMullen Bldg., Cadillac, Mich.

UDO TOEPPERWEIN W. M. MAYFIELD

# THE BEE-KEEPERS' Headquarters for the Southwest

**Texas** **Old Mexico** **New Mexico**

WE NOW HAVE ON HAND
**AN IMMENSE STOCK OF HONEY-CANS**
(13,000 cases)

## Weed's New-process Foundation

We make it right here from a new set of machinery. At present our factory is running nights, as well as in daytime, to keep up with orders. Still we can take immediate care of your order when it comes, as you certainly want the best. Keep out of trouble and get the very best foundation money can buy. We have it here—made in San Antonio.

## Plenty of Shipping-cases

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| 12-in. 4-row shipping-cases with 3-in. glass | $17.00 per 100 |
| 9¼-in. 4-row shipping-cases with 3-in. glass | 15.00 per 100 |
| 10-in. 2-row shipping-cases with 3-in. glass | 9.35 per 100 |
| 6¼-in. 3-row shipping-cases with 3-in. glass | 9.80 per 100 |
| 7⅛-in. 3 row shipping-cases with 3-in. glass | 10.70 per 100 |

## A large warehouse of Root's Bee-supplies

Sold at Root's factory prices. Write us with regard to your wants. Catalog for the asking. If you have mislaid it, send for another.

## Honey and Beeswax Wanted

We are always in the market for honey and beeswax in large or small lots. Beeswax, 25 cts. cash; in trade, 28 cts.

Whenever you are in San Antonio make our office your office, and let us show you through our plant. Stay here awhile and meet the bee-keepers as they come in. You are always welcome and will be courteously treated.

**TOEPPERWEIN & MAYFIELD**
1322 SOUTH FLORES ST. SAN ANTONIO, TEXAS

# WHAT'S THE USE

## OF HAVING FINE HONEY IF IT IS IN POOR PACKAGES?

If you are among the fortunate ones who have secured a good crop of honey, surely you will not be so unbusinesslike as to sell it in second-hand or inferior cases. Your honey will sell far easier in nice new cases or tins. WE HAVE THEM.

**John Nebel & Son Supply Co., High Hill, Mont. Co., Mo.**

**1884** **1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens.

**J. M. Jenkins**

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**SAVE EXPRESS!**
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**SAVE TIME!**
by ordering your supplies in **...Boston**

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**

FOR SALE.—It will pay to get our special proposition
A. G. WOODMAN & CO., Grand Rapids, Mich.

# THE LORE OF THE HONEY-BEE

BY
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SETTING aside the many popular technical treatises on bee-keeping, there is at present no work by a modern English writer dealing with this fascinating subject, from the literary and antiquarian, as well as the scientific point of view. Succinctly, **The Lore of the Honey-Bee** is a history of bees and their masters from the very earliest times down to the present. The wonderful communal life within the hive is touched on in all its varying aspects; and the reader is introduced to a class of men from all ages as quaintly original as their calling is inimitably picturesque. The book covers the whole field of ascertained facts in the natural history of the honey-bee, as well as the romance of beemanship past and present; and nothing better could be put in the hands of the beginner in apiculture, no less than in those of the advanced student of what is probably the oldest human occupation under the sun.

Price $2.00 postpaid

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## BRYAN OR TAFT

Handsomest Campaign Badge you have ever seen. You may have it FREE with our compliments. This fob is made of a fine grade of seal grained Russia leather, nickeled buckle, beautiful mother-of-pearl shield, containing a photo of your favorite candidate, either Bryan or Taft. It is guaranteed to be just as we describe it and you will be proud to wear it. We are giving away these handsome fobs to get acquainted with you and to get you acquainted with our splendid and instructive farm paper, "FARM AND STOCK," an up-to-date magazine devoted mainly to corn and live stock. The Watch Fob and a three months' trial subscription given you absolutely free on receipt of 10 cents in coin or stamps to pay for mailing. We will also send you our liberal proposition whereby you can secure other handsome premiums free by giving away several of these fobs to your neighbors. You are sure to be delighted with both fob and paper, so send 10c at once while they last to

**FARM AND STOCK**

**Box 307, St. Joseph, Missouri**

# FASHION BOOK FREE!

I want to send you my handsome new book showing hundreds of latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

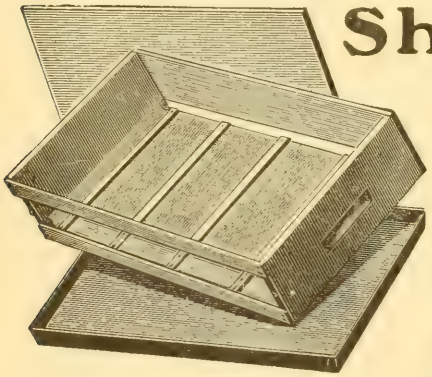
## HOW I DO IT.

I publish the **FARMER'S CALL, a weekly** paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for Women folks, is its fashions in which I show the **5c patterns.** Let me help you to save money.

## MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week** (over 1000 pages) **for one year** and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts because I buy them by the thousand and don't make any profit. I don't want the profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY!

**JOHN M. STAHL,** Dept. G, **QUINCY, ILL.**



# Shipping-cases

for any number or size of sections desired. These cases are made of fine white basswood, and the workmanship is first class. Owing to the shortage in the honey crop last year we have a good stock on hand and can make immediate shipment.

Twelve-inch case, with follower, to hold 24; or eight-inch case, with follower, to hold twelve beeway sections, shipped when no size is mentioned. All cases single tier unless otherwise ordered.

## Honey-packages in Tin.

Standard packages for storing and shipping extracted honey. Less chance for leakage or taint from wood; being square they economize space. Five-gallon cans boxed two or one in a box; gallon cans 10, ½-gallon cans 12 to box. Five, one, or ½ gallon cans not boxed if desired. Prices on application for any quantity.

Place your order now; prices and prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY COMPANY**
**123 Nicollet Island, Minneapolis, Minn.**

Oldest Bee-paper in America

# This Coupon Worth 35 cents

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(*New Subscribers Only*)

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If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

**AMERICAN BEE JOURNAL**

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

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If you will send us your name and address with 40 cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

**American Bee Journal, 118 West Jackson, Chicago, Illinois**

# QUEENS

And nothing but Italians. An improved superior strain is what QUIRIN-THE-QUEEN-BREEDER raises. Stock is Northern-bred and hardy—not a single colony lost during the past winter; have five yards, all wintered on summer stands. Am now taking off supers of nice white-capped clover honey. Prices of bees and queens as per below:

| Prices of Queens after July 1. | 1 | 6 | 12 |
|---|---|---|---|
| Select queens | $ 75 | $4 00 | $ 7 00 |
| Tested queens | 1 00 | 5 00 | 9 00 |
| Select tested queens | 1 50 | 8 00 | 15 00 |
| Breeders | 3 00 | 15 00 | |
| Straight five-band breeders | 5 00 | | |

**All queens now go by return mail.** Safe arrival and pure mating guaranteed. We employ 400 to 500 swarms. Can furnish bees on L. or Danz. frames. Add price of whatever queen is wanted to nuclei or colony. No order too large, and none too small. Over 20 years a queen-breeder. Address all orders to

**Hurry in your orders as this is the last time this ad. will appear for this season.**

**QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.**

# 5000 QUEENS

of the famous 3-banded LONG-TONGUE RED-CLOVER STRAIN OF ITALIAN BEES is what I want to sell this season.

My bees GATHER HONEY if there is any to get; ARE LITTLE inclined to swarm and sting, they please such people as The A. I. Root Co., R. F. Holtermann, W. Z. Hutchinson, Morley Pettit, etc., and if they don't please you, send in your kick.

Queens of all grades now ready.

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested queens | $1.00 | $5.00 | $9.00 |
| Select untested queens | 1.25 | 6.00 | 11.00 |
| Tested queens | 1.50 | 8.00 | 15.00 |
| Select tested queens | 2.00 | 11.00 | 20.00 |

Breeders. $5.00 to $7.00.

**W. O. VICTOR (Queen Specialist), Hondo, Tex.**

# NOW IS THE TIME

to buy your queens for fall increase. I can mail promptly young vigorous queens—Italian, Carniolan, Banat, and golden. Prices, untested, 75 cts.; $8.00 per dozen; tested, $1.25 each; $12.00 per dozen.

Circular free.

**Grant Anderson, Sabinal, Tex.**

**Long-tongued**

# Red-clover Queens

**Bred by their Originator**

Do you want to get some specimen queens of the world-famous red-clover stock of Italian bees? Then buy from me, because I am the originator, and surely ought to know how to breed them in their purity. When you get them from me you know you have the real strain. For years I have devoted time and skill to this stock, trying to reach perfection. I can submit many splendid testimonials in favor of this stock to show my work has not been in vain. Try them, and YOU will be pleased also. I endeavor to please the practical man looking for definite results in dollars and cents. Many years' experience as head apiarist of The A. I. Root Co. enables me to fill the most exacting order with complete satisfaction to the purchaser Let me show you how well I can please you.

**Prices**

| | | 1 | 6 |
|---|---|---|---|
| Untested queen | Before October 30, | $1 00 | $ 5 00 |
| Select untested queen | " | 1 25 | 6 00 |
| Tested queen | " | 2 00 | 10 00 |
| Select tested queen | " | 3 00 | 15 00 |
| Breeding queen | " | 5 00 | |
| Select breeding queens | " | 7 50 | |
| Extra select " 1 yr. old | " | 10 00 | |

**F. J. Wardell**

**Uhrichsville, Ohio, U. S. A.**

# 25 PER CENT REDUCTION.

Here is your chance to save money and get a lot of the best queens cheap.

Introduce LAWS queens this fall and thus insure a full crop of honey the coming season.

LAWS queens are sent everywhere, and everywhere there are words of praise for them.

One firm alone has bought over three thousand of the Laws queens during the past six seasons.

Deduct 25 per cent from the following prices; remit the balance, and your order will have prompt attention.

Single queen, $1.00; six for $5 00; dozen for $10.00.

**W H. LAWS, Beeville, Bee Co., Texas**

# Wax Craft

By T. W. COWAN

We are now in position to take orders for the above book. It is elegantly bound and beautifully printed. See review by W. K. Morrison in last issue.

Price $1.00 postpaid anywhere.

THE A. I. ROOT CO., Medina, O.

# PATENTS.

**Twenty-five Years' Practice.**

**CHARLES J. WILLIAMSON,**

**Second Nat'l Bank Bldg., Washington, D. C.**

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

FOR SALE.—To reduce stock I offer for sale as follows; 26 cases of stock No. 40, and 40 cases of stock No. 44 at $10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries; being extracted from select all-sealed upper stories. A third of a century's experience in the production of fine extracted honey. Ask for my little circular "A Word about Extracted Honey;" this will explain why it pays to buy this delicious stock.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—150 cases of No. 1 comb honey, 15 sections in 3-inch glass, no-drip cases, 6 cases in a crate, very fine, at $2.00 per case, f. o. b. cars here. Also 8000 lbs. clover and basswood extracted, in new 60-lb. cans, 2 in case, very heavy body and fine flavor, at 8c, f. o. b. cars here. Sample free. Also extracted in 1-lb. Simplex jars, at $2.00 per dozen.
W. H. TOWNSEND, Hubbardston, Mich.

LISTEN!—The two cases of honey are received, and I am greatly pleased with it. I don't think I ever saw finer honey in my life. E. W. PEIRCE, Zanesville, Ohio.
You will be just as well pleased with your honey as Mr. Peirce if you send your order to JAY SMITH, of North Adams, Mich. One 60-lb. can, 8½ cts.; two 60-lb. cans, 8¼ cts. For larger orders write for prices. Sample free.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 8c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Clover and basswood extracted honey in new 60-lb. cans, two in case, at 7 cts.; in second-hand cans, ¼ cent less. Also light amber fall honey from heartsease and aster, at ½ ct. less the above prices if 10 cases or more are taken. Also Fancy and No. 1 comb. PETER J. NORBERG,
Spring Valley, Ill.

FOR SALE.—2000 lbs. of fancy extracted honey—clover and a little basswood mixed; thoroughly ripened on the hives; is thick, rich, and delicate in flavor. Put up in new 60-lb. cans; 2 in a case, cases iron-bound. Price, 9 cents per lb. Sample 10 cts.
JOS. HENKE, Port Washington, Wis.

FOR SALE.—Comb honey, amber, buckwheat, and No. 2 white, at $2.75 per case of 24 sections; in 25-case lots, 5 per cent off; light amber extracted (three-fourths clover), in 60-lb. cans, two to case, at 8 cts. QUIRIN-THE-QUEEN-BREEDER,
Bellevue, Ohio.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan, Ky.

FOR SALE.—I have some extracted honey, well-ripened, fine, clover and basswood, in new five-gallon round cans, at $5.50 a can; sample free; delivered f. o. b. cars here; ought to suit anybody. MATHILDE CANDLER, Cassville, Wis.

FOR SALE.—Choice extracted white-clover honey for table use, of fine flavor, thick, and well-ripened, in 60-lb. cans, at 9½ cts. per lb., F. O. B. Falmouth.
FRED C. FROST, Falmouth, Rt. 2, Ky.

FOR SALE.—Choice white-clover extracted honey. Ripened on the hives; extracted four to six weeks after it was gathered. Put up in new 60-lb. cans, or in any shape desired. Sample free.
J. F. MOORE, Tiffin, Ohio.

FOR SALE.—Fancy clover and also buckwheat extracted honey in new cans, two in a case. Send 10 cts. for sample, which may be deducted from first order. EARL RULISON, Rt.1, Amsterdam, N.Y.

FOR SALE.—Honey, clover, or buckwheat, comb or extracted. Write for price. Sample of clover extracted free. State quantity and quality desired. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Choice extracted honey, mostly clover and raspberry mixed; also light buckwheat. Price on application. Sample 10 cents. JAMES MCNEILL, Hudson, N. Y

FOR SALE —8 tons of raspberry and basswood extracted honey, thick and very fine flavor, in new 60-lb. cans, 2 in case, at 7½ cts., f. o. b. cars here.
J. N. HARRIS, Mancelona, Mich.

FOR SALE.—2½ tons clover, also light amber; new crop, ripened on hives, new 60-lb. tins; 8½ to 10, f. o. b. Sample 10 cts.
E. L. PRATT, Queen-breeder, Swarthmore, Pa.

FOR SALE.—Well-ripened clover and buckwheat honey, in small or large packages; ask for sample and what you want.
D. H. COGGSHALL, Groton, N. Y.

FOR SALE.—Fine extracted honey, 25-lb. cans up to barrels.
JULIUS GENTZ, Shawano, Wis.

FOR SALE.—Fancy and No. 1 white-clover comb honey,
ANTON G. ANDERSON, Holden, Mo.

## Honey and Wax Wanted

Will pay 7c per lb. for gilt-edged white clover, raspberry, or basswood honey, in new 60-lb. cans f. o. b. here; and 12½, 11½, and 10½ cts. respectively for the first three grades of white clover separatored honey. Chicago suburb.
B. WALKER, Clyde, Cook Co., Ill.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

## Wants and Exchanges

SWAP.—Scholarship I. C. S., transfer value $65.00, for poultry, incubator brooders, or Shetland pony and rig, and pay difference.
GEORGE WANSER, Cranford, N. J.

WANTED.—Refuse from wax-extractors and old comb for cash
ARCHIE COGGSHALL, Groton, N. Y.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo, N. Y.

WANTED.—Bees in Southern California. Give price, location, and all particulars. Address
BEEMAN, 144 West Green St., Pasadena, Cal.

WANTED.—Bees. Spot cash prices. All letters answered
F. B. CAVANAGH, Springport, Mich.

## Help Wanted

WANTED.—Capable man 30 to 40 years of age, married, to take charge of small farm in Ohio. State experience, salary wanted, date could begin, and give names of references. Address JOHN SMITH, Gleanings in Bee Culture, Medina, O.

WANTED.—Young man to learn the poultry business, one willing to work; not much work outside of the poultry part of it. Write at once. HOUSE ROCK POULTRY FARM,
East Weymouth, Mass.

## Situations Wanted

WANTED.—Position in South. Have farm and apiarian experience. Florida preferred. F. H. CRARY,
Charles City, Iowa.

## Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

FOR SALE.—Delaware farm, public road; good buildings, good water; fruit, wood; rural delivery; school, churches, stores, mills, railroad depot, canneries, blacksmith shops, all convenient; an ideal place for bees, poultry, fruit, and trucking.
L. A. LUDWIG, Marydel, Md.

FOR SALE.—Small homestead, first-class buildings, fully equipped apiary, in one of the most desirable locations to be found; will sell for less than the improvements can be replaced for. This was the home and the apiary of the late B. Taylor at Preston. Write for particulars. ALF.A.ZIEMER,Waltham,Minn.

FOR SALE.—California foothill ranch, San Diego Co., 160 acres, twenty-five in cultivation; house and barn; three acres orchard; 100 hives of bees; one span of horses; bee material and farming tools, $1800.
AUSTIN E. WHITE, Fallbrook, California.

FOR SALE.—Excellent location for apiary in the white-clover belt of Northern Wisconsin. Basswood, goldenrod, dandelion, and willow, abundant; 8½ acres, dwelling, telephone, R. F. D. Clear title. Price $800, half cash, balance one and two years time on secured notes. ARNT ARNESON,
R. 5. Rice Lake, Barron Co., Wis.

FOR SALE.—Fine poultry and bee farm of twelve acres. Fine home, close to good town. No matter what you have looked at, investigate this. Address BOX 106, West Alexandria, Ohio.

FOR SALE.—Land in the Uvalde honey-belt, by the Asherton Land and Townsite Co., at $15 to $40 an acre.
E. A. ARMSTRONG, Ag't, Carrizo Springs, Tex.

## For Sale

FOR SALE.—Tasmanian necklace shells, any quantity. Sample sent. G. H. SMITH, Ramsgate, Tasmania.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Blackwalnut timber. Twenty standing trees. Write Box 51. R. & W. BINKERD, West Monterey, Pa.

FOR SALE.—Boiler and engine, 2 horse, $60.00, in good working order. J. W. UTTER, Amity, Orange Co., N. Y.

FOR SALE.—Shipping-cases, the no-drip kind; overstocked; get our special prices. A. G. WOODMAN CO.,
Grand Rapids, Mich.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Indian Runner ducks, great layers, cheaper than ever, $2.00 each; $3.50 per pair, $5.00 per trio. Circular free.
KENT JENNINGS, Mt. Gilead, Ohio.

## Bees and Queens

FOR SALE.—Bees, Carniolans and Italians, in new Danz. hives, very cheap. F. SAMPSON, Huntington, Mass.

FOR SALE.—First-class apiary of 150 colonies, fixtures and supplies; 45 are in Danz. hives; balance in Dovetailed. Good condition; no disease. Will sell very reasonable in lots to suit. For particulars write W. F. STUART, Ottawa, Kansas.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. RAILS, Orange, Cal.

FOR SALE.—250 colonies of bees in ten-frame hives at $2.75 per colony; no disease; fixtures for comb and extracted honey cheap; also 22 acres of land; first-class buildings, and improvements. If not sold by Jan. 1 a reliable man is wanted to rent or run bees and farm on shares. J. H. ZEINER, Bard, Ark.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall.
A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.—Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

# SPECIAL NOTICES

## By Our Business Manager

WANTED—SEED OF THE SIMPSON HONEY-PLANT, OR FIGWORT.

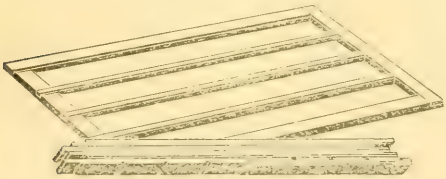
We have just now sold out, and our new seed is hardly ripe; and, even if it were, we have not enough to go around. If any of the friends have any of the seed in stock, or can collect it for us, we shall be very glad to hear from them. Please mail us samples, tell us how much you have, and what you want for it.

WAX CRAFT.

The number of orders received for this book have been so large that we are obliged to report some little delay in mailing the same, and to beg the indulgence of our customers in this respect. We are rapidly catching up on orders, and trust this note will explain the delays in the receipt of the same. That the book is well thought of is shown by the large number of orders received for it. The price, as will be recalled, is $1.00 postpaid.

HONEY-LABELS.

We have never enjoyed a larger trade in honey-labels than during the present season, and for the most part we have been able to fill all orders very promptly indeed, often getting them out within twenty-four hours from the time received here. On some labels for which we do not have many calls there has been rather more delay, for the low prices we make are possible only when several orders for the same label are printed at the same time. It is, therefore, our practice to accumulate several orders for the same label; and because of this the first orders in after one printing is done have to be held several days before another printing is made of the same order. This will explain to our label customers the little delays that sometimes ensue on certain label orders.



COLD-FRAME SASH.

As cold weather approaches, truck-gardeners are making plans for protection to the plants. We are prepared to furnish not only the regular cold-frame sash, 3 ft. 4 in. by 6 ft., but we also make special sash to order. The regular sash are usually shipped knocked down. Price 90 cts. each; 5, $4.75; $8.00 for 10. If put up, 10 cts. each extra, without paints; add 10 cts. for each coat of paint and $1.00 for glazing, making the sash complete, with glass and two coats of paint, $2.10 each. Our sash are made of cypress, 1⅞ thick, and as regularly furnished they are grooved for glass to be butted together. If preferred we also rabbet the bars so glass can be lapped and set in putty. Regular sash take four rows of 8x10 glass. We make on order other styles and sizes. Enquiries and orders solicited.

## Convention Notices.

BEE-KEEPERS' CONVENTION AT YORK, PA.

The Pennsylvania State Bee-keepers' Association will hold its annual convention at York, in the Court house, on Thursday and Friday, November 12 and 13. The program is not completed; but as it now stands it may be announced to begin at 1:30 P. M., Thursday, with an evening session; and two sessions Friday forenoon and afternoon. Dr. E. F. Phillips will speak on one or both of the following subjects: A general discussion of apiculture in the United States, and the treatment of bee diseases. Professor Surface will speak on hay and honey-plants. Mr E. R. Root will be present, and will probably speak on some phase of bee-keeping. A. F. SATTERTHWAIT, Sec.

PANHANDLE BEE-KEEPERS' CONVENTION.

The Panhandle Bee-keepers' Association will meet in Knights of the Golden Eagle Hall, corner 38th Street and Jacob Street, Wheeling, West Virginia, on Monday, Nov. 16.

Blaine, Ohio. W. L. KINSEY, Sec.

# Special Notices by A. I. Root

THE "CHURNLESS-BUTTER PROCESS.

We are pained to see in the *Farm and Ranch* and several other agricultural papers a full-page advertisement of a secret process of making butter in one minute without a churn or any other machinery. The operation is so easy that any child can work it. Butter of the highest grade is made in this way, and with no hard work. Family rights are sold at $5.00; but the periodicals giving place to the advertisement usually offer to send their journals for several years for a much smaller sum than the $5.00, and "fling in" the "$5.00 secret." At the present writing I am not able to give our readers the inside of the wonderful process, but we hope to do so soon. The whole get-up has the earmarks of the seedless apple and the Miracle wheat. If I am making a mistake I will gladly apologize to the "Churnless Process Butter Company."

Some time ago the *Rural New-Yorker* published what is probably the above secret, and the editor tells me in a private letter that the great discovery is "older than some of the hills" at any rate. Friend Collingwood adds the following:

*Dear Mr. Root:*—I regard it as a great shame that some of our agricultural papers should act as they do about these humbugs. I noticed something first in the *Texas Farm and Ranch*, and then in a Chicago paper, *The Farmer's Voice.*

I sometimes wonder how it is that these humbugs and frauds are able to prosper as they do. Not a day passes that I do not hear of some new one that is being launched upon the market or else is being trained for the race.

New York, Oct. 2. H. W. COLLINGWOOD.

NAVIGATING THE AIR.

Since my remarks in the last issue, Mr. Wilbur Wright has not only carried a bag of sand, but he has carried several passengers, and one of them a lady. Yes, Queen Marguerite, of Italy, has *witnessed* his flight, and had quite a talk with Mr. Wright. And now the papers tell us she is begging to take a trip with him in his machine; but the people protest, and I believe my good friend Wilbur objects—at least I hope so. God forbid that President Roosevelt or any other important personage should take any unnecessary risk at this stage of the proceedings. I admire the courage and bravery of both our President and Queen Marguerite; but I do not think they really have the right to risk their lives unnecessarily. What I mean is, that many good innocent people might suffer if these dignitaries were removed from their important duties by sudden accident. Our good friend Wilbur has also succeeded in remaining up in the air over an hour with a passenger, and we are told he has been granted the $100,000. It rejoices my heart to hear of this complete success; for these two young men have worked hard and faithfully for many years. They have been so careful at every stage of proceedings, that, even after having made hundreds of flights, no accident occurred until the fatal one of September 17. And, by the way, I am told that Orville's broken bone is knitting nicely, and that it will probably very soon be as good as ever. It has been suggested in the papers that Wilbur might undertake to cross the English Channel. With favorable wind he could make the trip in about forty minutes. But I want to protest again against any unnecessary risks. While sailing over land, if any accident happens the machine can glide down and *probably* be managed so it will alight in a favorable spot. Before making voyages across the water, a boat (or several of them) should be provided, and a series of experiments made, with plenty of help at hand, in dropping into the water and starting up again out of it. When they can do this we are ready to cross the channel, and, may be some time in the future, cross the great ocean. I have made mention of President Roosevelt and the queen of Italy; but would it be extravagant to say that *Wilbur Wright* just now is worth more to the world than *any* president, king, or queen? May God help both of these to continue to exercise the care and caution they have been showing since they commenced their work.

We find a notice in the *Woman's National Daily* to the effect that Wilbur made a short trip with half a dozen passengers. I think this must be a misprint or a mistake in some way; for their present equipment could not possibly carry more than two people besides the operator, and these two people would have to be very light.

# BOOKS FOR BEE-KEEPERS

## The Swarthmore Library.

A series of booklets on bee subjects by E. L. Pratt, of Pennsylvania, known to the bee-keeping world as "Swarthmore." These books are full of the most valuable information. The Swarthmore method of queen-rearing is spoken of as the most important innovation in bee-keeping of recent years:

INCREASE. The first of the series. Any one desiring to enlarge his apiary should learn the Swarthmore way. Price, postpaid, 25 cts. French edition, entitled "Accroissement," 50 cts. postpaid.

BABY NUCLEI. The using of little frames and a handful of bees for mating queens has created quite a stir in the queen-rearing business. From this booklet you get your information direct. Price, postpaid, 25 cts. French edition, entitled "Nuclei Miniatures," 50 cts. postpaid.

COMMERCIAL QUEEN-REARING. A complete description of the Swarthmore methods of queen-rearing in regard to cell-getting. Price, postpaid, 25 cts.

FORCING THE BREEDING-QUEEN TO LAY IN CELL-CUPS. This little book rounds off the Swarthmore system. It is the finishing touch, and ought to be read by all queen-breeders. Price 25 cts

SIMPLIFIED QUEEN-REARING. Revised edition. It tells the honey-producer how to rear queens by the very simplest method ever published. Good queens for little money and little trouble, in just an effective and economical plan for the bee-keeper who works for profit. Price 25 cts., postpaid.

## Bee-keepers' Ten-cent Library.

The following books are neatly bound in attractive papers, well illustrated. Just the thing for the beginners to help them with their troubles. Price ten cents each postpaid.

No. 1. BEE-KEEPERS' DICTIONARY. It is often confusing to a beginner or one who is not acquainted with the literature of bee-keeping to understand the different terms used by writers on the subject. This book is intended as a reference work giving clear definitions of current terms.

No. 2. INMATES OF THE HIVE. We often hear, even at this late date, about the "King Bee." This book is intended to correct such erroneous ideas.

No. 3. HONEY-COMB. This is a little book showing the construction and development of the honey-comb, and is alike useful and interesting.

No. 4. HANDLING BEES. Valuable especially for the inexperienced.

No. 5. TRANSFERRING BEES. This book details the most practical present methods of transferring from boxes to modern hives

No. 6. BUILDING UP COLONIES. Plain instructions for getting colonies into the best condition for the honey-flow.

No. 7. THE HONEY-FLOW.

No. 8. SWARMING.

No. 11. WINTERING BEES.

No. 12. SPRING MANAGEMENT OF BEES.

No. 13. BEE DISEASES. There has long been need of a better book on this subject. The book is written by Mr. E. R. Root, after long comparison and careful study of the writings of leading bee-keepers on the subject.

No. 15. ESTABLISHING AN APIARY.

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No. 28. DIVISIBLE-BROOD-CHAMBER HIVE.

No. 29. MOVING AND SHIPPING BEES.

No. 30 THE BEE-KEEPER AND THE FRUIT-GROWER.

## Popular Works on Bee Culture.

The list of books below are for the most part by writers of well-known literary ability, and are very interesting indeed, and are greatly valued by bee-keepers and others for their literary merit, and the popular style in which bee-keeping is depicted and we are very glad to have the opportunity to offer them to bee-keepers and others. The description of each work will give a fair idea of the same, but a pamphlet giving an extended view of these and the practical books on bee culture listed in the preceding columns will be sent on application.

THE HONEY-MAKERS. By Miss Margaret W. Morley. This is the story of the life of the bee, told in very interesting style—how it lives, gathers honey, and all about it. While clothing the general subject with an air of poetry, it seems to be entirely within the limits of known facts while attempting to deal with them. We believe it will give all thoughtful bee-keepers a greater liking for their business to read it. Probably it has more to do with the curious traditions connected with bees than any other book of the kind. Price $1.50 postpaid; by freight or express, 10 cents less.

THE LIFE OF THE BEE. By Maeterlinck This is a masterpiece of fine writing by a modern Shakespeare. The words fly from the pen of this writer like sparks from a blacksmith's anvil, the result being a glorification of the honey-bee. Maeterlinck is considered by many to be the finest writer now living, and any thing from him is sure to be worth reading. He is, to a certain extent, familiar with bee-keeping, but the truth about bees does not interest him so much as the romance of the queen and the drone and the swarming instinct. The book itself is well bound and beautifully printed. Cloth bound, 42 pages. Ed. 1903, price $1.40 postpaid; by freight or express, 10 cts. less.

THE BEE PEOPLE. A book on bees, especially for children, from the pen of Margaret W. Morley. Including its elegant illustrations, it is, in some respects, the prettiest bee-book in existence. It has 177 pages, very coarse print, the reading being ingeniously interwoven with the illustrations showing the parts of the bee. The story of bee-life is told in a fascinating manner, and is well calculated to get the casual reader, as well as children, interested in this useful insect. The cuts go just enough into detail to explain fully the lesson taught, without confusing the mind with other things. We think the book well worthy a place in every bee-keeper's home. Fittingly designed cover. Price $1.50 postpaid; by freight or express, deduct 10 cents.

THE SWARM. By Maurice Maeterlinck, author of the Life of the Bee. This is a book of 113 pages, prettily bound in cloth. Price $1.20 postpaid; by freight or express, 10 cents less.

THE BEE-MASTER OF WARRILOW. Tickner Edwards. Cloth bound, 64 pages; 57 cents postpaid; by freight or express, 7 cents less.

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We sell to you, direct from the factory, at actual factory prices,

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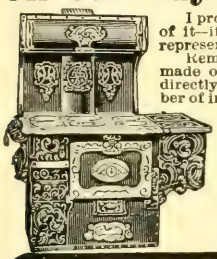

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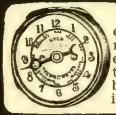

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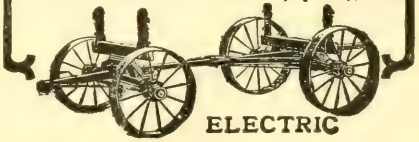

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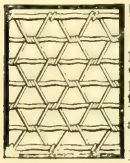

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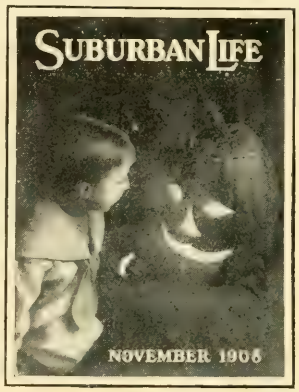


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FIVE ACRES AND CONTENTMENT
A WORKSHOP AT HOME
MAKING A HOME GYMNASIUM
A CLUBROOM FOR THE BOYS AND GIRLS AT HOME
THE SMALL ENGINE AND THE MOTOR
THE STEREOPTICON IN THE HOME
A WOMAN'S SQUAB PLANT
A HALLOWE'EN PARTY
DRESSING THE HORSE, ETC.

**Other interesting features for succeeding numbers appeal to every member of the home, and include:**

**SOCIAL LIFE**—The Long Day of the Commuter's Wife. Evening Amusements at Home.

**LIVING FROM THE LAND**—Can I Make a Living from a Small Place? Personal Experiences of People Who Are Making Good, Comfortable Incomes from Less than Twenty Acres.

**THE NEW NATURE STUDY** — Night Prowlers Who Aid the Farmer. What Will Happen When the Birds Are Gone?

**TIMELINESS**—What Ought to Be Done Each Month About the House and Grounds, in the Greenhouse, the Stable and Poultry Yard.

**THE HOME**—Artistic and Sensible Window Draperies. New Things in Furniture. Sleeping-Porches.

**WOMAN'S WORK.**—Personal Experiences of a Number of Women Making a Living in the Country.

**FLOWER AND VEGETABLE GARDENS** — An Electric Hotbed. Garden Insects and Diseases.

**OTHER FEATURES**—Poultry, pigeons, the horse, the cow, the dog, the cat, bees and pet stock, will receive the attention which their importance merits.

**CIVIC IMPROVEMENT**—This important topic will be treated in a practical manner, and also the subject of conservation of our natural resources.

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# Gleanings in Bee Culture

APIARY OF AMERICAN HIVES IN NEW ZEALAND

*Published by The A. I. Root Company, Medina, Ohio, U. S. A.*

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

Vol. XXXVI November 1, 1908 No. 21

# 17 Cents a Day Buys an Oliver

This amazing offer—the New Model Oliver Typewriter No. 5 at *17 cents a day*—is open to everybody, everywhere.

It's our new and immensely popular plan of selling Oliver Typewriters on little easy payments. The abandonment of *long-hand* in favor of clean, legible, beautiful *typewriting* is the next great step in human progress.

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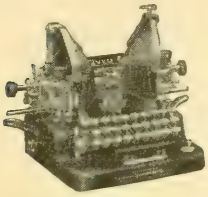

The prompt and generous response of the Oliver Typewriter Company to the world-wide demand for *universal typewriting*, gives tremendous impetus to the movement.

The Oliver, with the largest sale of any typewriter in existence, was the logical machine to take the initiative in bringing about the *universal use* of typewriters. It *always* leads!

## SAVE YOUR PENNIES AND OWN

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### THE STANDARD VISIBLE WRITER

This "*17-Cents-a-Day*" selling plan makes the Oliver as easy to *own* as to *rent*. It places the machine within easy reach of every *home*—every *individual*. A man's "cigar money"—a woman's "pin money"—will buy it.

Clerks on small salaries can now afford to own Olivers. By utilizing spare moments for practice they may fit themselves for more important positions.

School boys and school girls can buy Olivers by saving their *pennies*.

You can buy an Oliver on this plan at the regular catalog price—$100. A small first payment brings the machine. Then you save 17 cents a day and pay monthly.

And the possession of an Oliver Typewriter enables you to *earn money to finish paying for the machine*.

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The Oliver is the most highly perfected typewriter on the market—hence its *100 per cent efficiency*.

Among its scores of conveniences are:

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- —the Ruling Device
- —the Double Release
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- —the Automatic Spacer
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### Service Possibilities

The Oliver Typewriter turns out more work—of better quality and greater variety—than any other writing machine. Simplicity, strength, ease of operation and visibility are the corner stones of its towering supremacy in

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**Can you spend 17 Cents a day to better advantage than in the purchase of this wonderful machine?**

Write for Special Easy-payment Proposition or see the nearest Oliver Agent.

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**103 Dearborn St. Chicago.**

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in a section where the climatic conditions are so against you, where it is necessary to battle with the rigors of a long winter?

# Wouldn't You Like

to be permitted to carry on work out-of-doors throughout the entire year? A location in our southern territory offers many opportunities and advantages, and makes life a pleasure the year round. The lands can be obtained at reasonable prices, they are equally as productive as yours, prices as good, if not better, for your crops, and no long winters of ice and snow to contend with.

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Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which means sacrificed prices and enables us to sell even as low as cost without loss. You take no chances in dealing with the Chicago House Wrecking Company. Whether for $1 or $10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

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I saw this advertisement in Gleanings in Bee Culture.

Send me free of all cost your 500-page Catalog. Address

**Chicago House Wrecking Co., Chicago**

# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

INDIANAPOLIS.—While prices are not high, the demand for honey has never been better—a fact that can be attributed to the quality of goods now on our market. This is a white-clover district, and our market is almost free from honey from other sources. Producers are offering fancy white comb at 12½; No. 1 white, 12; white clover, extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is not sufficient to establish a price. Beeswax is steady at 28 cts. cash, or 30 cts in exchange for merchandise.

Oct. 18. WALTER S. POUDER, Indianapolis.

BOSTON.—White fancy comb honey, 16 to 17; No 1 ditto, 14 to 15; No. 2 ditto, 12 to 13; extracted clover, white, 10 to 11; extracted light amber, 8 to 9; extracted amber, 7; fancy to choice extracted honey in barrels, 6 to 7. BLAKE-LEE CO.,

Oct 18. 4 Chatham Row, Boston, Mass.

PHILADELPHIA.—Honey has been arriving quite freely during the last ten days; but owing to the quantity kept back by the producers the markets are somewhat unsettled. We quote: Fancy white comb honey, 15 to 16; No. 1 white, 14 to 15; amber, 13; fancy white extracted in 60-lb. cans, 8 to 9; amber, ditto, 6 to 8 according to quality and flavor. Beeswax, 28.

Oct. 23. WM. A. SELSER, Philadelphia, Pa.

KANSAS CITY.—The market is pretty well supplied with comb honey. On account of the warm weather the demand has been light; but with the advent of cold weather we look for a much better demand. The receipts of extracted honey are very light, but the demand is good. We quote No. 1 white comb honey, 24 sections, $3.00 to $2.75; white extracted, 8; amber, 7 to 7½. Beeswax, 28.

Oct. 22. C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

BUFFALO.—The demand is improving on the better grades of comb honey. Dark honey is scarcer than usual, and all No. 1 stock is bought up at good fair prices. Stocks of all kinds are light in the market, and we look for an advance in price before long. Big buyers are looking for white-clover extracted, but there is hardly any here in the market. No. 1 to fancy white-clover comb honey, 14 to 15; No. 2 ditto, 10 to 12; No. 1 dark comb honey, 12 to 13; No. 2 ditto, 9 to 10; white-clover extracted, 7 to 8; dark, 6 to 7. Jelly-tumblers, white extracted honey, 85 to 90 cts. per dozen. Beeswax, 28 to 30.

W. C. TOWNSEND,

Oct. 23. Buffalo, N. Y.

ZANESVILLE.—If any change, the market here shows a little better tone as regards demand, though there is a tendency on the part of some commission men to cut prices. No. 1 to fancy comb should bring on arrival about 13 cts.; extracted, 7½. No. 1 to fancy comb sells to the grocery trade at 15 to 16½. I quote clover extracted in five-gallon cans at 9½ to 10. For beeswax of good quality I offer 28 cts. cash or 30 in exchange for supplies.

E. W. PEIRCE,

Oct. 20. Zanesville, O.

CHICAGO.—Beginning with this month, and up to the present writing, there has been a fair movement of honey, both comb and extracted; but it may be the weather, or a combination of causes, for the volume of business is not equal to preceding years at this time, despite the fine quality of nearly all the consignments received here. We are hoping that the winter consumption will be much above the normal, because of the superior quality. A No. 1 to fancy comb sells at 13 to 14; No. 1 at about 12½, and other grades from one to three cents less. Extracted honey is steady at from 7 to 8 for the light grades, and 6 to 6½ for the amber; dark grades, according to body, flavor, and package. Beeswax is meeting with ready sale at 30 for yellow, free from impurities. R. A. BURNETT & CO.,

Oct. 17. Chicago.

ST. LOUIS.—Since our last, of Oct. 5, the honey market has continued in the same condition. The demand for all grades of honey is limited, and quotable as follows: Fancy white comb honey, 12 to 12½; choice amber, 11 to 12; dark amber, 9 to 10; broken or leaking honey sells at considerably less. Choice amber honey in barrels and half-barrels, 5½ to 6; in five gallon cans, 6½ to 7; dark and inferior grades rule at less. Beeswax, 28½ for choice pure.

R. HARTMANN PRODUCE CO.,

Oct. 17. St. Louis, Mo.

ALBANY.—Steady receipts are increasing somewhat; also consumption as the weather grows cooler. We quote: Fancy white, 16; A No. 1, 15; No. 1, 14½ to 15; buckwheat, 13 to 14; extracted, white, 7½ to 8; buckwheat and mixed, 7. Beeswax, 30 to 32.

Oct. 22. H. R. WRIGHT, Albany.

DENVER.—The local market on honey has continued weak. During the past two weeks we have had unusully warm weather, which may partly be the cause for it. Demand for comb honey in car lots is better than expected. We quote No. 1 white comb honey, per case of 24 sections, $3.15; No. 1 light amber, $3.00; No. 2, $2.85; strained and amber extracted, 6¾ to 7¾; light amber, 7½ to 8¼; white extracted, 8½. We pay 24 cents for clean yellow beeswax delivered here.

THE COLORADO HONEY PRODUCERS' ASS'N,

Oct. 17. Denver, Col.

CINCINNATI.—The market on comb honey is more active, and there are some large lots moving. There will be no big prices, due to the fact that there is considerable old honey left over from last year. No. 1 white comb honey is selling at 14 to 15 in small lots. Dark or off grades of honey are not selling at any price. There is practically no demand for it. Amber honey is in good demand at 6½ to 7. White-clover honey is selling at 8 cts. in 60-lb. cans; water-white sage, fancy, 9. Beeswax is in fair demand, selling at 30. The above quotations are what we are selling at. C. H. W. WEBER,

Oct. 22. Cincinnati, O.

*Continued on page 1313.*

# Extracted Honey Wanted

We are always in the market.

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NATIONAL BISCUIT COMPANY

Purchasing Department,

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CHICAGO, ILL.

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Also FANCY COMB HONEY.

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# HONEY

of the different grades and kinds.

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# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT CO., Medina, Ohio.
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No substitutions of other publications can be made in this offer. Present subscribers to this paper can have GLEANINGS sent to some bee-keeping friend, and the other three papers to their address.

**THE A. I. ROOT COMPANY, : : : MEDINA, OHIO**

# Convention Photo.

The Detroit convention of the National Bee-keepers' Association has been equaled in numbers only twice—at the World's Fair and at the Los Angeles convention. There were probably over 250 in attendance—at least, a group containing 238 members was photographed, and it is never possible to choose a time when every member is present. I employed a local photographer who is an expert in taking groups of this kind. He makes a specialty of this class of work, and has all of the necessary paraphernalia, including an 18x22 camera and set of seats like those used in a circus-tent. These seats are loaded upon a dray, hauled to the spot and set up, thus allowing of the posing of the members in tiers, one above the other. I selected the location and the time of the day when the light would be the best, and the result is a magnificent photograph of a convention group, such as has never been equaled, and probably will never be even approached. There was a combination of circumstances: First, the gathering together of the leading bee-keepers; then the seats upon which to group them in a mass so that the camera could be set up close to them; then the camera of large size, and a man who knew how to use it; and last, but not least, the proper lighting conditions. The artist who took the group told me he had taken probably 500 groups of this kind, but never one that was more nearly perfect than this one in *every respect*—not a person moved—every face is as bright, sharp, and clear as though taken in a gallery. Then the large size of the camera allowed the faces to be made of good size. I paid the photographer $25.00 to make the negative, and consider it money well spent, as I have a group-picture of the leading bee-keepers of this country that has never been approached in size or execution. I am proud of it, and shall have it framed and hung in my office by the side of my desk, where, in the intervals of my work, I can sometimes glance at the faces of those friends with whom I have passed so many delightful hours. Just think of having, all upon one sheet, nice clear pictures of such men as N. E. France, Geo. W. York, A. I. Root, E. R. Root, Huber H. Root, L. A. Aspinwall, Fred W. Muth, R. F. Holtermann, T. F. Bingham, Wm. McEvoy, R. L. Taylor, W. L. Coggshall, O. L Hershiser, Prof. E. F. Phillips, E. M. Hunt, W. D. Soper, A. G, Woodman, H. C. Ahlers, J. L. Byers, J. E. Hand, F. J. Miller, E. E. Coveyou, E B. Tyrrell, and Chalon Fowls; but there is little use in mentioning names, as there is no stopping-place. Another thing: Many of these men were accompanied by their wives, and some by their children, all of whom appear in the group.

But I have not yet mentioned the crowning feature. There is not much satisfaction in looking over a group of this kind if you can recognize, perhaps, only half a dozen faces, but I spent one whole day in securing the names and addresses of those in the group, giving each person a number. In other words, the members are numbered from 1 to 238, the numbers being placed upon the shoulder or some part of the person; then the list of members, together with their postoffice addresses, are printed and placed below the group, and the corresponding or proper number placed in front of each name. For instance, if you wonder who is No. 83, look in the list and it is H. G. Sibbald, Claude, Ontario. In this way every member can be identified—you can see exactly what kind of looking man is some one whose writings you may have followed for years.

The picture is printed upon a semi-mat carbon paper that gives beautiful soft tones in black and white, and mounted upon the very heaviest ash-gray mount, 20x24 inches in size, packed between two sheets of cellular board, and sent by express, *prepaid*, safe arrival in perfect condition guaranteed, for only $1.50; or for $2.00 I will send you the picture and the *Review* for 1908 and 1909. Send for sample copies of the *Review*, and a circular giving some of the principal topics that have been discussed in 1908.

One more point: After you receive the picture, if you should not care to keep it, feel *perfectly free* to return it, at my expense, when your money will be returned. Get this photo; have it framed, hang it in your home, and I am sure there is no picture that you will look at more often or with more pleasure. As a bee-keeper and a photographer I am proud of it.

**W. Z. HUTCHINSON, Flint, Mich.**

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The regular price of this work is 50 cents; but to introduce it among our readers we offer it in combination with one year's subscription to GLEANINGS for the regular price of the journal; namely, $1.00, providing all arrearages are paid, if any; and $1.00 for one year in advance. Those whose subscriptions are about to expire should renew at once, for the condition of our offer is that the subscription money, $1.00, *must* be received before the expiration of your subscription. As there have been only a limited number of copies of the book printed, if you desire to secure one you had better renew at once, even if your subscription has some time to run, so as to be sure to get one.

**GLEANINGS IN BEE CULTURE, MEDINA, O.**

# GLEANINGS IN BEE CULTURE

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### THE BEST FENCE.

There can be no doubt as to what constitutes the best fence for all kinds of domestic animals. It is the woven-wire fence as now made by the best manufacturers in America. Animals are totally prevented from getting out, yet at the same time they can not hurt themselves as they used to do with some of the other fences. For instance, the barbed-wire fence injured a great number of animals during the year, and even now it still injures a good many. Enormous numbers of cattle had their hides lacerated by the barbs, with the result that their hides, when sold, brought much less money. It was and still is a *barb*-arous contrivance for controlling stock. The woven-wire fence is now so cheap and effective that there is but little excuse for any farmer putting up any thing else to control his stock. Moreover, it is neater and more sightly in every way than almost any other form of fence unless it is a hedge. One of the best makers of this kind of fence is the Coiled Spring Fence Co., of Winchester, Ind., who make a splendid article, galvanized, etc., to make it last for many years. They are always glad to correspond with any one having a fence to put up. They are a good reliable concern.

### THE HONEY MARKET.

We are taking special pains this season to get complete and accurate accounts of the state of the honey market in every center of trade in this country, and to some extent, also, in Europe. If our honey-producers will carefully study these reports we think such a thing as a glut of honey at any one point can be avoided. Before shipping, carefully consider all the facts. You will note some places seem to have an oversupply right now, while at others there is a shortage. A careful study of the market conditions would be a benefit all round at the present time, we firmly believe. It would also be well to scan the advertisements of the honey-buyers who use our columns. It is needless to say we consider them reliable or their announcements would not appear in GLEANINGS. The largest buyers of honey in the world are now using these columns —a fact which speaks for itself as showing the desire of buyers to get in close touch with the actual producers. It is an acknowledgment, also, that the men who read GLEANINGS are not only large producers, but also turn out honey of the highest grade, for it is abundantly evident that the buyers can handle the highest grade of honey to much greater advantage than any other kind. We desire to see both producer and buyer prosper, and we hope, by presenting the true state of the market, to help both.


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# A STORY WITH A MORAL

*By the Bee Crank*

Professor Bonnier, of the Institute of France, in a recent article states that the remarkable intelligence of bees in finding their way home is taken advantage of by a custom among the Indians. They discover a bee-tree in this way: They catch a bee which has alighted on a flower, and, having carried it some distance, let it go, carefully observing the direction it takes. A little further on they repeat the same thing with another bee. They are sure to find the tree at the point of the angle formed by the course taken by the bees, because it is a well-known fact that a bee will return to its home by the straightest line.

MORAL.

If you will intercept a number of shipments of bee supplies, and note the direction from which they came, and draw straight lines on a map to represent these directions, you will find that nearly all of these lines converge in Indianapolis. When a bee-keeper wants supplies he does not want them to reach him by a roundabout route; he prefers to have them come straight. Indianapolis is well called the "Pivot City," because it is the center from which radiate electric and steam railway lines to every point of the compass. This natural advantage has been improved by me by the adoption of every business method which will insure prompt and careful packing and immediate shipments. I do not wait until orders are received before sending for a stock of goods with which to fill the orders, but carry at all times a full stock of Root's goods, which are sold at Root's prices, less five per cent for cash orders received during November.

BEESWAX. I have an outlet for a large quantity of beeswax, and I pay the highest market prices, 28 cts. cash or 30 cts. in trade delivered here.

My illustrated catalog of bee supplies is free.

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THE YOUTH'S COMPANION.

This famous weekly magazine again makes its usual autumn announcement to the readers of GLEANINGS. It almost seems a superfluity to recommend this great paper to our readers, for everybody who makes any pretensions to being anybody has a good word to say for *The Youth's Companion*. It is a necessity in a family of boys and girls as much as a writing-desk or a piano. We can all well remember how we anxiously looked forward to the weekly visits of *The Youth's Companion*, and how disappointed we felt if for some reason it was not on time to the minute. To read it is to become a boy again, and there are many middle-aged people who do read it most assiduously, for its reading-matter is of the very highest order. The greatest writers of our age write for it and great statesmen, generals, ambassadors, doctors, travelers, and others equally eminent delight to contribute to its pages We can not praise it too highly.

"OFF FOR FLORIDA"—SEABOARD AIR LINE RAILWAY.

Some time during the month of November, Mrs. Root and I expect to "migrate" to Bradentown, Fla. In reply to the many kind friends who are making inquiries with the view of escaping our northern winters, I suggest taking the special trip ("the lowest rate ever offered") mentioned on the cover of this issue, by the Seaboard Air Line Railway. As a rule I would say, do not think of making an *investment* in real estate in Florida or *anywhere else* until you have gone and looked over the locality yourself.—A. I. R.

BUYING A TYPEWRITER.

Elsewhere in these columns we print the very interesting advertisement of the Oliver Typewriter Co. This company recently decided to take the public into their confidence, and propose to sell their famous typewriters direct to the consumers on the easy-payment plan. This is one of the greatest concerns of the kind in existence, and, though relatively a very young firm, it has been phenomenally successful in selling its typewriters. It might be supposed from this that their machines are of a cheap kind. On the contrary, they make nothing that is not of the highest grade, and all the typewriters used in the offices of The A. I. Root Co. are Olivers. This will serve to show our opinion of them better than words can express. They are in use by thousands of large commercial houses of the highest standard throughout this country, which we consider to be ample proof that the statements of the Oliver Typewriter Co. are well founded. In our opinion there is no better typewriter made than the Oliver.

RHODES DOUBLE-CUT PRUNING-SHEARS.

One of the best farm tools we have ever seen is Rhodes' double-cut pruning-shears, made by a company of the same name in Grand Rapids, Mich. Anybody who has much heavy pruning to do would appreciate these shears very highly. The handles give a great leverage in cutting; but in addition they cut from both sides, which materially reduces the strength required to do the work. This method of cutting obviates bruising the bark as other shears do, and this is quite a feature with careful fruit-men who desire to give their trees the best treatment. Taking these valuable features into consideration we think many will find it profitable to enter into correspondence with the Rhodes Manufacturing Co. Their address is simply Grand Rapids, Mich.

AN IMMENSE BUSINESS.

One of the sights of Kalamazoo, Mich., is the great plant of the Kalamazoo Stove Company. It is a monument to the enterprise and courage of its great promotor, Mr. Wm. Thompson, one of the wisest business men in the Wolverine State. To sell an immense output of stoves, ranges, and heaters by mail is no small task which would entitle the manager to very great fame, but also to superintend every detail of manufacture as well, is something of an achievement such as few men can claim the credit of.

There is, however, a considerable advantage in working along this line. The stove manufacturer comes into closer touch with the consumers, for thousands of letters reach him every day during the busy period of the year. He knows exactly what is wanted. He requires no army of expensive traveling salesmen to get orders. Neither are stores and warehouses in the cities and towns required. It is a simple system.

All middlemen are cut out completely, and producer and consumer do business without the intervention of an agent who would want a greater profit than the maker of the stove. This is quite an achievement to say the least.

It goes without saying, that Mr. Thompson, the manager of the Kalamazoo Stove Co., is a man of unflinching integrity or he could never have built up this immense business. Of course, he believes in the square-deal principle, without which no great mail-order business can long exist. It is almost needless to add that this company tries to make a friend of every purchaser of a stove, for in this way they are able to sell several stoves right in the same locality, and will keep on selling as long as mankind requires stoves.

If you have it in mind to purchase a stove, it would be a good thing to write for a copy of their catalog. The complete address and advertisement is on the cover.

# A COMPARISON: First and Third Places in List of Ten Papers.

Of course, we were gratified to read the letter below, coming to us unsolicited, and we know our readers will be pleased too, for it is by their kindness in patronizing our advertisers that such favorable showings are made for us.

Arthur Howard Hill
Dundee Nurseries
Dundee, - Illinois

GLEANINGS IN BEE CULTURE,
Medina, Ohio.

Gentlemen:-

We thought perhaps you would be interested in the results which we have secured from advertising in GLEANINGS the past season, which are as follows:

Standing on list D as regards cost per inquiry First

Standing on list D as regards actual business resulting Third

There are 10 publications in class D.

Yours very truly,

August 31st.
Dundee, Ill.

THE DUNDEE NURSERIES.

D. Hill

Our readers, we believe, are very generally pleased with the treatment accorded them by our advertisers, and we desire that none but the most trustworthy shall find space in our paper. If, inadvertently, any one not entirely reliable should find space in our columns, please report it to the

**ADVERTISING DEPARTMENT GLEANINGS IN BEE CULTURE, MEDINA, OHIO.**

**The Little Magazine with a Big Field.**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**
**Dubois, .. Pennsylvania**

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.. ON ..

**Root Quality**
**Bee-Supplies**

Together with the very best shipping facilities over some thirty odd railroads and steamboats is what we can offer bee-keepers north, east, south, or west of St. Louis. Simply send us a list of goods wanted, either for immediate or future delivery, and we will quote you our best special cash price, either delivered at your station or on board cars at St. Louis.

Every day delayed, now counts.

**BLANKE & HAUK SUPPLY CO.**
1009-11-13 LUCAS AVE.
ST. LOUIS, MO.

# ORDER EARLY

**Secure the Benefit of Discount on Fall Orders**

For November, 5 per cent discount.
For December, 4 per cent discount.

**THE A. I. ROOT CO.**
SYRACUSE, . . NEW YORK

# APICULTEURS

des pays de langue Francaise
Nous vous informons que.

**L'Apiculture Nouvelle**

Revue mensuelle illustree,

est tiree de:

**Gleanings in Bee Culture**

augmentee et completee par des collaborateurs Europeens, reconnus comme Apiculteurs eminents.

L'abonnement d'un an est envoye franco pour tous pays de l'Union Postale, contre l'envoi par mandat poste de frs. 6.50 oû $1.30.

Un numero specimen, ainsi que notre catalogue francais de tous les articles de la

**A. I. ROOT CO.**

est envoye gratuitement sur simple demande, adressee a

**Emile Bondonneau,**

Agent General pour l'Europe et les Colonies
de A. I. ROOT CO.,
142 Faubourg Saint Denis 142, Paris (10e), France.

L'edition Francaise de l'A B C de l'Apiculture est egalement parue.

## "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

*Cash or goods for wax at all times.*

**George E. Hilton**
**Fremont, . . Michigan**

## WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

A FULL LINE OF

## Shipping-cases,

**Honey-extractors,**

**and all other seasonable goods now on hand.**

We are also prepared to supply goods for next season's use at special discounts.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

## 5%

Cash Discount for November orders for "Root Quality" Bee-supplies for next season's use.

Beeswax wanted for cash or exchange

**M. H. Hunt & Son**
Lansing, Mich.

# What Would You Do?

## If Your Hens Stopped Laying?
## If Your Horse Got the Colic?
## If Your Best Cows Were Ailing?

These are but a few of a thousand problems that may arise any day and cause you loss, trouble, and expense. Do you know how to solve them all? Jacob Biggle tells you in his handy Farm Library, and gives you, besides, a host of other useful facts and pointers that every person on the farm should know. His books—ten in all—are a treasury of reliable information based on practical, every-day experience, not on theory. Each of the books covers its subject exhaustively—authoritatively—and is written in a delightfully readable and interesting style. Jacob Biggle has for 30 years been a constant contributor to the Farm Journal, and, like this best-liked, most widely read American Farm Paper, his books are concise, comprehensive, up-to-date, profusely illustrated, four of them with handsome colored plates.

**The Horse Book** covers the subject thoroughly—health and disease, history, training, care. 55,000 copies sold.

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**The Cow Book** tells how to make dairying pay; full of cow wisdom; condensed, and accurate. Don't wait until the cow is sick.

**The Swine Book**—breeding, feeding, fattening, and marketing, with chapters on the diseases. The whole story.

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**The Garden Book** tells how the author made money in the business—a remarkable record.

The other books are like these—stuffed to bursting with facts, advice, and practical ideas.

**The Berry, Pet,** and **Health Books** are fine, every one. Each book is a handy size to slip into the pocket and consult during day's work. They cost only 50 cents per volume, postpaid; $5.00 for the set of ten.

# OUR SPECIAL OFFER

The regular price of the Biggle Books is 50 cents each, $5.00 for the complete library. The subscription price to the Farm Journal is 75 cents for five years. For a limited time you can get *one* of these books and a five-years' subscription to the Farm Journal for $1, also an opportunity to secure the other nine volumes of the Biggle Library—Free of Charge.

**THE FARM JOURNAL** contains more helpful money-making suggestions for the farmer and his family than any other farm paper published. That is why it has so many readers—more than any other farm paper in America, and more than all other farm papers of foreign countries combined.

Mrs. Ollie C. Krieder, of Jamestown, Pa., wrote us that the information secured from the Farm Journal helped her to make clear in cash $137.

Thousands of our subscribers voluntarily write and tell us how they have made money from reading the Farm Journal. Following are a few of the bright, timely, and interesting articles that will help our readers get more profit and pleasure out of their farm this year. These all appear in the November issue, but every other issue is equally full of good things.

*High Farming at Elmwood—Saving the Potato Crop. Money in Hogs—How to Get it Out of Them. The Farm Horse in Cold Weather. Raising Pigeons for Profit. Law for the Farm. Troublesome Insects—the Way to Deal With Them. Keeping Farm Accounts. A Woman Luther Burbank. Farmer's Problems—How to Solve Them. How to be Happy Though Unmarried—Prize Article. Family Doctor—Report of Tuberculosis Congress. Diversions for Young Folks—Games.*

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**1043 Race St., PHILADELPHIA, PA.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

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VOL. XXXVI NOVEMBER 1, 1908 NO. 21

## STRAY STRAWS

DR. C. C. MILLER

BEE-KEEPING is mentioned, p. 1279, as "probably the oldest human occupation under the sun." I wonder, now. Adam was a gardener. Did he "probably" spend some time at bee-keeping before he began gardening?

MY GRANDSON, 11 weeks old, is now here on a visit from Washington, D. C When I realize what interest is awakened by that single lump of humanity, I wonder how it can be with A. I. Root with his full outfit of grandchildren, assorted sizes.

"WOULDN'T it be fair for the buyer of honey to allow the producer half price on the can?" asks Dr. Lyon, p. 1245. Isn't the answer on the next page, where the editor says, "He pays the producer half a cent more per pound for the honey because it is in tins?" [Y-e-s; but after all we suspect that would not quite answer Dr. Lyon.—ED.]

FOR UNCAPPING, there is suggested, page 1244, "a straight-handled tool on plain work, and another knife, with an offset handle, in places which can not be reached with the straight knife." Are not those "places" depressions, and would they not be better reached with a straight handle and a curved blade? [Quite likely. Who knows by experience?—ED.]

UNCLE JOE CANNON denounced by the Rock River Methodist conference for opposing temperance legislation, p. 1274. Oh, my! that's not the only pebble on the beach. Can't recall them all; but there are other Methodist conferences doing the same thing; also the Methodist bishops (isn't the M. E. General Conference also on the list?) besides Baptist bodies, Quaker—oh! I don't know what all. Fact is, moral issues are forcing politics into the church, and the leaders are beginning to use plain talk.

FORMIC ACID, according to that quotation from U. S. Bulletin 110, page 1254, "is supposed to be introduced into the honey by the bee just previous to capping the cell." Why not add that the bee drops it into the cell from its sting? But does any intelligent bee-keeper nowadays believe that the acid is added "just previous to capping the cell"? [You seem to have in mind the old sting-trowel theory, long since exploded and discarded. Why can not the bees introduce the formic acid in some other way than with their stings? The author of the bulletin mentioned, we do not think, had in mind the sting-trowel theory.—ED.]

THAT POINT that W. K. Morrison makes, p. 1248, as to the dryness of honey compared with other foods, is good. It struck me almost as something new. But I would not like to insist before a promiscuous audience that "Actually, honey improves with age." Put in that general form I'm sure it would be met with the answer, "I know that isn't true, for 'new honey' is always best, and the longer we keep it the poorer it gets." Even if, under proper conditions, it may improve with age, there's a limit, I think, to that age.

A NUCLEUS with the full two-inch space under bottom-bars had become so strong that the cluster of bees hung an inch below bottom-bars. On a hot day I lay for some time on the ground in front of the hive watching the bees enter. They had no fixed rule. Some lit directly on the cluster, some on the floor, and some on the side of the bottom-board Then I watched the bees flying out. Some started directly from the cluster, and some jumped down on the floor and walked out. [We have watched the bees in the same way, and found they fly out and return exactly as you describe.—ED.]

GLAD TO SATISFY the curiosity you express, Mr Editor, p. 1243. I had 129 colonies, spring count, from which I took 19,480 sections. Although that's short of what I expected, it's better than I could have done 25 years ago. Probably three reasons for the improvement: Forage better; bees better; bee-keeper better. [This is 151 sections of comb honey to the colony. As you use 1⅞ by 4¼ square sections this would make a little less than 140 lbs. of comb honey per hive. The record, while not a breaker, is good for that number, and you are to be congratulated. While the season was excellent we must give the man and his management some credit.—ED.]

"FOR OUTDOOR-WINTERED colonies we recommend about 25 lbs. of sealed stores," page 1245. While that may be all right at Medina, I'd feel safer here with 30. And a good way south of Medina, don't bees use more? [Where it is very cold the bees will consume more stores than where it is only moderately so. If the other extreme is reached, where the bees can fly almost every day in the winter, then there will also be a larger consumption, but at an increased ratio. In our locality we would estimate that there would be less stores consumed than in any point north or south of us. If 30 lbs. would be about right for Marengo, then 25 lbs. would be a safe figure for a locality somewhat milder.—ED.]

W. M. JANES wants me to give some of the most easily seen points in appearance by which I can decide that a queen is old. I can recognize

John Smith at a glance; but to tell you just how I recognize him so that from my description alone you can recognize him at a glance, is probably beyond me. In the same way it is easy to recognize an old queen, but not so easy to tell how. And yet it's a fair question, so I'll make a stagger at an answer. An old queen is darker and more shiny in appearance, due to loss of plumage, probably. She does not move over the comb with the vigor of a younger queen, but more slowly and feebly. In many cases she seems to lose her footing, and acts as if about to fall off the comb. Now, that doesn't seem to tell much, but I'm not sure I can do any better. I'll be glad, Mr. Editor, if you or any one else will improve upon it. It is only fair to say that even the few signs I have given are not infallible. A queen that has been balled may look black and shiny while still young. Again, I have seen a queen which looked not very old, and yet my record told me she was three or four years old. [You have given the general characteristics that go to show an old queen; but there is a certain indescribable *general* appearance which is at once recognized by the veteran queen-breeder, and which to him is almost infallible.—ED.]

# EDITORIAL

By E. R. ROOT.

### THE DETROIT-CONVENTION PICTURE.

ELSEWHERE a picture taken of the members who were in attendance at the National convention at Detroit is advertised by Secretary Hutchinson. We have seen this, and unhesitatingly pronounce it by all odds the best photo of a collection of representative bee-keepers we have ever seen. Every face is clear and distinct, and, what is more, shows a natural likeness. It is 18×22, and can not be reproduced in half-tone on the pages of any of the bee-papers. It will probably be many years before another collection of as many representative bee-keepers as are in this one will be seen again.

### THE FOREST FIRES OF NORTHERN MICHIGAN.

WE have just received word from Mr. Geo. E. Hilton, of Fremont, Michigan, stating that "the forest fires are making sad havoc in the bee industry of this State. To-day's papers state that over fifty dead bodies have been found, and scores are yet to be accounted for." This will mean, of course, the absolute destruction of all bee flora within the territory involved, as vegetation of every kind will be destroyed, root and branch. The sympathies of all bee-keepers will, we feel sure, go out to those who have suffered from this terrible affliction.

### THE PAPER PLAN OF UNITING BEES.

AFTER reading our editorial on page 1178, Oct. 1st, setting forth the various methods of uniting bees, several write us, saying we had omitted one very important plan—namely, putting a sheet of newspaper between the upper and lower stories of the two forces to be united. Several of these writers pronounce the paper scheme far ahead of any other method, because the bees will gradually unite after gnawing through the paper, and because they will not return to their old stand.

We remember that this paper scheme has been given before in our columns; but at the time of preparing the editorial mentioned we had forgotten it.

### PHOTOGRAPHS OF APIARIES FOR ILLUSTRATED WORK FOR GLEANINGS.

WE are getting a large number of snapshots of bee-yards that we can not use. A mere picture of an apiary, showing a collection of hives of *ordinary* pattern, with *ordinary* surroundings, does not convey any new information; nor does it illustrate any trick of the trade. Photos that we use most contain some distinctive feature. Those that show methods of work in handling bees or hives, are, as a general rule, very acceptable, for these convey an object-lesson that the reader can take in at a mere glance. A view of a bee-yard with a pretty background, or one with hives artistically arranged is also acceptable, because it stimulates the artistic sense in one's nature; and when it costs no more to have the surroundings neat and pretty, others are inspired to beautify their apiaries. Photos of prominent bee-keepers or of scientific subjects, or of practical appliances are always available.

In a word, any photo that we use must contain some distinctive feature that is either artistic or educational. They must in some way carry a message of some sort. For example, in the Aug. 1st issue the half-tone plate on p. 942shows an apiary with good tiering up of the hives that are home-made; page 943 shows how just enough shade may be secured from a shed; page 944 depicts excessive clustering out on a hot day, and proves that some very good shade-boards did not serve to stop it; 945 represents a yard, not artistically arranged, but that has yielded a good revenue to its owner, and, incidentally, a hive-carrying wheelbarrow is shown in the background. So on, each picture will have some feature that makes it available for these columns.

### QUEENS STOP LAYING IN THE FALL.

ON the approach of fall every year we have to answer many inquiries from beginners as to why their queens do not lay and have not laid since along in August. For the benefit of such we will repeat that, as a rule, Italian queens, at least, will stop laying after the main honey harvest in August in the Northern States. They may begin laying again if there is a fall flow; but as soon as it stops there will be no eggs and but very little brood, which will be mostly in the sealed form. The reason of this is, the queen and the bees are slow to rear brood when there are no new stores coming in, either from the fields or from a feeder. If the colony is not strong it is always advisable to practice stimulative feeding early in the fall so there will be a large force of young bees to go into winter quarters. About the time this journal reaches most of our readers it will be too late to practice this.

In such cases the colonies, if weak, should be united with the others according to any one of the methods mentioned on page 1178 of our issue for Oct. 1.

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### HOW TO CONTROL THE RAVAGES OF FOUL BROOD IN STATES WHERE THERE ARE NO FOUL-BROOD LAWS; THE VALUE OF DIPLOMACY.

THE question is often asked what to do when foul brood is in one's locality, and there is no State legislation covering that disease. Where one has considerable invested in bees in any such State, he can not afford to allow the disease to exist within a few miles of his locality. Indeed, he can better afford to inspect all bees within ten miles of him, and administer cures, if need be, at his own expense. The only thing to do in a case of this kind is to use diplomacy and moral suasion. Good bee-inspectors tell us that they rarely have to bring the law to bear on any recalcitrant bee-keeper. If an inspector is made of the right stuff he can generally get along without any trouble, and the same is true of the bee-keeper without a law back of him. All he needs to do is to cultivate the acquaintance of all bee-keepers within ten miles of his apiary. If there are many of them, let him call together a bee convention to discuss methods of management, prices of honey, and last, but not least, bee diseases and their cure. After getting them together in a friendly way it is very easy to volunteer assistance.

But suppose there are only one or two bee-keepers in the locality. Take a horse and buggy, and on arriving at, we will say, Mr. Jones' home, address him something after this fashion:

"Mr. Jones, I am a bee-keeper at Blankville. I understand that you have been having a little difficulty with some disease or malady among your bees. Thinking that I might be able to help you, I drove over this morning. I should be glad to examine your bees; and if you have what is known as foul brood I will cure it for you free of charge." If he receives you kindly your task is easy.

In the back end of the buggy should be extra frames of foundation; and if Mr. Jones is the right kind of person he will be willing to pay the cost of them. If he is a little "offish," give him the frames outright, on condition that he will permit you to burn the combs and the brood.

In all cases of this kind, make careful inquiry of all these Mr. Joneses to ascertain whether they are hard to get along with. If they are of the other sort, get some one who is a good friend of both of you to go with you.

We will guarantee that, in ninety-nine cases out of a hundred, if you use the right kind of diplomacy you will be able to banish the disease from your locality, and it will not cost you nearly as much as to spend several days at the State House trying to get the members of the legislature to pass a foul-brood bill. While every State *should* have a foul-brood law, one can not afford to allow the disease to exist in his locality in the absence of such law without making some intelligent effort to combat it. If there is no law, there is no legal way in which one can compel a bee-keeper to treat foul brood if he has it. He must coax him into it by showing him that it is to *his* interest to cure it.

### THE DETROIT CONVENTION.

THE meeting of the National Bee-keepers' Association at Detroit, Oct. 13—15, was a success in every way. It was estimated there were between 300 and 400 in attendance. Bee-keepers came from the east, north, south, and west, and from Canada. There was not only a big attendance, but a large number of representative bee-keepers, well known either from their writings or because of their large interests in bees and bee-keeping. Detroit has well earned the reputation of being an ideal city for a convention of bee-keepers.

The convention was held in a large hall—in fact, it was *too* large to enjoy the best acoustic properties. Unfortunately some carpenters were at work on the building, and at some of the sessions the sound of hammers made hearing difficult if not impossible. When it became intolerable the members were allowed to retire to an adjoining hall in the rear. But even there the carpenters could be heard.

This convention was remarkable in another way, in that there was no bitterness or personalities indulged in, either on the floor or between sessions. Every one, apparently, came with the view of receiving and imparting.

There were many exhibits, and a number of good prizes carried off. The program, which was most carefully prepared by Secretary Hutchinson, came off with very little hitch.

In our next issue we hope to give one or two of the papers, and in the mean time we present here a report of one of the sessions by A. I. Root, who was present.

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### "TURNING WINTER LOSSES INTO PROFIT;" ALSO HOW TO FREE A LOCALITY FROM DISEASE.

TAKING it for granted that our readers will, at least the greater part of them, have access to the stenographer's report of the National convention at Detroit, I will not attempt to give a write-up. Perhaps I ought to add, however, that I do not think I ever before met so many people who wanted to shake hands with your humble servant. If I attended the different sessions of the convention, and avoided talking while some speaker occupied the floor, it was about all I could possibly do to shake hands and make each one tell his name and address. In that way I could locate and identify many of them. A dozen times or more I said to myself, "I must go back and hunt up that dear brother or *sister*, and have a talk." My name was called by many voices at the close of the first evening session; but as it was already bedtime, I decided to give my little talk the following day; but the program was so full, and the speakers were so able, that there did not seem to be any chance for me to return even a friendly greeting. I hope the women-folks especially will accept my apology for replying so briefly to their many kind words of appreciation—especially the expressions, accompanied by a pleasant look, in regard to the Home papers. I am going to try hard to keep well and to live long for the sake of the wives and mothers if for no other reason.

The marked event of the convention (to *me*) was the address of W. J. Manley, of Sandusky, Michigan. The subject was the title of this article—"Turning Winter Losses into Profit." By

the way, friend Manley is not only a comical genius, but he is a first-class humorist. It would not do to say that he held his audience "spellbound," for, on the contrary, they were hooting and yelling a good deal of the time at some of his sallies of merriment and huge jokes. In fact, had not the good president gently told him that he really *must* stick to his subject I fear he might have occupied nearly the whole forenoon with his queer speeches and antics. When he first started out I feard he was not going to be able to handle his subject; but, oh dear me! what a revelation when he "got down to business!" It was worth the whole trip there to see him and to hear his talk; and yet both Ernest and Huber missed it entirely. They were both continually called on to explain about the large display of implements and other things connected with bee culture. By the way, this exhibition of bee-keepers' supplies ought to be in a room by itself; and the president should lock this room up during the hours of the convention — at least it looks that way to me.

Mr. Manley said there were many winter losses in his locality. When questioned closely he said he thought it was likely owing, to a great extent, to the aster honey that is gathered clear up till freezing weather. This honey is unsealed, and, of course, not ripened. It gives the bees dysentery, and in many apiaries the bees are all dead by the time blossoms open in the spring in his locality. He said he thought it very likely that taking this poor honey away and giving some stores of sugar syrup would save the bees. But how are you going to make them take the sugar syrup when there is honey to be had in the fields? He said he thought it very probable that taking away all combs outside of the cluster containing unsealed stores, and replacing them with combs of good sealed honev, or, better still, sugar syrup fed and sealed up early in the season, would make a success of wintering. But this was a good deal of trouble, and many found it very much "easier" to let the bees take care of themselves; so that, year after year, when springtime came, there were hives of dead bees all over the land.

One spring a few years ago he told his wife he did not believe there were live bees in a dozen hives, out of a hundred or more that were covered up with snow. When somebody asked why he did not put them in an up-to-date bee-cellar I can not remember exactly what his reply was; but I think it was to the effect that, in his locality, where bees *can* winter outdoors they are generally ahead of those wintered in the cellar. Well, last spring he told his wife that a hundred colonies or more were dead. She was bright enough and wise enough to suggest that it did not matter very much any way, as it would give them a good chance to start over again with things in better shape; and in due time he and his wife went to work to get the wax and honey out of those empty hives. The combs were mostly old and heavy, and he got so much wax out of them that they had one of their "happy surprises." The honey was also saved, and sold to good advantage. If I remember correctly, some of it went to the baker's. But his greatest success came by changing his whole apiary over into modern hives with the bees all on frames of wired foundation. The advantage of working with new up-to-date implements compensated, or more than that, for the value of the bees that died. Of course, this change might have been made with bees that did not die; but had they all lived they probably would have worked along in the old-fashioned way.

Well, after friend Manley and his wife had really gotten into the business he thought he would see how low he could buy the hives and combs of his neighbors where the bees had died. He found them generally glad to have them take the things off their hands at his own figures; and he finally scoured the whole country, gathering up the hives that would probably breed moth-millers or perhaps, in some localities, foul brood. By the way, friend Manley's scheme of clearing up the remnants of "blasted hopes" throughout the country all roundabout is one of the best remedies, both in the way of prevention and cure of foul brood, and he made money by it too. And his neighbors *also* made money. He said they were always glad to see him, because he took a disagreeable job off their hands. I have not the figures in dollars and cents that he gave us; but when you come to see them you will be astonished.

Now, here is a point that was brought out by his talk: He suggests, if I have it right, that it would pay any bee-keeper to melt up his combs, especially the brood-combs, every four or five years, and fill the frames with new sheets of wired foundation. If there has ever been any foul brood in the region the frames and hives should be treated in boiling water to banish effectually all traces of the contagious disease.

A report of friend Manley's plan of getting out the wax will be found on page 1313 of this issue; however, as this article was written some time ago, we think friend Manley will give us something for our pages that will bring the matter fully up to date.

I do not know of any subject of more importance to bee-keepers than this very thing that friend Manley has opened up to us. Old, dilapilated, run-down apiaries are a curse to any community or neighborhood; and friend Manley goes about through all his region doing missionary work in "gathering up the fragments that nothing may be lost." The man who has sold out every thing clean, and gotten rid of his old traps, will be very much more likely to start anew with nice up-to-date fixtures than he would if the old traps were left lying around loose. By the way, would it not be a fine thing if some such missionary would go around and buy up the old implements and other truck lying around in the corners to disfigure many farm homes? Years ago T. B. Terry astonished the people of Northern Ohio by having every thing unsightly cleared away from around his home and even from around the barn; and I did not understand how he did it until one day when I went over the hill back of his house. Every thing unsightly was carried off to a sort of "boneyard" back of the hill. Friend Manley has been doing for bee culture exactly what Terry did for the average farm home. The *women*-folks will enter into this work most heartily. In fact, Mrs. Root will hardly let me go to sleep nights with unsightly rubbish left around in sight, especially in the front yard.—A. I. R.

# CONVERSATIONS WITH DOOLITTLE

PLURALITY OF QUEENS; WHEN PROFITABLE AND WHEN NOT.

"I have been reading Mr. Alexander's article on page 1135 of the September 15th number of GLEANINGS, and I wish Mr. Doolittle would tell us in his department just what he thinks or knows of this matter.—SUBSCRIBER."

I have tried the plural-queen system extensively, though my experiments have doubtless been fewer than those of some others. All through these discussions of the past I have looked for *one* thought in that connection which interests those in the white-clover belt above any thing else; and that is, "Can this plurality of queens be made profitable to us who desire all the surplus from the white clover possible?" So far it has been but meagerly touched upon, and that in only an indefinite way, no one having given figures to show that two or more queens in a hive prior to the blossoming of the clover are of profit. In the absence of these I wish to give a little experience of my own in this matter. I have often had a mother and daughter under supersedure circumstances in one hive during the basswood flow or later; but one spring, soon after setting the bees from the cellar, I found two fine queens in one of my strongest colonies. A scientist offered me $25.00 for this colony, but I would not part with it, as I wished to see what I could make from it, believing that these two queens would give me double the bees for the harvest that one could. The next time I looked into the hive I found many cells occupied with two and three eggs, just as we often find in small colonies having a queen capable of laying more eggs than the bees can cover, or bring to maturity early in the year. This convinced me, as have other trials since, that, unless I double up the colonies so as to get bees enough to mature all the eggs two queens can lay early in the season, there is no more advantage with the two queens than with one, so far as securing workers for the early harvest of white clover is concerned; for, as a rule, any one of my queens will produce all the eggs that the bees can mature to be of advantage in the white-clover honey harvest. We must bear in mind that, when any colony is in a normal condition, it takes 37 days from the time the egg is deposited in the cell by the queen before the bee coming from that egg enters the fields as a laborer; and as the white clover comes into bloom about June 15 in this locality, the eggs for our laborers in that harvest must be deposited in the cells from May 5 to 12. Now, up to May 15 even an average of my queens can and do lay all the eggs that the bees of their colonies can cover and mature; hence, to go through with the work of introducing two or more queens to any colony prior to this date would be altogether unprofitable and useless, to say the least.

Let us now go back to the two-queen colony. It appears that the queen laid at least one-third more eggs than the bees could mature prior to May 15; but after that time the bees began to cover more and more of the eggs and mature them, so that about June 1 to 10 the hive was completely filled with brood. However, as this brood developed into bees during the period of partial or complete dearth which we have upon the waning of the clover, just before the opening of basswood, these bees became consumers of the honey already gathered, rather than producers, and therefore did not add to the crop of clover honey. In other words, it took honey from the colony to produce them, and then again to keep them alive after the honey harvest from clover was past, so they were not a profitable investment with the exception of those that lived only into the basswood bloom. And even then this colony gave no greater yield from basswood than did others which had only one good queen. In looking up the history of the larger share of those who are championing the plural-queen system I find that the majority of them are interested in the fall crop of honey more than any other; and to such as these, where a plurality of queens can be successfully worked so as to bring a *great army* of bees on the field of action just when the thousands of acres of buckwheat or other late honey-producing flora are at their perfection, there can be no doubt about the practicability of the plan. But from all of my experience in this matter *one good queen* will lay all the eggs that the bees can brood so that the bees from these eggs will be of advantage in the *white-clover* harvest.

But I hear Dr. Miller saying, "*I am all interest in this matter because the bees do not swarm with two or more queens in one colony.*" But, doctor, this colony *did* swarm; and not only this one, but enough of others which were used with two queens, separated with queen-excluding metal, to make me see that the non-swarming part of it can not be depended upon. Over half of the colonies used with two queens have swarmed; but I will acknowledge that swarming seemed to be delayed to quite an extent; and when delayed long enough so that the honey-flow began to wane, such colonies did not swarm, just as colonies having only one queen do not swarm when, for any reason, they are delayed till the honey harvest is nearly over.

Then I hear another one say, "By the use of perforated metal we can keep two queens over winter in one colony, so that we can have queens to replace any poor ones in the spring, give to queenless colonies, or to sell, so that here is a profitable part of this plural-queen system." I really hope he is right, and that others may prove it so, for this would be something of great value to the queen-breeder in our Northern States; but my experience all points to the fact that, *as a rule*, only *one* queen remains in any colony when spring opens up. The colony alluded to, having the two queens when set from the cellar, is the only colony which I ever knew that had two good laying queens to begin the season with, no matter whether perforated zinc was used or not. To be sure, two queens can be wintered in one hive, the same having a thin partition of wood or some other thin substance to divide the bees into two separate colonies, but such can hardly be said to be along the line of the plural-queen system. After finding the two queens in one colony I thought I could have two queens in as many colonies as I desired in early spring; but in this I have only failure to record.

But the most serious part of this whole matter is that the majority of our every-day practical bee-keepers do not seem to succeed in keeping two queens (to say nothing about several) in any colony for any length of time, at any time of the year, except on certain occasions, and those occasions do not come oftener than once in three or four years. I have read over and over the third, fourth, and fifth paragraphs in Mr. Alexander's article on page 1135, in which he set forth the ease and cartainty of this plural system, and asked myself the question, "What is the reason that Doolittle and others do not find the thing a success as Alexander did?" As a rule, the first thing the bees in the upper story do is to persecute the queen which we desire they shall consider on the same terms they do the one in the lower hive. I have not only used one excluder, but two and three, these latter being separated from one-half to one inch apart; but nineteen out of every twenty queens so tried are killed or balled, and persecuted till they are of no value. This plan would be most valuable for making nuclei could it prove in the hands of the rank and file a thing of ease and certainty. At the time "Scientific Queen-rearing" was published I thought it was no trick at all to get queens fertilized from upper stories with laying queens in the hives below, as I succeeded to my perfect satisfaction during the basswood flow of 1888; but twenty years of trial since then has proven that I have to record nineteen failures to one of success, taking the score of years together. The many private letters I receive also show that I am not alone in these failures.

# NOTES FROM CANADA

By R. F. Holtermann.

In the *Bee-keepers' Review* for October, page 304, a writer whose name is not given, but whose letter is well worth reproducing, makes the following statement in regard to shade for hives:

"Again, it has been said by some one that bees were better with hives right out in the sun. Some of our hives stand in the sun; some have shade part of the time, and some shade all the time. Now as to present results: Some of the hives that are in the shade all the time show the best yields of honey."

The above is my experience. If it can be arranged, sun in late spring and autumn is all right; but I can get the best results by having the hives shaded during the swarming season.

In regard to Italian bees, this same writer says:

"Have you not said a good deal in favor of the 'Superior' stock? My apiary here was originally all black, the kind that I don't like—little nervous devils that are so hard to handle. Two years ago I introduced queens from Moore and Laws. This spring the yard would run about half and half. We have had a very good crop of white-clover honey, and we tiered up until near the end of the flow. Now, as we go through the yard we should expect the Italian stocks to show some superiority in amount of honey stored; but they don't. Some of the biggest stacks are on the pure black colonies. However, I am killing the black bees off as fast as I can."

To these remarks editor Hutchinson adds the following, which my experience confirms in the fullest manner when comparing black and Italian bees:

"I have known for a long time that, in a good honey-flow near home, as is often the case in white clover, no strain or variety of bees can surpass the pure blacks; and when the harvest begins to wane, when the nectar must be sought for far and wide, then the Italians hang on while the blacks do practically nothing; all things considered, the Italians seem to be the best bees for this country."

I am rooming here at the National convention at Detroit with Mr. W. D. Wright, one of the New York State Inspectors of Apiaries. Wide experience has taught Mr. Wright that, where disease is at all prevalent, it is better to have Italian bees. I have noticed far more ordinary dead brood in black colonies than in the Italian or Carniolan; in fact, such is rare with Italian or Carniolan bees.

The attendance of Canadians at the National convention is excellent—probably greater than at any previous convention of the organization, and the attendance of all at the opening session is, I believe, greater than at any in its history, and so said George E. Hilton, the president, in his opening remarks.

### CAN A SWARM TRAVEL LONG DISTANCES?

I recently met two fishermen who related to me an incident of great apicultural interest. These men stated, and there is abundant evidence to corroborate it, that, while sailing on Lake Erie, a large swarm of bees was seen coming from the North. The swarm passed the searchlight some three miles from Erie city, and landed at that place, where it was hived and is now located. I was asked where the bees came from, and I unhesitatingly stated, as had others, that they must have started from the Canadian shore of Lake Erie, traveling right across the lake. Granting that the bees came from the extreme end of Long Point, they would have to travel 46 miles over water. Bees would never leave the United States shore to travel out a distance and then return, as they would have to do in case they came from the United States; and a bee-line or any thing like it from Erie to the searchlight, and then continued, would lead to the Canadian shore.

I recently related the above to Jas. Armstrong, Cheapside, and he told me the following incident:

Some thirty-three years ago a man by the name of E. Harrison, township of Walpole, county of Haldemand, Ontario, cut a tree on Peacock Point, which runs out into Lake Erie, and the tree contained a colony of fine Italian bees. At that time there were no Italian bees in the district that either Mr. Harrison or Mr. Armstrong knew of, and both gentlemen believed that this swarm had crossed the lake from the United States—a distance of over 50 miles. It is rather singular that two such facts should come under a bee-keeper's notice within a few weeks; and, being so reliable, they are well worth recording in apicultural history, and they pretty well prove that a swarm can travel a long distance.

# GLEANINGS FROM OUR EXCHANGES

By W. K. Morrison

### BLUEING IN BEET SUGARS.

Bee-keepers will read with peculiar interest the following excerpt from the October issue of a recognized authority on the subject of beet sugar:

Most manufacturers who resort to blueing of sugars use ultramarine blue for the purpose. Of late it has been proposed that indathrene be used instead. It is claimed that it has all the advantages and none of the disadvantages of the ultramarine blue, which frequently decomposes with the production of sulphureted hydrogen. When the sugar is heated and contains traces of acid, it may be said that this chemical action is a great disadvantage, as certain jam manufacturers refuse to use blued sugar in the preparation of their products. The indathrene blue contains no sulphur and undergoes no change, even when boiled with acid syrups. Alkalies are without action on this product. It is claimed that blued indrathrene sugars have excellent keeping powers and resist all action of light and moisture. It has been apparently demonstrated that no physical harm can possibly be derived from eating sugars blued with indathrene.—*The Sugar Beet.*

### FRUIT-TREES FOR HONEY.

Most of the northern fruit-trees are good for bees; but this is not so true of the tropics, where some of the leading fruits are unnoticed by bees. This is true of bread-fruit, sour-sop, cherimoyer, sugar-apple, pineapple, mangosteen, durian, and some others of less value. On the other hand, some equally important are honey-yielders. For example, the mango, which is the apple of the tropics, yields some honey, as also the banana family. That exquisite fruit, the avocado, is a fair yielder, and so are star-apple, sapodilla, golden apple, Malacca apple, guava, rose-apple, and a number of others not so well known. The cocoanut yields well, and nutmegs supply nectar every day in the year. The date is a heavy yielder. A well-known wild fruit, the hog-plum (*Spondias lutea*), yields heavily for five or six weeks. Coffee and tea are both honey-plants, but cacao, or chocolate, is indifferent.

### BEES PUNCTURING FRUIT.

Mr. Peirce, the bee-man of Zanesville, O., has had an experience the past summer which tries men's souls. One of the local papers made the statement that grape-growers in a certain section of the city were having their grapes destroyed by the attacks of bees. It was not difficult to tell whose bees were meant. Mr. Peirce replied to this in a rival newspaper belonging to a different political party. He showed that bees notice only injured fruit, and that, so far as bees being a menace was concerned, the opposite was the case, since they are the chief agents in fertilizing the blossoms. He followed up this argument by stating that the courts have repeatedly upheld the bee-keeper when his right to do business was attacked. The latter was delivered as a sort of clinching argument. In any event, he has heard nothing since.

But we must be careful, for this is an age when everything is "regulated" It is a good thing to keep the soft side of the local editor.

### L'ABEILLE ET LA RUCHE.

Mr. Dadant has gotten out a new edition of the above work. Of course, most of my readers will understand that it is the revised version of Langstroth's great book, "The Hive and the Honey-bee," written in the language of France. It looks very much like the English edition in every respect, except that it seems a little better executed as regards paper, printing, and binding. The publisher is Burkhardt, of Geneva, Switzerland. So far as as I can see by a rapid examination, the translation is as accurate as it can possibly be. The book is so well known to bee-keepers all over the world that to praise it would be a work of supererogation. In French Canada, Louisiana, the West Indies, and elsewhere on this side of the Atlantic, "L'Abeille et la Ruche" should have a large sale among bee-keepers. It is a complete guide to bee-keeping, written by two great masters in bee culture — accurate, scientific, and up to date. It is sold at a very reasonable price, so that French-speaking bee-keepers have no excuse for not owning a copy.

### FOOD VALUE OF SUGAR AND HONEY.

There is a widespread idea that sugar is only a condiment and not a food. It is very difficult to combat such fallacies, as they are ingrained and form part of the personal character. The latest authority to try to stem the torrent of public opinion is Prof. Landouzy, dean of the medical faculty of the University of Paris, whose opinions on the subject are being given wide publicity by the newspaper press, both here and on the continent of Europe. He says sugar is not a condiment, and recommends it for the army as a strength-producer, as it has the advantage of being used up by the system almost instantly. Laboring men are advised to use it as a food, not merely as a condiment in tea and coffee. Of course, what he says applies with double force with regard to honey, as it stands ahead of sugar in the rapidity and ease with which it is used up by the human system. Formerly we were taught that the carbohydrates are useful only as heat-producers. The new school has thrown away that idea. In the next war the soldiers will make forced marches on a diet of chocolate creams made of honey, chocolate, and sugar.

### PARCELS POST MISREPRESENTED.

An editorial in *The Shoe and Leather Gazette*, opposing parcels post, is being widely published by the papers favoring the present system. It is a gross misrepresentation. It says: "The uniform rate would not work equitably. It would enable a big manufacturing concern in one part of the country to swamp or crush out local competitors all over the country. It would help build up the great retail mail-order houses. It would enable them to reach all parts of the country and undersell the local merchants because it would cost them no more to deliver their goods 1000 miles away than it would cost the local trader within his own village." This is a gross misrepresentation, for the facts are entirely to the contrary. The Postmaster-General proposes to allow local dealers to mail 11 pounds for 25 cents to persons on rural routes in the same locality. For long-distance packages the rate would be $1.32, which is quite a difference. *The Shoe and Leather Gazette* can rest assured the farmers of this country are not stupid men. They can see clearly the tremendous opposition to parcels post

comes from people who have an ax to grind, namely, the express companies. The mail-order concerns are not anxious for parcels post.

ALFALFA FOR HORSES.

Mr. Joseph E. Wing, that prominent authority on alfalfa culture, says that for feeding to horses alfalfa should be allowed to grow till it is fairly *mature* before being cut. Sometimes it does not quite agree with them when first fed; but they soon become accustomed to it, and they are actually better for it. They take on flesh, work better, and feel better.

The last crop of alfalfa he does not think should be fed to horses, as it is not mature. The coarser crops grown earlier in the season are better. Neither horses nor mules should be fed all the alfalfa hay they will consume, as it is too rich a feed, and they do not need so much of it. This knocks the bottom out of the argument that alfalfa should be cut before it blooms, and "Joe" knows what he is talking about. He also says there should be no mold on the hay. That is an excellent point. There is only one remedy, and that is to cure the alfalfa under hay-caps in the field. When finally put into the hay-mow it will not mold or rot, because it has been thoroughly "sweated" already.

NEW BEE-KEEPING TERRITORY IN THE FAR SOUTHWEST.

If the Imperial Valley will hold no more bee-keepers until Harriman waters that small matter of 1,500,000 acres we must look around for other fields to conquer. There is some room at Yuma, on the government reclamation project, which will soon be ready. Then there is the great Salt River Valley project; but probably this will be fairly well occupied by bee keepers now on the spot. There will be 300,000 acres of irrigated land at Parker, Arizona, where some one is building a great bridge over the Colorado River. There is a considerable body of irrigated land at Needles, on the Colorado, and more will be reclaimed. There are 40,000 acres available at Palo Verde, on the California side of the Colorado. The U. S. Reclamation Service has in mind an immense project on the Colorado, embracing Utah, Arizona, and California, which will cost in the neighborhood of $40,000,000. That's some money to spend on a dam. This would completely dwarf the great Assouan dam on the Nile, and make a great paradise for bee-keepers, as alfalfa, dates, and oranges would be the leading crops. The date is a fine honey-yielder, excelling alfalfa, in my opinion, and, of course, the blossoms are not cut.

New Mexico, too, is forging ahead, and ere long will cut a figure as one of the important honey States. When the immense Elephant Butte dam is completed, a great stretch of land will become available for bee-keepers. Around Deming, pumping-plants are doing wonders in bringing lost rivers to the surface, and probably large areas elsewhere can be reclaimed. Southern Utah (Utah's Dixie) holds much in store for bee-keepers. Even oranges will grow, and the date is hardier than the orange. Southern Nevada, too, is making headway, and for fruit culture they claim to have California "licked," whatever that may mean. Oranges grow there also, but figs are in their glory and so are grapes.

Date culture will help bee-keeping, and I opine Texas will stand an excellent chance in this respect. Florida might cut quite a figure in date-growing, and probably the Sea Islands of Georgia and South Carolina. Dates do well in Bermuda and the West Indies, and it is amusing to see the bees at work on the blossoms They simply crawl over the blossom as they do on a feeder until they fill up.

THE LORE OF THE HONEY-BEE, BY EDWARDES.

At last we have a rival to Mæterlinck, who not only writes well but knows bees and bee-keeping with certainty. It is evident that Mr. Edwardes is a bee-keeper, and keeps himself well informed on the latest developments in practical bee-keeping. For example, on page 96 he says, "If, therefore, the new system of plurality of queens both justifies and establishes itself, the near future may see a revolution in all ideas relating to beemanship. All that can be said for certain at present is that as many as five queens have been induced to occupy the same hive in peace and quiet together; but whether this portentious state of affairs can remain a lasting one is still to be proved.

"A curious and (to the expert) a startling outcome of these efforts to break down an old and almost universal custom in bee-life is that the successful establishment of several mother-bees in a single hive appears to lessen the swarming impulse. Hives so treated do not send out a swarm, so far as is known."

He is also at home on the physiology of bees, as his remarks on the morphology of the queen will show. On page 100 he says, "If the egg deposited in the queen-cell be removed, and an egg taken from any one of the thousands of worker-cells in a hive be put in its place, the worker egg will always produce a fully developed and accoutered queen-bee. On the other hand, if an egg be taken from a queen-cell and placed in a worker-cell it will infallibly hatch out into a common under-sized worker. It would be sufficient tax on the credibility if the differences of queen and worker were only those of degree. If the queen were nothing but a large-sized worker-bee, on which certain organs — which were atrophied in the worker — had received their full development, it would be a fact within comprehension; but the queen differs from the worker, not only in size and the capability of her organism, but also on several important points of structure. And how can mere food and air and circumstance produce structural change? The worker has many bodily appliances—special members ingeniously adapted to her daily tasks, of which the queen is wholly destitute; while the physical organism of the queen varies from that of the worker in several important degrees.

"Some of these must be enumerated. The abdomen of the worker is comparatively short and rounded; that of the queen is larger and longer, and comes to a fairly sharp point. The jaws of the queen are notched on their inner cutting edge; the worker's jaws are smooth like the edge of a knife. The tongue of the worker has a spatula at its extremity, and is furnished with sensitive hairs; the tongue of the queen is shorter, the

spatula is smaller, while the hairs show greater length. The worker-bee has a complicated system of wax-secreting discs under the honey-plates of its abdomen; in the queen these are absent, nor can the most elementary trace of them be discovered. In their nerve-systems the two show difference, the queen possessing only four abdominal ganglia, while the worker has five. The queen's sting is curved, and longer than the worker's; the sting of the worker-bee is perfectly straight. On their hind legs the workers have a curious contrivance which bee-keepers have named the pollen-basket. It is a hollowing of the thigh, the cavity being surrounded with stiff hairs; and within this the pollen is packed and carried home to the hive. In the queen, both the cavity and hairs are absent. Her color, also, is generally different from that of the worker bee, her legs in particular being a much redder brown.

"Here is a problem for our great biologists—a problem, however, at which the plain every-day man may well flinch; for we seem to have come face to face with new principles of organic life—facts incompatible with the accepted ideas of the inevitable relation of cause and effect. The irrestible tendency at this stage is to hark back—to repeat the experiment of the transposed eggs, and see whether no vital, initial circumstance has been overlooked. But the result is always the same. Nor can the most careful microscopical dissection of the eggs themselves reveal any differences. In this mystery of the structural variance between queen and worker, it would seem that we are forced to accept one of these alternatives: Either the egg contains two distinct germs of life, one developing only under the stress of hard times; the other, only the call to luxury; or we must go back to mediæval notions, and believe that the worker-bees give or withhold some vital principle of their own during nurturing operations; or we must give up the problem and decide that creation works on lines very different from those on which we have hitherto grounded our faith."

Here the author does a distinct service to bee-keeping by calling attention to a weak point in our knowledge of bee-life. Why can't we solve the riddle? Dickel and Kuckuck, in Europe, are trying their hand at it. Our theory of parthenogenesis is defective. Who will give us a better one? The parthenogenesis of the bee is different from that of most other insects and animals, and for that reason we can not apply to the regular biologists for an answer to our questions.

I make these citations to show the author is a deep student of bee-life. We want more writers like him. We want men who can get us out of the rut and keep us out.

On p. 125 the author commits one error in supposing no one has seen a queen lay in a queen-cell. She certainly does, and has been seen doing it. If he wants certain proof that a queen will lay in queen-cells, let him get a copy of Mr Pratt's book, "Forcing the Breeding Queen to Lay in Cell Cups." He can try the experiment himself.

Our author hazards a guess that bees may have senses we do not possess. For example, he surmises they can transmit thoughts without the aid of speech by means of their antennæ; or they may go further, and transmit thoughts through space by means of a sort of wireless telegraphy. It seems reasonable.

I think the quotations given will show "The Lore of the Honey-bee" is an eminently readable and instructive book. It is about the same size as Mæterlinck's book, "The Life of the Bee," and is on the same general plan. Mr. Edwardes has an advantage over Mæterlinck in making statements true to fact, while the other is often imaginary. The Belgian, however, makes up the difference when we come to consider the elegance of diction and subtlety of expression; in fact, no man living quite equals him in fine writing and pure eloquence. Both books are worth owning if one likes good reading. There are several very fine half-tones in "The Lore of the Honey-bee." The printing is excellent. It would have been better to have a nicer binding, in keeping with the rest; but that is a small matter. The publishers are Methuen & Co.

# BEE-KEEPING AMONG THE ROCKIES.

By Wesley Foster.

### HONEY PRICES.

Producers on the western slope in Colorado have sold comb honey in single-tier cases at $2.25 to $2.50. This is somewhat below the price secured on the eastern side of the mountains, on account of the higher freight rates, and because the honey was not graded according to the new rules, which allow for a No. 1 light-amber grade, the quality of most of that honey.

Several producers have sold to dealers and buyers at $2.30 to $2.60, but this honey was not graded strictly according to the new rules, but was good weight. Honey graded and packed according to the new rules sold from $2.60 to $2.80 per case in double-tier cases. White extracted can be had at 7 to 7½ f. o. b. cars in several places in Colorado. None of my honey has been sold for less than $3.15 for No. 1 white, and most of my No. 2 has been at $3.00 per case, put up in double-tier shipping-cases of 24 lbs. each.

### HONEY EXHIBIT AT THE COLORADO INTER-STATE FAIR.

The exhibit at the Colorado Inter-State Fair, held in Denver, Sept. 7 to 12, was very good, for the size of the honey industry. There were few exhibitors, but they made up for this in the size and quality of the exhibit. The prizes were liberal, and paid the exhibitors well for the time and expense, besides advertising their goods in a very effective way. Bees in observatory hives drew the crowds, as did the demonstrations with live bees each afternoon by Pres. Collins, of the State Association. Mr. Collins' talks were very instructive and interesting, and he took a prize too, as a partial reward for his time. The real reward, however, will come in the added consumption of honey, which he strongly urged.

The ventilating-holes in the bottom of an observatory hive soon fill up with dead bees, and

are rendered useless. They should be on the end of the case instead of on the bottom. There is a marked difference in the length of time that bees live in the confinement of an observatory hive. A one-frame hive of Italians played out in about two weeks, even with frequent flights, while another one-frame hive of Italians have been in the glass hive in confinement most of the time for seven weeks, and still preserve the spirit of a well-ordered community.

An exhibit of bees and honey which my brother Wilbur put into a grocery in Boulder elicited so much interest that he was asked to give a talk with the observatory hive to the schoolchildren. This he did, and the attention and interest of the children were marked. The teachers questioned the children the next day, and found that they remembered every thing that was said.

Bees and honey are much more fruitful subjects than breakfast foods, and we should use as much energy in pushing our goods as the shredded-corn and toasted-oat manufacturers.

### THE PAST SEASON'S CROP IN THE WEST.

Northern Colorado had a failure so far as shipping honey is concerned, only one car so far being sent out. The average yield per colony would not amount to more than seven or eight pounds.

Logan County, in Northeastern Colorado, had a fair yield, several cars being produced.

The reports from Southern Colorado and the Arkansas Valley are better, though no big yields have been recorded.

Western Colorado, or Delta, Montrose, and Mesa counties, have generally reported a good crop; several say it is better than that of 1907.

No report has come in from Montezuma Co., in the southwestern corner of the State; but in Northwestern New Mexico, which is just over the State line, no surplus has been secured from the parties answering inquiries.

Southwestern New Mexico has produced a good crop—much of it mesquite honey.

Arizona also has turned out quite a quantity of alfalfa and mesquite.

Nevada reports some honey. It is likely that the men who have honey answer the inquiries, and those who have none do not answer.

Utah is from good to bad, the Uintah country producing nothing for shipment, and the reports coming from north of Salt Lake, around Logan, are good.

Idaho had a fair yield, as did Wyoming, where there is sufficient alfalfa. One sample of Wyoming comb honey which I saw was very fine, and showed that the district from which it came had enjoyed a good yield.

Honey-dew was plentiful in several districts in Northern Colorado. The trees in Boulder dripped with it, and the bees literally covered the leaves. This lasted for fully two months, and what bees were close to the mountains and in the older settled parts suffered worst.

### OBJECTIONS TO THE SINGLE-TIER CASE.

Comb honey is not wanted by the dealers in single-tier shipping-cases. Several cars of comb honey could be sold in the next week if the honey were put up in double-tier glass-front cases, and there are several cars of comb honey in Colorado packed in single-tier cases, some without glass, and also lacking drip-sticks, and it would have paid the producers to study the market requirements more, and paid less attention to the few cents saved on a case. The objections are as follows:

First, in handling a carload of honey in single-tier cases one will feel twice as tired as after handling the same amount in the double-tier. One can not get the hand-hold as close to the edge as with the double tier, and there is less room for the fingers.

Second, if a case is picked up by the corners it will often twist enough in carrying to break or crack some of the honey. This is almost sure to occur if one carries two cases at a time and does not grip them just right.

Third, the top of the sections is flush with the top of the sides of most of the single-tier cases, making breakage almost sure. In shipping, expressmen and freight-handlers drop the end of one case in the middle of another case on the pile; and if they do this at all roughly the breaking of comb is certain. Cases are stepped on often, and a single-tier case simply will not stand this usage, while a double-tier case with half the surface is safe, provided there is an eighth-inch space between the cover and the top of the section.

Fourth, from the grocer's standpoint, the glass in a case is for showing the goods; and the more goods that are shown, the better the impression, and the more honey sold. Furthermore, it is a guarantee that at least a fourth of the honey is all right if a double-tier case is used.

Fifth, a single-tier case takes up twice as much room on the counter, showcase, shelf, or floor; and since one can not put any thing on top of it and still get honey out of it, the saving of half the floor space by the use of the double-tier places it far in the lead.

The objection brought against the double tier is that broken honey wil leak on to the section below. Leaky and broken honey should not be cased for shipment any way, and experience shows that this objection is not worth considering.

There was a time when the production of the Rocky Ford melon was nothing. Several wise heads among the growers got together and decided on a plan of action. First, they had to teach the growers how to raise melons; then they united on the pony and the standard crate; and when they got the farmers so they could produce a good melon put up in the best crate obtainable they sent several carloads east and gave them away — making the people eat them. They had to have cars made right to carry off the gas from the melons and ventilate the car.

Bee-keepers must take much the same course. They must learn to use separators and honey-boards in place of sack covering for sections. No man but an expert with a fast flow can raise good honey without them; and who can positively foretell a fast flow? A uniform case, the double-tier glass front, has been adopted by Colorado bee-keepers. Let all use it, and grade strictly according to the rules.

Comb honey produced, packed, and pushed with the energy devoted to the Rocky Fords can meet with the same success.

# GENERAL CORRESPONDENCE

## EXTENSIVE WAX-RENDERING.

### Buying the Combs from Dead Colonies to Render for Wax; the Manley Wax-press.

BY E. D. TOWNSEND.

Two familiar figures at our State convention for the last few years are the Manley brothers, of Sandusky, Sanilac Co., Michigan. They are the parties who apparently turn failure into success; and I think I can not do better than to tell of some of their experiences as they have told it at our State conventions; then the reader will better understand what I have to say about their wax-press and method of rendering wax, and how they secure the material.

Sanilac County is low, level, and very fertile, quite a considerable portion of it being on the swampy order. Years ago, when the country was new, it was swept with forest fires until there was not much of the natural forest left. Later, in this burned district came clover, willow, and asters—the latter, sometimes, in a favorable season, yielding a large quantity of surplus honey. This aster honey is what makes the trouble, for during the winter after a season when the asters yield honey, nearly every colony of bees in this locality dies, sometimes only two or three colonies being left out of a yard of between 100 and 200.

A little incident illustrating how much confidence the bee-keepers in this location have in their ability to winter bees came out at our State convention at Saginaw last fall. A bee-keeper of this district having a yard of about 100 colonies, sold the lot for an average price of $1.12½ per colony. This price was based on the value of the hives, combs, and honey, the bees not being considered, as they die early in the winter. Whole yards are often dead in February, and the honey left amounts to considerable.

The Manley brothers are farmer bee-keepers, and after the winter loss they scour the country for miles around, picking up wax material. They pay about 25 cents a set for the combs, and something also for the honey. A galvanized steel tank is taken along, as well as some large boxes. The empty combs are cut out into the boxes, and the honey-combs into the tank. This honey is afterward melted and strained, and sold to the bakeries. In this way they have no trouble in buying nearly every lot they come to, for most of these combs would be left to the moths, and the owner would receive nothing for them.

At our State conventions in years back the Manleys have been asking for instructions to make a wax-press that would render wax economically, as they were in the wax business extensively, and could not tolerate the slow-working presses on the market. They had tried the plan of working several presses at a time, which helped matters somewhat; but they were not satisfied, as they wanted something that would handle a large quantity of old combs, but there did not seem to be any. At our last convention at Saginaw, Mr. W. J. Manley reported very good success with a press which they had gotten up; by request he describes it here:

There is nothing original about this press as I stated at Saginaw. It is a sort of combination of the Hatch, Root, and Hershiser ideas, and the press is only one feature of the process. However, I have experimented extensively, and it is the best thing I have found yet. I rendered over 1500 lbs. of wax with it last spring, and was very much pleased with it. It is not perfection; but I can take the oldest, blackest brood-combs and turn out 20 to 25 lbs. of fairly good wax per hour, and make a thorough job of it too.

The press is a built-over Root-German—in fact, it is all Root-German except the can. The new can is built of heavy galvanized steel, is 15 inches in diameter, and 18 inches high. Two inches from the bottom a spider is riveted, for the perforated basket which contains the combs to rest upon. This arrangement provides for plenty of water to circulate under the cheese, on the Hershiser principle of the washing-out of the wax, as will be explained later. We transferred the Root screw and plunger, with oak cross-arm, into our press, and also the perforated iron basket. We had to reinforce the follower with a plate of iron on top to keep the wood from warping; also the oak cross-arm, to keep it from springing. We had trouble until we did this. The two lugs were riveted to the top rim of the tank for the burrs on the cross-arm bolts to slip under, as on the Root-German.

A large-mouthed sack, like a potato-bag, is the best thing we have found to hold the combs, when the top is cut off to the desired length. The combs can be more securely held than in a square piece of burlap, especially when they are being submerged. Besides, it does not require so many square feet of burlap, which is important. We press only one cheese at a time. As we use two boilers we do not attempt to melt all the combs that could be melted in each one, but simply fill each boiler in its turn with dry combs tramped in moderately tight. If the combs are old, hard, and black, we find about two eight-frame Langstroth brood-chambers furnish enough material for a batch; if only moderately so, four or five sets of combs can be run in a batch.

We then pour in water until it comes up two-thirds of the way in the boiler. This will all go into the press nicely in one batch, and *furnish plenty of water to make a thorough job* of it. The contents of the boiler are kept stirred, and, when melted, are dipped and poured into the sack previously arranged in the press. The top of the sack should be straightened up, and held in this position until the free wax and water work out into the press-can; then the top of the sack is rolled or folded down, the plunger put in, and pressure applied. In handling the hot sack gloves are worn.

In the washing-out process we raise the plunger usually twice by unscrewing it a little and allowing time for the slumgum to become saturated with water; then screw down again. This part of the process does not take more than ten minutes; for where there is only one cheese, and that not over one inch thick at the most, the wax can escape readily into the water in every direction as pressure is applied, and the work is soon done. We have never tried more than one cheese in this press; it is too slow and fussy. We have tried putting the slumgum through the second time, but it does not pay since using this press.

When through pressing, while the plunger is still screwed down tight, the hot water and wax in the press are emptied into a wash-tub provided for the purpose. We use but one tub for this purpose, and also use this same hot water for the next batch. There is a little knack in cooling the inch or so of wax that is on top of the water in the tub, without cooling the water underneath to any great extent. It is accomplished by splashing on cold water in sheets, thus causing the wax on top of the water to congeal, so it can be removed immediately. This is very quickly done with a common ten-cent sieve dipper, such as housekeepers use for straining soups. Repeating this operation every few minutes in such a thorough manner constitutes the chief merit of this system; thereby we can turn out a large quantity of wax of good grade, in a short time. We have rendered in the last four years nearly 10,000 lbs., but we have used this press during only a part of the last season, and have rendered out about 1500 lbs. with it. An eight-frame Langstroth brood-chamber yields with us about 2½ lbs. of wax on a general average, and extracting-combs from 2¾ to 3 lbs.

We have spent considerable money and time experimenting on the wax-rendering proposition; and this plan of melting the combs in boilers, and turning every thing out into a press that is operated a few feet from the heat of the stove, and down where we can get at it to work, is the most thorough and expeditious of any thing we have found yet. We use the tank of the Root press to remelt this wax, and get it in shape to mold. Our stove is large enough to hold the two boilers and this Root tank all together; and as soon as we get a 5 gallon can (with top cut out)

full of wax in the rough we dump it nto the Root tank, cover it over, and as fast as it melts it runs out of the spout into one of those gravity separating pails described in GLEANINGS three or four years ago by Mr. Aikin. In this way a sort of "perpetual motion" is kept up; and when through rendering the wax it is ready for the market. W. J. MANLEY.

We have rendered our wax this year in one of the new Hatch wax-presses. The wax was handled as near to the Manley plan as possible. Instead of setting the press down near the floor, it was elevated so a wash-tub could be put under the spout. We dip the melted combs from the boiler into the press with a large dipper, continuing this until only enough water and wax are left in the boiler, including what there is already in the press, to fill the press-can within about an inch of the top. Previous to this the wax and water were allowed to run out of the bottom of the press as usual; but now the outlet at the bottom of the can is corked, and enough water and wax retained to fill the can of the press as I have explained. The edges of the burlap should be brought together and twisted, and the pressure applied. The screw is then loosened two or three times to saturate the slumgum with water, on the Hershiser plan. Then on the Manley plan, when the screw is down tight, the water and wax are turned from the top of the can into the tub.

The can of the Hatch press is large enough to hold sufficient slumgum to make a cheese an inch thick, as the Manleys recommend; and by leaving the press open until there is only enough material left to fill the can, the rest is retained to keep the slumgum hot, and more particularly to secure the Hershiser "washout" principle. We succeeded in this way in getting a larger per cent of the wax out of the slumgum than by using the press in the usual way, because, ordinarily, there is some wax that congeals on the burlap, while with the washout principle the burlap comes out of the press clean of wax. Whether the slumgum with this washout principle will need to be run the second time to free it from the wax, I can not tell, having tried it in such a limited way. Ours was run the second time, and it looked as if the second trial would pay; but I am not ready to say it will pay, without more experience. The Manleys make a good point in using two inches of water under the cheese, and lots of it above; the less amount of water used in the Hatch press may make it necessary to run the slumgum through twice, while once is all that seems necessary with the Manley press. One thing I am sure about with the Hatch press worked on the washout principle, in running the slumgum in particular, there was not a particle of visible wax sticking to the burlap, and somehow I felt as if there was less wax left in the slumgum than usual.

I have always used the square Hatch-Gemmell press; but after using the new Hatch press I am sure that the round form is better. The whole cheese can be brought nearer the center, which means that there is less strain on the screw and other parts. Then the round form, with a follower that fits out close to it, prevents any part of the cheese from slipping out at one side, so that it is not pressed. There are also no corners to cool, etc.

Where there are large quantities of old combs to render, or where one is in the wax business as extensively as the Manleys, something larger than the Hatch press will, perhaps, be needed; but for the ordinary bee-keeper having 100 colonies or less, with the wax material as it usually comes from a yard of bees in normal condition, the Root-Hatch press will be satisfactory if worked by directions that come with the press. Then if the slumgum is run through the second time on the Hershiser washout plan as I have given above, there will not be a very large amount of wax left, and the work will not be so very tedious after all.

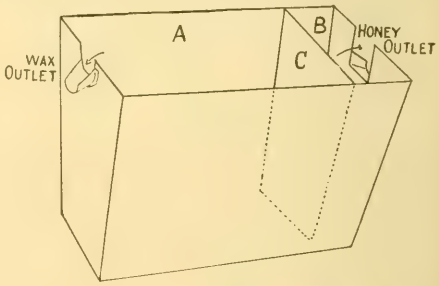
Remus, Mich.

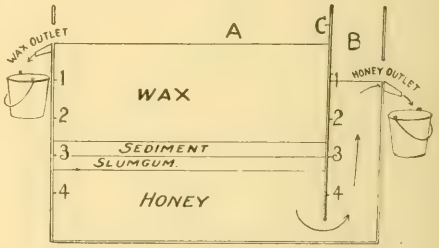
[The process of rendering as described by Mr. Manley is quite similar to the Sibbald method illustrated on page 210, Feb. 15. Mr. Townsend's article was written last March, and at that time Mr. Manley had probably been using the method as described, for over a year.

About two years ago we tried the hot-water plan in connection with the Hatch press; but at that time we felt that the use of the water did not facilitate matters. However, some may find that the plan suits their convenience better. We should be glad to have reports from any others who have used the Hatch press in both ways.

We believe Mr. Manley is right in pressing only one cheese at a time. Where the water can be kept hot, as in the Hershiser plan, so that the intermittent pressing can be kept up for some time, a number of lots of comb can be pressed at once.

For the convenience of our readers we herewith reproduce the engravings illustrating the wax-separator as described by Mr. Aikin in the Jan. 15th issue for 1902, which is probably the separator to which Mr. Manley refers.




We should be afraid that the average person would find it rather difficult to cool the wax on top of the hot water. We have found it a good plan to leave the wax floating on top of the hot water until the work is done. When hot water is wanted, it may be drawn from the bottom of the can through a faucet or gate.—ED.]

## IS DENSE SHADE OBJECTIONABLE?

### Bees Return to Hives from Miller Escapes; How to Grade Honey Properly.

BY J. C. DAVIS.

I thought that the shade might be getting too dense in my apiary, so I trimmed the trees. The upper view shows the yard as it was, and the lower one as it looks now. At the time I did the trimming I was not sure that I was doing the right thing, and I am not sure yet whether the shade was any disadvantage. The best colony in this yard in 1906 was No. 6 in the back row, where the shade was the most dense. The same colony was the second best in 1907. There were about 150 colonies when the photos were taken, September, 1907. The colonies in the front rows get more sunshine, and they winter (or, rather, spring) a little better, and the surplus averages a little more from them. Since doing the trimming however, there is very little difference. The trees are second-growth oak, hickory, and elm.

As may be seen, there is a Miller escape on top of one of the hives in the lower view of Fig. 1. I use both Porter and Miller escapes, and I find them both good. If I have plenty of time I use the Porter; if not, I use the Miller. I have watched closely, and I think that the bees all return to their own hives from the Miller.

Fig. 2 shows section honey as I grade it. I always sell by the case, and the grocers prefer to have it that way when *so graded*. They often sell other ungraded honey by *weight* at the same time.

This has been a very poor season here—about 10 or 15 per cent of a crop from the best strain of Italians, and a total failure from the blacks.

Bethlehem, Iowa.

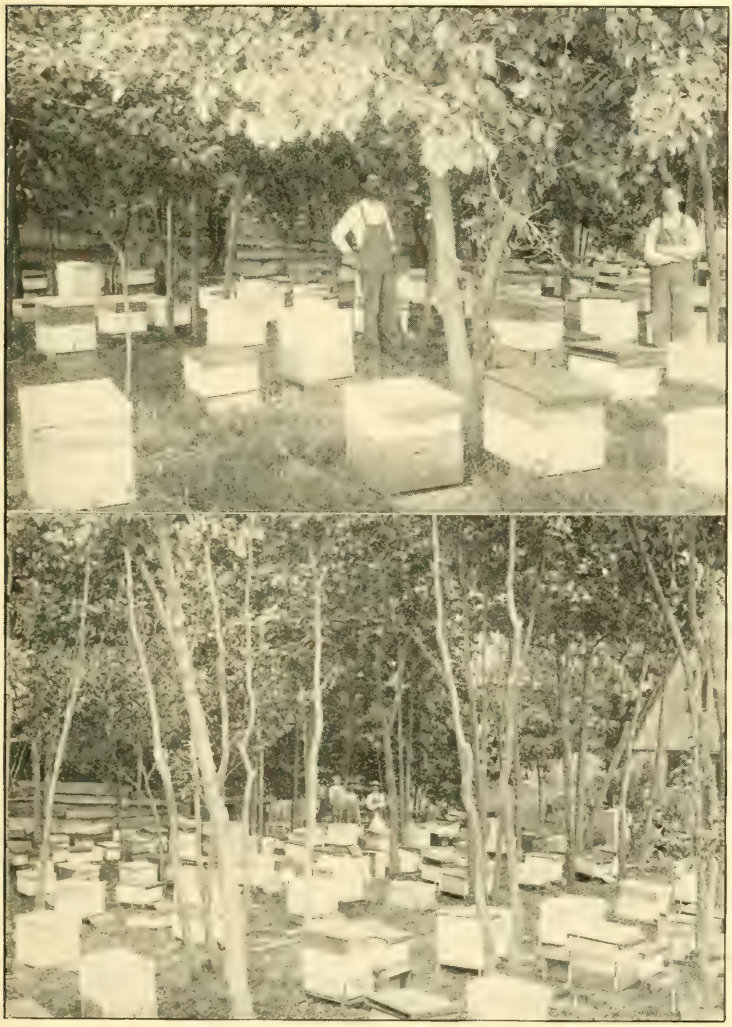


FIG. 1.—J. C. DAVIS' APIARY BEFORE AND AETER TRIMMING THE TREES.
Mr. Davis did not notice any material difference in results after getting rid of the dense shade.

[We believe there is no question but that *too* much shade is too much of a good thing. An ideal shade is that which spreads over the hives only during the middle hours of the day in hot weather; but at all other times it is best not to have any shade, although where one uses natural shade, that is a matter difficult to control, ordinarily. If one uses shade-boards, and applies them just as soon as hot weather comes on he will have to put himself to considerable expense and trouble—that is, the trouble of putting them on in the first place, and then more trouble every time a hive is opened, especially if he uses a 15 or 20 pound stone to hold the shade-board down. But the ordinary shade-boards, unless made very elaborate, do not furnish any adequate shade in the hottest weather. The bees are not fully protected, and swarming is aggravated.

It was the late E.

W. Alexander who said he conducted some experiments along the line of natural shade for a number of years, and generally found that a hive continuously shaded did not do as well as one that had less shade. Others have reported something similar. Still, to settle the question beyond peradventure, we wish that all who are in position to know would state their observations.

The illustration showing three gradings of comb honey is certainly very interesting. We should say, according to the Eastern grading-rules, published at the head of our Honey Column, that the top case would really rule extra fancy, while the middle one would run fancy, and the lower one No. 1 and 2. The tendency, however, is rather to boost the gradings, putting them in a little higher than they rightfully deserve. A comb is regarded "fancy" nowadays when all the cells are sealed and white, except the rows next to the wood. If all or nearly all the cells are sealed, then the grades would necessarily be "extra fancy;" but it is very difficult to get sealing clear out to the wood; and it is a question whether the extra price secured would warrant the extra cost in proportion. Such forcing to get all the cells sealed is likely to induce swarming. It has been claimed that more money can be secured by producing a strictly No. 1 comb honey than by attempting to run for an extra-fancy—that is, combs white and all sealed. We should be pleased to have some discussion on this point.—ED.]

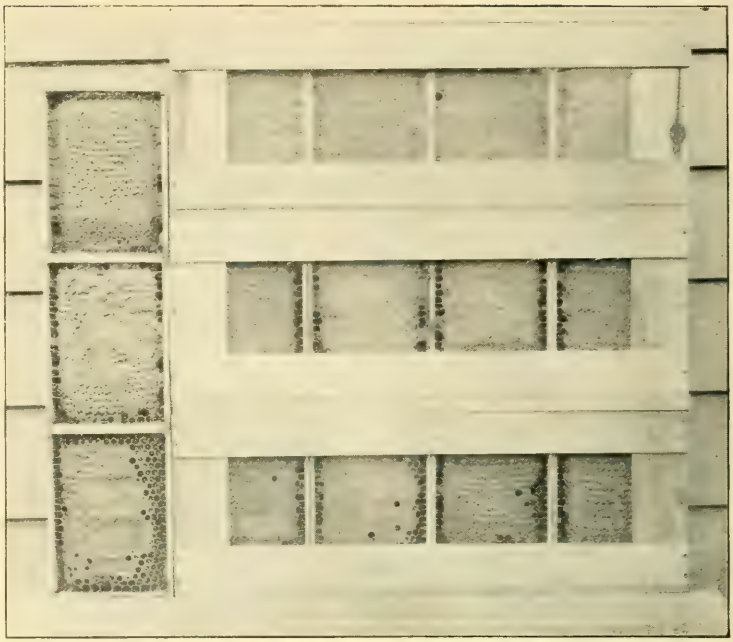


FIG. 2.—PROPERLY GRADED HONEY.
Honey that is carefully and honestly graded may be sold by the case.

## A CONCRETE BEE-CELLAR.

### Good Management Means Good Yields.

BY J. W. DAVIDSON.

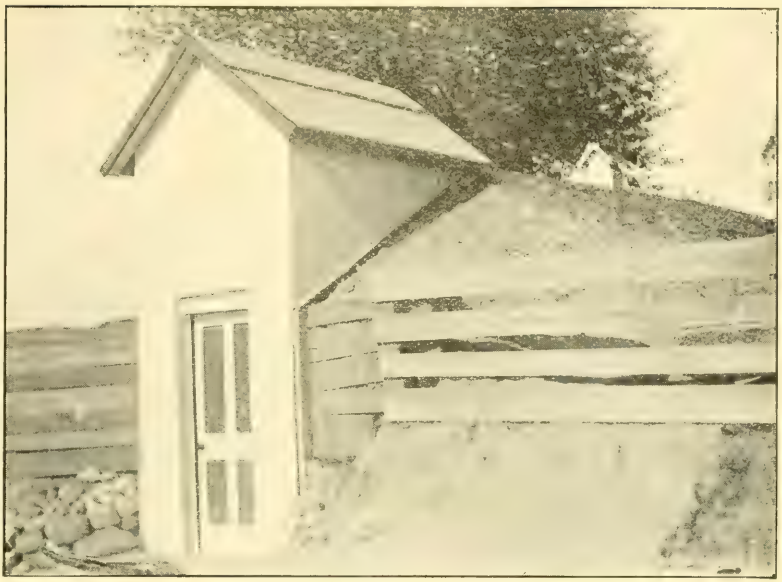
My bee-cellar is built in a northwest slope. The main room is 7 feet deep, 15 feet long, and 10 feet wide. I have a vestibule with double doors at entrance. This cellar is constructed of concrete made of the best Portland cement mixed in the proportion of one part of cement to six parts of sand. The walls are 5 inches thick, and they contain a considerable amount of broken stone. I use a ground floor. For the roof I have two thicknesses of inch oak boards covered four feet deep with clay well tamped to make it absolutely weather-proof. That is, it is covered deep enough to keep weather changes from affecting the temperature. I have also a ventilator 12×12 inches in the center of this cellar, with a shutoff at the bottom, which I keep closed within half an inch during the time I keep the bees in the cellar. Last winter the temperature in the center of this cellar stood 45 degrees all winter. I keep a thermometer hanging in the center of this cellar so I can see at a glance what the temperature is.

Before putting colonies in the cellar I first get them to rear brood as late in the fall as I can so as to have as many young bees as possible to go into winter, then I see that each colony has sufficient stores to carry them through. On the first day during the last week in November, when it is too cold for bees to fly, I put them in. I pile the hives one above the other with a six-inch stand under them on the ground, nothing between hives excepting lids, bottoms left on with full-width entrance ⅜ deep. I examined the bees every two weeks last winter, and found them perfectly quiet on each visit. I set them on their summer stands April 7, without loss. I locate the hives with the entrance toward the wall, but far enough away so I can pass in front to clean out the dead bees occasionally.

I keep all of my bees in modern self-spacing movable-frame hives, all swarms hived on frames containing full sheets of wired brood foundation. Each super is provided with full sheets of foundation, enabling the bees to build comb quickly, thus giving them more time to store surplus. The swarm shown was cast from a colony that produced 180 pounds of comb honey this season.

Before I proceed further I shall have to tell you about my experience at the fairs. I procured one

of your observatory hives and put some of my nicest bees in it on a frame well filled with honey, and also had the super on with nice white honey in it. Then I had, near the side of the hive, a case of comb honey and another containing two extracting-frames of honey, and I do not think that any one passed this exhibit without seeing it, and the first thing they would want to know was how much honey I got this season. I would tell them, and also explain my method of management by showing the hive with the super so convenient for the bees to store in.



DAVIDSON'S CONCRETE BEE-CELLAR.

THIS SWARM OF BEES ISSUED JUNE 7 FROM A COLONY THAT PRODUCED 180 POUNDS OF COMB HONEY THIS SEASON.

I found a number of bee-keepers who still used the box hive without frames, with simply a hole in the top of the box for the bees to go through to store surplus. They said they had a good yield, but nothing to compare with mine, and then I explained the difficulty of bees having to enter the super through a small hole in a box as compared with a hive and super such as I used. This got me into business, and I have booked 60 colonies to transfer next spring if they winter.

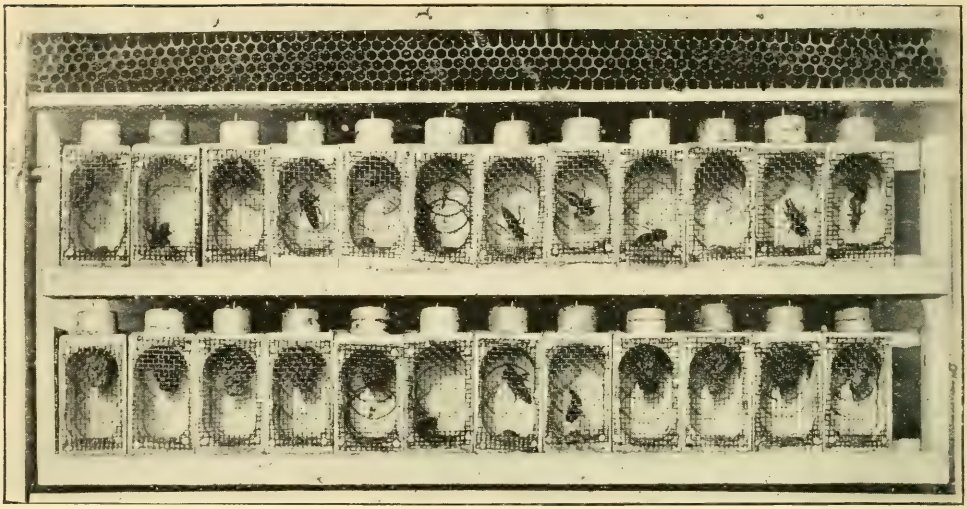
Yorktown, Ind.

## TWO METHODS OF QUEEN-REARING.

BY E. R. ROOT.

Mr. Pritchard, who for some time has reared queens at our north yard on contract, says it is more economical for him, and he thinks he gets better queens by so doing, to give cells, just as they are about to hatch, to nuclei rather than to introduce virgins one, two, or three days old. He found the bees would tease a percentage of the latter, killing some and maiming others to an extent that he lost quite a number of perfect queens; so during last summer he pursued the plan of giving only cells to the nuclei.

Our Mr. J. W. Bain, who has charge of the home yard, has been working gradually toward the other policy, that of introducing one-day-old virgins at the entrance of full colonies and nuclei. He says he has no trouble if his virgins are strong and vigorous, and they are allowed to run at the entrance when *not more than one day old*. When one, two, or three days old a few will be teased



THE BAIN NURSERY CAGE AND ITS USE AT THE ROOT HOME YARD.

or rejected. He accordingly has all his ripe cells attached to wooden cups let down into a wooden cage that he has devised, see illustration, so that, when a virgin hatches, she is in a little wooden box with wire cloth on one side. Within 24 hours she is allowed to run in at the entrance of the hive that is to receive her. To accomplish this the cage is opened so that the mouth of it is directly in front of the entrance of the nucleus or hive, as the case may be. Soon she will crawl out, but may have to be "steered" with a spear of grass until she gets her nose pointed toward the entrance, when she will likely run in. Mr. B. says the fingers must not or better not come in contact with the queen. She must have no foreign odors clinging to her. The younger the queen the quicker she will crawl into the entrance. If too old she will be timid, and this has a bad effect on the bees.

One advantage of introducing young virgins instead of giving cells is that it allows one to select the best queens and discard the others; whereas, when a cell is put into the nucleus, if the hatching virgin is not what she ought to be, time is lost. While she may be removed and another cell given, the whole process has to be repeated.

Another and very important advantage in this virgin plan, says Mr. Bain, is that the cells clear up to the exact moment of hatching, are incubated in strong colonies where colony temperature will always be right. This insures large vigorous light-colored queens all hatching at almost the same hour; whereas, he says, a cell given to a nucleus may suffer a reduction from the proper temperature, and this will necessarily affect the queen within the cell.

In large queen-rearing operations it will happen, however, that it will not be possible to have in readiness a queenless nucleus or a hive for *every* queen before she is 24 hours old. Then one will have to introduce in the regular way, taking his chances on having the queen injured.

The illustration accompanying shows a batch of 24 cells, in as many cages, all of which hatched a queen save those where the cell is seen projecting down, and from which the queens had not emerged. All of these queens were exceptionally large and a bright yellow. They were so beautiful, indeed, that we could not resist the temptation to take a photo of them; but we regret that the reproduction here does not begin to convey the relative sizes and beauty of the queens. They were as handsome a lot as we ever saw, hatching within an hour of each other.

The cage is one that is preferred by Mr. Bain and of his design. It is a simple ⅞-inch block 1¼×2¼ with one side chambered out as shown. This is accomplished by boring three one-inch holes nearly through the wood. Both ends are then bored out, one to receive a cell and the other a feed cup; after which the open side is covered with wire cloth. Mr. Bain prefers to have one side of solid wood so that the virgin has a secure resting-place clear from the reach of any hostile worker that may be in the nursery hive. By having a hole through *both* ends of the cage a queen that is not disposed to go out can be pushed out.

## A SWARM THAT SENT SCOUTS TO THE WALL OF A HOUSE.

BY FRANK C. PELLETT.

Last summer we were remodeling our house, and a large portion of the weather-boarding was taken off one side, and sheeting and building-paper put on. This was left partially unfinished for some time, and we noticed a large number of bees going in and out of an opening for several days as though they had taken up their residence there. Finally a very large swarm came and went at once into the opening. I was ready for them, and filled up my smoker and drove them out at once, when they clustered on a limb of a large apple-tree near at hand, and were soon hived. A few days later we again noticed bees at work there, and they continued to do so for several

days, when a swarm came on as before. This time I was not at home, but Mrs. Pellet saw them going in. After coming home I tried again to smoke them out, but met with poor success, as they had become pretty well established and would return as soon as the smoke let up. After considerable difficulty we reached the swarm through a hole in the partition wall inside of the house and drove them out, only to have them return as soon as we stopped the smoker, so we gave it up. I think, however, the queen was killed in the mix-up, as the bees stopped work and loafed around, disappearing entirely in a few days.

While we had bees ourselves I am satisfied that these came from a distance, and there is no question in my mind but that the advance agents fixed up the quarters to suit their requirements.

About the last week in April I noted a commotion in front of ones of the hives in our bee-yard, and went to see what was the matter. In front of the hive on the alighting-board was a bunch of bees making a big fuss over something. I carefully brushed them aside, only to find a queen badly disabled, but I can not make up my mind whether the bees were driving her out to be replaced by a younger one or whether she was a stranger that had made the mistake of entering the wrong hive. Unfortunately the hive is one in which the combs are built crosswise, so that we could not investigate the conditions within, so are entirely in the dark. I took the queen away from the bees, but she was not able to walk, so was of no value. Will some one with wider observation please tell me the cause of this commotion?

Atlantic, Iowa.

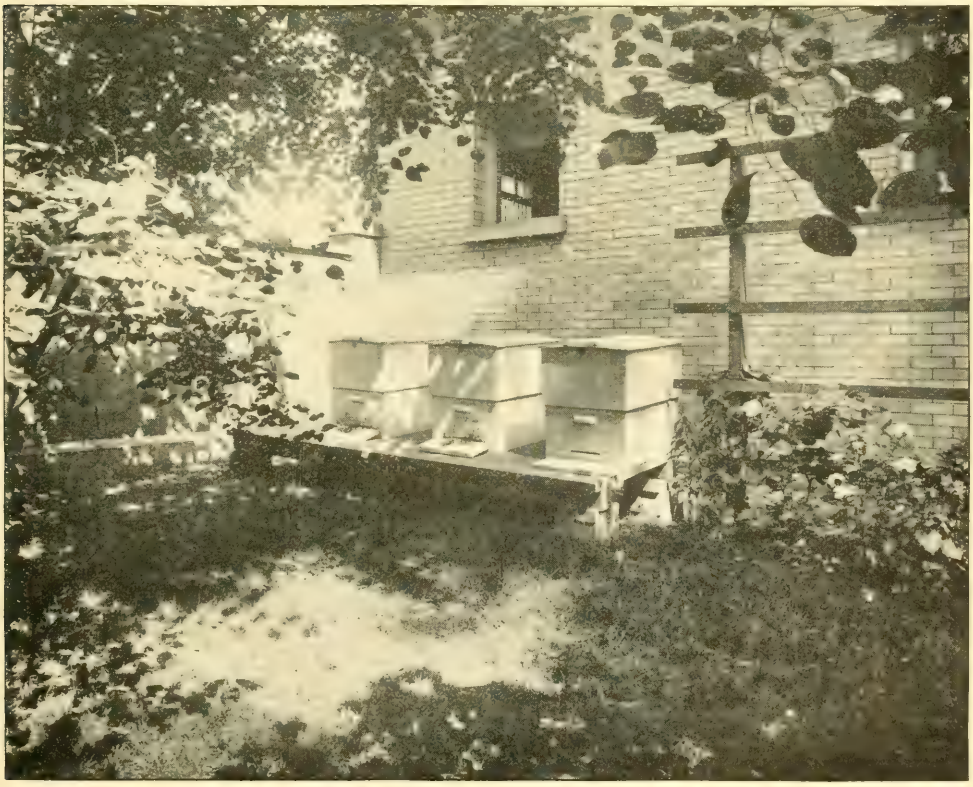
[It is quite likely that the queen on the alighting-board was one which was returning from a flight, and had mistaken the entrance.—Ed.]

## A BACK-LOT BEE-KEEPER; BEE-KEEPING FOR PLEASURE AS WELL AS PROFIT.

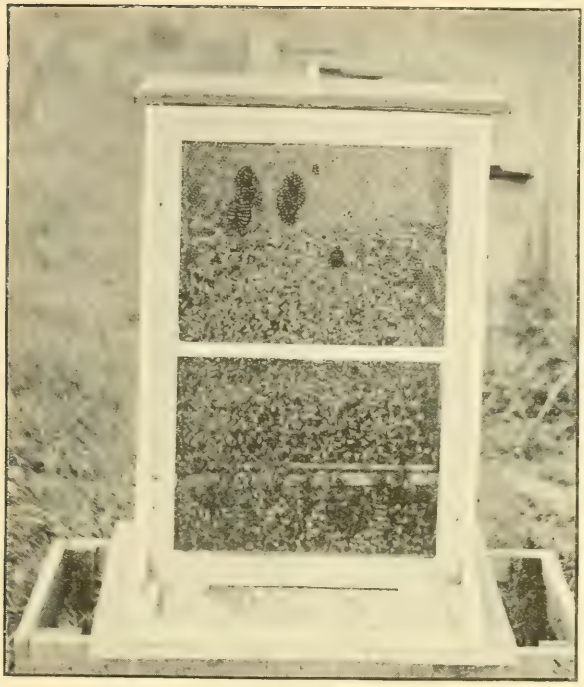
BY WALTER S. POUDER.

The engraving below represents the little home apiary of Dr. Henry Jameson, of Indianapolis, and is a fair example of what pleasures can be acquired by keeping a few hives of bees in large cities as a pastime and a change for recreation. The doctor derives a great deal of pleasure from his flower-gardens, one of old-fashioned flowers, and the other of up-to-date flowers, and also from his motor car; but I will venture that nothing has given him more pleasure this summer than taking care of his bees.

He began his first experience on the 23d of May, with two three-frame nuclei in chaff hives and an extra hive to be used in case a swarm should issue. By spreading brood and adding



APIARY OF DR. HENRY JAMESON, INDIANAPOLIS, INDIANA.



RICH'S OBSERVATORY HIVE; BROOD SIDE.

frames with full sheets of foundation he soon had them ready for the supers, and on July 10th he had removed 111 sections of honey from the two hives, and 48 unfinished sections still remain, with a prospect of being finished with a fall flow.

The report is a good one, and shows what can be accomplished when a man is determined to excel in his work, and this is Dr. Jameson's method in all which he undertakes.

Indianapolis, Ind.

## OBSERVATORY HIVES.

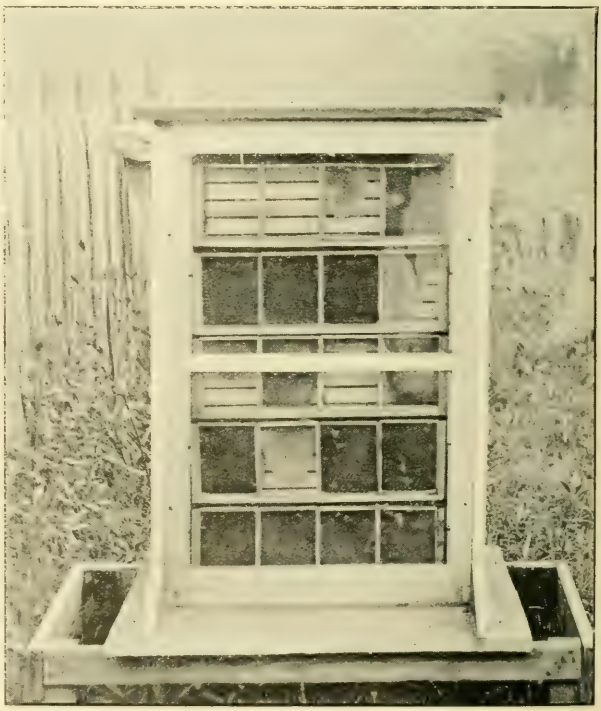
### A Side-opening Hive that is Useful as well as Ornamental.

BY GEO. W. RICH.

The illustration shows the front and back of my observatory hive, which is not only nice for observatory purposes but as good for comb honey as any other hive. The front is four frames high and two deep. The frames are made after the Hoffman pattern, but are only 7 inches deep. The cleats that support the frames go across to hold the section-holders and fences also. Next to the brood-frames are the fences, then holders with sections, and another row of fences and holders with sections complete the hive, making forty 4×5 sections in all. The hive is opened by removing four screws through the sash. To exclude the light I have a frame covered with rubber roofing that hooks in place over this sash. The spots on the glass show the brace-combs. The photo was taken at a time when there was but little honey in the hive.

Trezevant, Tenn.

[The method here shown is something like the plan used in Germany. The hives are not *top* opening but *side* opening. It is a very slow, tedious process, perfectly permissible in an observatory hive, but intolerable in a hive for general honey production. Of course, some of our German cousins may think otherwise. But it seems like a lot of work to take out every frame to get out the frame on the far side, or half the frames to reach one in the middle. They claim a hive with a movable roof is unhygenic because it allows the natural heat to escape too freely; at least that is the claim made by Berlepsch and Dzierzon.—ED.]

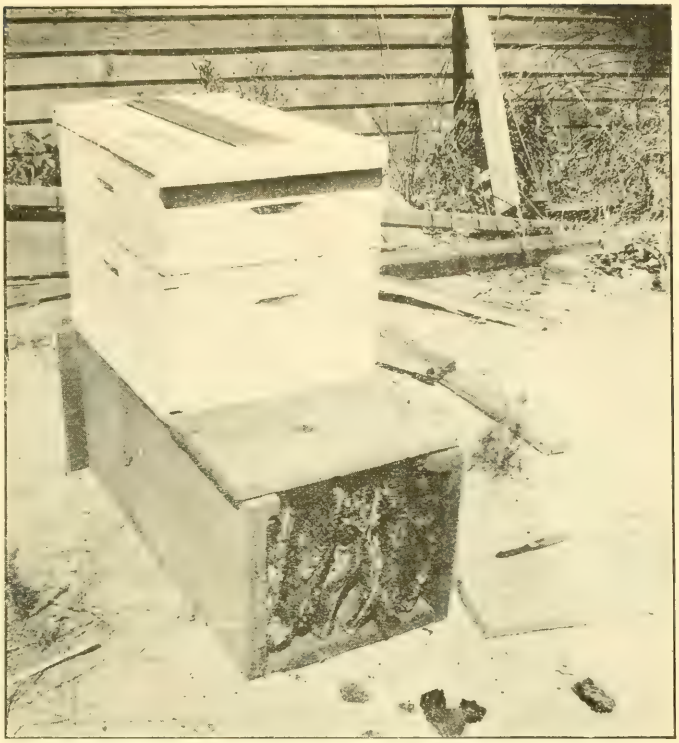


RICH'S OBSERVATORY HIVE; SURPLUS SIDE.

# TRANSFERRING FROM BOX HIVES.

## A Quick Way of Doing the Work Without Greatly Disturbing the Bees.

BY J. J. WILDER.



WILDER'S METHOD OF TRANSFERRING FROM BOX HIVES.

Prepare as many hive-bodies, using full sheets of foundation in the frames, as there are box hives to be transferred; and in early spring, or as soon as tne first honey-plant begins to bloom, turn a box hive so that it rests on its back. Then, with a hatchet or ax, split the front side, which is now the top, in pieces about 2 inches wide, and remove the one which has the least comb attached to it, working it out carefully so as not to tear up any comb. A long-bladed knife can now be used to cut the comb from the rest of the strips, and remove about 12 inches of the wood in the middle, leaving just enough at either edge so that the prepared hive when set on top will have a good level foundation to rest on. If the box hive is narrower than the new one, nail straight-edged strips on either side, flush with the top.

If the bees have not rebuilt the comb in the top of the box hive since it was robbed, fill the space with straw, hay, or burlap sacks, or any thing the bees will not gnaw away. If this is not done the bees will fill it with new comb, and the work in the new hive will be retarded. If the comb in the box hive was removed to a depth of over 6 or 8 inches, and not rebuilt, reverse the hive so the top will be about where the entrance was, and remove the cover and nail it on the bottom end so the end of the new hive will rest on or against it.

The front end of the box hive (the bottom when the hive was standing) can be left open; but the rear should be closed so no cool draft can pass through it during changeable weather.

Now set the prepared hive-body on the box hive, making sure that there are no cracks at the sides or back, and place a short piece of plank over the portion of the box hive in front, which the new one does not cover. (See illustration). It is best not to close up the opening in front to a small entrance, unless the apiary is large or robbers bad; for the queen would then occupy more of the old comb, and delay the establishing of the brood-nest in the new hive, which she should do as soon as the foundation is sufficiently drawn out. After all the box hives in the apiary have been thus treated, and work is under headway in the new hives, put on supers as fast as they are needed, so the queens will not be crowded out of their new quarters.

An apiary in this condition can be operated for honey or increase, and better stock can be introduced at the same time, and at the close of the season or late in the fall all the bees should be driven up, and the new hives set down on bottom-boards. If any bees remain in the box hives they should be jarred in front of the new hives, and the old hives set a few steps away. As soon as the bees remove all the honey from these old hives they should be taken away and the comb rendered into beeswax. At this time of the season there is little if any brood lost.

If colonies in box hives are weak at the time of transferring, it is best to unite several of them, which can best be done by preparing one hive as above for every two or three hives to be united. Then all colonies should be disturbed so the bees will fill themselves with honey, and cluster on some part of the hives, when they may be dumped into the one prepared for them.

I have been troubled but little with swarming in apiaries managed in this way, and the colonies have not failed to harvest a good crop of honey when seasons were favorable.

Cordele, Ga.

[In most localities a steady honey-flow could not be relied upon, and robbing would surely begin during the first honey dearth, if the combs at the bottom of the old hive were left exposed. In such cases we would advise the Heddon short method—viz , drumming two-thirds of the bees up into a box placed on top.—ED.]

The only reliable, ever-ready, self-adjusting hive-lifter. It is adapted to all localities, is easily and quickly placed in position, and easily managed. Every *lady* bee-keeper should have one.—J. L. ANDERSON, Harvard, Ill.

## THE UNIVERSITY OF CALIFORNIA.

### What it is Doing for Apiculture.

BY RALPH BENTON,
*Instructor in Entomology.*

We are interested in observing the general movement in the direction of apiculture in our agricultural colleges and experiment stations. This subject in the University of California was first taught during the academic year of 1893–'4, and since that time it has formed a part of the regular instruction in this institution. The present instructor in entomology in charge of apiculture came in touch with the work in California in the spring of 1905 when serving as Assistant in Apiculture in the Montana Agricultural College, where, under the direction of the entomologist, he has been in charge of the teaching and experimental work in apiculture since the year 1901.

The past three years have witnessed a distinct advance in the amount and scope of the work being done in apiculture. The number of courses offered, from two repeated twice a year, has been augmented to seven, three of these being repeated twice a year, and two being capable of election indefinitely without repetition of work as research courses. The distinctly apicultural courses are now announced separately from entomology, giving apiculture a recognition and permanence coordinate with entomology as a sub-department under agriculture such as has never before been given to this subject in any institution of higher learning in America. It is now not only possible for a student to get his B. S. degree in apiculture, but increased facilities are being provided for research work looking toward higher degrees for those qualified for such studies.

The University apiary numbers forty colonies, and has representatives of each of the six varieties of bees of economic importance. There is now available equipment for thorough instruction in comb and extracted honey production, wax production and manipulation, queen-rearing operations, and bee disease investigations. Apiculture will from the first form a part of the school work on the University farm at Davis, where instruction is to be begun this winter. In connection with this instruction work on the farm there is to be established a well-appointed experimental apiary with an apiarist in charge. There are also three out-apiaries with the owners of which the University has made arrangements for co-operative tests of methods of practice and varieties of bees on a more extensive scale. Arrangements have been made with several more of the larger commercial apiaries of the State for advanced students to spend their summers in practical experience in apiary management.

Whether this work of the past fifteen years, culminating in the more recent rapid advances, is to be permanent or ephemeral, as has been the case in every other institution in this country where apiculture has received attention, remains largely with the bee-keeping public. The authorities have been responsive. This has been true in some instances elsewhere. But there seems to be a normal limit to the amount of work that State institutions are willing to do in these untrodden lines, without precedent, merely upon the suggestions and recommendations of those personally engaged in the work. The rank and file of bee-keepers must plead their case incessantly and concertedly if they would finally triumph.

## EUROPEAN NOTES.

### German Ideas Regarding Heather and Dandelion Honey.

BY J. A. HEBERLY.

The details of bee-keeping are dictated to the expert by climate and flora. Only a thorough knowledge of the time of the honey-flow enables him to obtain the best possible results. For this reason I should have thought that on account of the time at which the various plants and flowers begin to yield nectar and pollen, and the length of time any flower in a particular locality secretes nectar, would be more frequently met with, as this would be interesting for comparison.

Regarding heather honey, I will say that your correspondent is misinformed, at least as far as Southern Germany is concerned, because heather honey is here considered inferior; but I infer that in Northern Germany it is also considered inferior, since I frequently see such honey advertised at nearly half the customary price. This honey is from *Erica vulgaris*, and is so viscous that it can not be extracted—at least not in the ordinary way. The flower opens here Aug. 10—12, but in other parts earlier.

Another heather, *Erica carnea*, ling, which does not grow near here, blooms in early spring, and yields nectar and pollen when old snow may be near by in quantity. I do not know, but I believe that honey from *Erica carnea* is much finer, but none is to be found in the market.

Dandelion grows here in abundance, opens about May 15, and lasts two weeks. The honey from it should be extracted as soon as the flow ceases, because it will break the combs later on when trying to extract it. It is of a deep-yellow color, and crystallizes, after extracting, in a week or two. It is rich in ethereal oils, and on this account people accustomed to mild honey find it too strong. Some consider it rank; most get to like it. It keeps well, and seems to improve with age. Owing to its viscosity and the tendency to crystallize so rapidly it would not be a desirable winter food. Since it is the first honey early in the season, I think none is left in the fall to make the bees "thirsty" in winter; but if any is left it is so far from the center of the brood that it won't be reached until the bees can fly again.

I wish to state that my opinions and observations are based on experience here, and may often fail to be reliable in your country, owing to the different conditions. Honey from the dandelion is the only variety of which I know that should be extracted as soon as the flow ceases. All the other honey should be capped—at least any frame two-thirds to three-fourths full before being extracted, because uncapped honey is unripe and inferior to capped honey from the same source. I was amazed to see plans discussed for ripening honey artificially. Such honey would be inferior to that ripened in the hive; but where an excess of aroma is present it might do, because a slight loss of ethereal oils might then mean no harm. I do not see why bee-keepers want to extract unripe honey. They save a little time, not having to uncap much; the yield is increased just a little; but these are only seeming advantages, because the inferior quality of unripe honey will mean a greater loss in price. Whenever honey is sold according to quality it gives more trouble to sell, and should be sold rather early, because it won't keep so well; in fact, there is a possibility that it might become unsalable while ripe honey may be kept, under favorable conditions, for years. Besides all the advantages—yes, even if it were a slight disadvantage to extract only ripe honey—I think the bee-keeper should have so much pride and moral courage that he will offer only the best honey that he or any one else in that locality can produce, in a clean, neat, and attractive package.

Regarding sugar feeding (cane sugar is identical with beet sugar), it is best here to feed early. One to one or just a little more is deemed best. By late feeding, as much as two to one may be used. Speculative feeding should be commenced in August. In spring it is not advisable, because the bees become excited, and fly out when the temperature is so low that large numbers are unable to return. Here not more than 5 to 7 lbs. should be fed unless the locality produces honey unfit for wintering, such as from Scotch or silver fir and honey-dew. Sugar should be fed only in the fall—never in the spring—because brood-rearing does not progress so rapidly as with honey; besides, there is danger of some sugar syrup or invert sugar being carried up into the extracting-super later on when making room for the queen. This may also happen when feeding very large quantities of sugar in the fall. The natural food for bees is honey—not sugar.

I would never recommend any kind of acid to invert the cane sugar, but let the bees do the inverting. I am inclined to think the acid might be injurious—more so than the work of inverting. The bees might be injured, and the bee-keeper never know of it. It may shorten the life, lessen the energy, and escape completely our observation.

#### SPRING LOSS.

We have had verandas (cloisters) for years. These should exclude light and provide shade, and should not interfere with the exchange of air. On no account should the bees in warm weather be confined. As soon as they find that they can not get out they become alarmed, excited, and may with their dead bodies prevent the entrance of fresh air, and thus endanger the colony. These verandas provide about a cubic foot of space, and are valuable where bees are kept during the winter on their summer stand. During winter, when there is no danger that the bees will fly, the door of the veranda is shut. No mouse, bird, rain, wind, or snow will trouble the bees. In spring, however, when it gets warm, the door of the veranda must be opened. If a shade over the entrance is provided, it will save many bees. Mr. Weber's entrance-controller would, according to my experience, be much improved if he would leave out the wire cloth; as it is, it would be dangerous here; then the bees can get out if they want to. No harm will be done, and at the most dangerous time fewer bees will fly out then without it, and therefore fewer get lost. Mr. Halter's storm-door will do about the same. If the bottom-board is sufficiently long, a combination of the two might be an improvement; but instead of the A A notches I would suggest putting a small block or stick

on the bottom-board so the board or storm-door would be raised sufficiently for the bees to enter. This arrangement needs no attention, while veranda doors must be opened and closed frequently in the spring if any good is expected from them. If in the spring the doors are not opened when they should be, the loss or danger might be as much as or more than if the hive had been left to itself with no protection. I find the verandas at least as valuable in winter as in spring. If I were in America in a location protected from the north by forest or mountains, so the north wind could not bother the bees much, or in a locality that is not troubled with north winds, I would turn the hive entrance of a part of my colonies to the north; then the bees would fly only in weather that would not be dangerous. I think the danger is greater here than in most locations in America, because bees are kept in bee-houses with the hive entrance to the south. The sun shining on the building has more power to entice bees out in spring when the air in the field is cool enough to chill many of them. I am inclined to think most damage is done when the weather changes rapidly at noon or in the afternoon. The bees are out, and not able to return; but no protection will avert loss from such a sudden change of temperature.

Stoetten a. A., Bavaria, Germany.

## TROUBLES OF A BEE-INSPECTOR.

### Some Problems that Confront Inspectors in their Work; Some Suggestions in Regard to Inspection and to the Laws Controlling it.

BY C. A. WURTH.

This is a subject that is rarely touched upon in the columns of any bee-journal, and it may appear to be a little out of the ordinary to present some of the following suggestions to intelligent bee-keepers; but I am of the opinion that GLEANINGS numbers among its subscribers not a few parties who have no knowledge of bee-diseases, being so ignorant of this important subject that they lose their bees by one disease or another, and never guess the cause.

In my experience as a bee-inspector I find parties who question the existence of bee-diseases, and it is a hard job to convince them that they are wrong, as it usually occurs that a person so ignorant as to question the existence of a contagious disease among bees is conceited, and all of the evidence brought to bear is of no avail. The best way to convince such people is to bring action against them in the court; for, although they may not be convinced they can be convicted of violating the law, and, after once being compelled to pay for their stubbornness, they will yield to the wishes of the inspector on the next occasion. I do not advise indiscriminate prosecution of any one; but when it is necessary I believe in penalizing to the limit. It is folly to let any one maintain a position whereby he disputes facts, established by scientific analysis made in our government laboratories by qualified men who devote their energies to the study of just such diseases.

A bee-inspector is often placed in very embarrassing circumstances. A person capable of fulfilling the duties of inspector should be a competent and well-informed bee-keeper; therefore if he is an apiarist, owning bees near where his services are required, he is placed in a position whereby he can be accused of using his authority to further his own interests. For instance, if it is necessary to destroy some colonies, the owner at once takes this view. Of course, this accusation is fostered solely by parties who are either ignorant of the consequences of the disease when left to itself or by those who are trouble-makers. I have confidence in mankind enough to think that, where the inspectors are apiarists, with the right kind of feeling toward this great and interesting industry, not one in twenty will be found who is doing this inspection for the material benefits derived. An inspector who does his duty is sure to find opposition. In all civilized countries we find neighbors who do not get along together. Sometimes each of these two parties owns bees in an infected district. The inspector may find one apiary contaminated, and order it destroyed, while the other is in splendid condition. This at once leads the first to accuse the inspector of being partial in his methods. Of course, circumstances like the above are rare, but still they exist.

In my opinion the worst hardship the inspector is confronted with is the enforcement of the law when opposed by some influential person. It is not a pleasant duty to start proceedings or legal action against an offender of the statute, as it necessarily calls into court parties as witnesses who rather shrink from the duty, thinking that, perhaps, they may create an enmity with the one they testify against, as often happens.

If any party owning bees does not know the character of the disease supposed to exist in the hives, and after an examination by the inspector still doubts or questions the ability of the inspector in determining what is wrong, and requests that he be allowed to retain a sample of the diseased comb to submit to the government experts for an analysis, he immediately blocks any possible attempt of the inspector to do him an injustice. This kind of test would at once vindicate or convict the inspector of unfairness; and it is not expensive nor unfair to the inspector. I for one gladly submit to such a test. There is a possibility that, in some cases, it might be unfair; but in most instances I believe that it would be of material benefit to the inspector; for, after a few such tests, it could easily be shown that the inspector is either using unlawful and malicious methods or giving a square deal.

It is my further opinion that a State law, providing for a State inspector, whose salary and expenses would be paid directly out of the State treasury, would have a tendency to eliminate a lot of the prejudice against bee-inspectors, as it would do away with all county or district lines, and the duties of the inspector would not be confined to his own immediate vicinity or neighborhood.

I do not believe in drawing the party line when it comes to bee-inspectors, as I consider it poor policy to mix politics with so important an issue as the eradication of foul brood. A bee-inspector should be selected and appointed upon his merits and knowledge of the diseases of bees, and

not upon his political influence. I believe Wisconsin has the best and most efficient law relative to this subject, and the bee-keepers of that State should be proud of the law and proud of their capable and splendid inspector.

College View, Neb.

## BEE-KEEPING IN JAPAN.

### A Description of the Bees, the Climate, and of the Sources of Honey.

BY J. HOBO.

The oldest record on bee-keeping in our history brings us back to the reign of Emperor Kokyokee (600 A. D.), when Prince Yoha, of Corea, came over to our country and let his four hives of bees fly at Mt. Miwa, in the province of Yamato. This is the first historical record we find on bees; but it is not clear whether we had bees before that. Bees in Corea are said to be a little smaller than ours, and those of Manchuria to be a bit larger. Perhaps all kinds of bees in the far East are from the same original race.

From time immemorial people have practiced bee-keeping in different provinces. The most noted ones are Kii, Shinano, and Kyushu provinces. So the hives kept and honey produced in these regions were considerable. But the way of keeping bees is not improved at all. They use empty boxes or casks to put the swarm in, with no design of conveniencing the bees. In the autumn they open these, cut off the combs, put them into bags, and squeeze out the honey contained. The poor bees brushed off are left with no stores for winter. Often they leave some part of the combs for the bees. It is the habit of the Japanese bees not to store pollen for the winter; and as their queens cease to lay late in autumn the honey squeezed out does not contain so much juice of pollen and brood; yet the color is very dark, with a disagreeable flavor. Some practice what they call a better way—cutting off the combs and setting them out in the sun, which will melt the wax and let the honey run out. Some cut off a part of the comb with honey only, and press them in bags. These are considered fine honeys, and sell high.

We do not use honey as food, except farmers living in mountains too far from any villages to get sugar. Our people consume honey in medical use largely. Most of our people do not know honey as food nor sweets on the every-day table.

Though bee-keeping is in such a state, it is quite interesting to know that the bee-keepers in the province of Kii have practiced migratory bee-keeping for ages, keeping extra queens to replace the unprolific ones. Movable frames were known to some of our people more than twenty years ago; but the nature of our bees didn't fit the improved hives, and poor results followed everywhere, and the use of them stopped generally. There are nearly 100,000 hives in our country, with an average of from 10 to 15 pounds of honey.

Mr. K. Aoyagi and others saw the defects of the native bees, and the necessity of importing European bees to our country to make bee-keeping succeed. But their idea did not work well until Mr. Aoyagi succeeded in importing Cyprian bees. About 40 of them were scattered from his hand in different parts of the empire, besides 35 colonies which he is wintering now. Through his efforts people began to see some profit in the so-called improved bee-keeping. Some of our rich men and nobles began to be interested in it. Among them are Count Matsukata's son, Baron Iwasaki, Dr. Nagoyo, and others. In the near future our people will see the value of honey as food and take interest in bee-keeping. The Bee-keepers' Union, Tokyo, under the supervision of Mr. Aoyagi, has at present about 250 members. The Union is making steady progress, making the highways in bee-keeping by publishing a monthly journal, explaining improved bee-keeping to the members.

Let me explain some hing about Japanese bees. They are gentle, but reckless and timid, getting up a stir whenever we handle them. This is one of the principal reasons why they are not fit for the removal of frames; because as the hives are easily opened, every time they get into a tumult a poor result ensues. They love their queens too much, and like to be gathering too much. This is the reason the use of supers is decidedly impracticable to them. They are very sensitive, too, so they work well as far as the condition of hives is all right; but if they find something in the hive they do not liket hey cease to work, and run away. They are a hardy race for winter, but fear the heat in summer; they are weak in defending themselves against moth; so if we neglect this in summer, or in case of too much moth trouble, they leave the hives. They never accept foreign queens, and this is the reason of our difficulty in improving bees. The cells are a bit smaller and the walls weaker than those of European bees, so the foundations we get from your country are not liked by them, and sometimes they build drone combs on your worker foundation. The queens are quite prolific, but good swarmers; and when they swarm they gather on trunks of trees 15 to 20 feet high, giving us trouble in catching them.

These are the principal defects of our bees, and it is the cause of the unprogressive state of bee-keeping here. We find it impossible to get a good result in bringing forth a great income from our native bees — simply too much trouble and too little gain. If I could give fine points on our bees it is their gentleness, as we never use a smoker, veil, or gloves, and their diligence and quickness of flight.

THE CLIMATE.

As you know, our country stretches along from southwest to northeast, with the Pacific on the southern side and the Japan sea on the northern. Formosa, the southernmost island, is very hot, while Hokkaido and Sagalien are cold, with deep snow and ice during their long winter. But the mainland, with the two great islands of Kyushu and Shikoku of our island empire, is in the temperate zone, is moderate in winter, which is comparatively short except in those parts facing the Japan Sea, where snow comes deep in winter. Hakone, where Mr. Aoyagi has his apiary, is the summer and winter resort, both for foreigners and natives. Surrounding mountains and hot springs everywhere in the ranges make the place more charming. The winter we have here is very moderate—with only a little snow occasion-

ally during winter, and the thermometer rarely goes lower than 32 (indoors). The province of Kii, noted for its bee-keeping from olden times, is warmer than here. So you can see that we are much favored in our bee-keeping so far as the climate is concerned.

THE PLANTS AND FLOWERS.

As for the honey-plants, we can not say which is the principal one, like clovers and basswood in America. Each province or region has its own trees and plants cultivated, such as apples, pears, peaches, oranges, persimmons, buckwheat, beans, and others. Moreover, as our lands are so thoroughly cultivated for different plants and vegetables we are not able to plant a honey-field on such a large scale as you do. But besides these cultivated plants we can have a great quantity of wild ones along the mountain ranges which run from one end to the other as if they were a backbone to our long island empire. So when we go to Kii, Shinano, and some part of Kyushu, we find many old-style bee-keepers who have colonies by hundreds. Generally speaking, our country is abundant in flowers and fruit-trees as well as plants and grasses. From nearly all of them we can have a honey harvest.

The time will soon be here when you will find a bee country in the far East among its beautiful sceneries. We hope, in the near future, to have our people of every class tasting honey at tables. We are praying for the time to come very soon when thousands and tens of thousands may enjoy this high, peaceful, profitable, and interesting business. May these little busy angels reveal the mysteries of His mighty works, and enlighten the spiritual darkness of the heathen nations of the East.

Hakone, Japan.

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

FULL PARTICULARS ON HANDLING BEES BEFORE AN AUDIENCE.

I should appreciate it very much if you would describe the handling of bees in a wire cage, before an audience, from the time the operator enters the cage until he leaves it. How do you scoop them out of the dishpan without being stung? I tried scooping them off a sheet, as I was hiving a swarm this summer, and I never had any desire to repeat that trial. What would be a fair price to ask for performing this in a local vaudeville theater—that is, how much for each performance?

What is the largest crop of comb honey that you know to have been secured from a single colony, any locality? also extracted? Where was each secured? L. R. HENLINE.

Towanda, Ill., Aug. 8.

[The secret of handling bees by the handfuls before an audience depends on three things: First, the bees must be thoroughly frightened—that is, forced into a state of panic. This may be effected by blowing a little smoke over the top of the hive, removing the frames in the regular way, and then shaking the bees off the frames into a large dishpan. The pan should then be shaken something like a corn-popper, causing the bees to be mixed up in endless confusion. In this state they are thoroughly frightened, or, perhaps, to put it more exactly, the colony spirit and thought of defense have been thoroughly taken out of them.

The next important requirement is absolute fearlessness on the part of the operator; and the last is the quiet, gentle moving of the fingers under the bunch of bees in such a way as not to cause any pinching. The hand must be moved so slowly that it will gather up the bees in such a way that the movement will be almost imperceptible to the audience. One can then scoop the bees up by the handfuls, scatter them all over the bare arms, and on top of his head. It seems to make but very little difference what the strain is. But throughout all of the demonstration the operator must be exceedingly careful not to pinch or rudely push a single bee or he will suffer for his carelessness.

At a demonstration given at our home yard before a company of 200 schoolteachers we showed how the bees could be handled like kittens. One of our men, observing how easily we performed these stunts, attempted to do the same thing. He pushed his hand into the cluster of bees and received nearly fifty stings. But he had good nerve, and went through the "performance." On questioning him afterward we found he pushed his hands into the cluster too rapidly, rudely brushing and shoving the bees. If one shoves his hands through the bunch fast enough to crowd the bees unduly he may get stung very severely.

If we remembet correctly, 400 pounds is the largest amount of comb honey taken from a single colony, but we do not now know the locality. Probably 750 lbs. is the largest amount of extracted honey from a colony, and this was produced in Texas.—ED.]

WHY DID THE QUEEN FAIL?

We have just removed one of our own bred queens that commenced to lay June 16, laying all worker eggs only. To-day we find no unsealed brood at all, but sealed worker and sealed drone brood in worker-cells, the latter predominating. The queen, when removed, was small, with no trace of eggs when killed. The colony had been well stimulated when the queen commenced laying. This is a rare exception with us; and although queens will occasionally degenerate into drone-layers, having laid worker eggs previously, it could, perhaps, be obviated if the cause were known. Do you think a slight sting from a worker would cause the destruction of the laying organs? The queen mentioned was destitute of a foot on the second right leg.

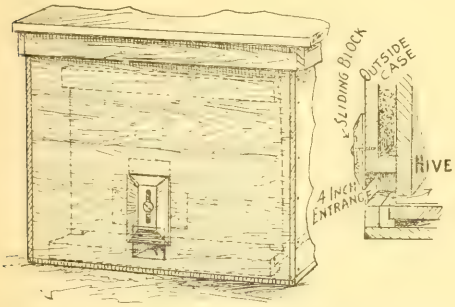
Hemlock, O., Aug. 22. P. BIESEMAN.

[Some of our best queens will turn drone-layers. In rare instances a queen will lay worker and then drone eggs exclusively, and, after a month or so, lay worker eggs again. In the last-mentioned case there must be some functional difficulty. In the other, where the queen turns drone-layer, and stays so, she may have at one time been chilled; she may have been pinched, or she may at the time have been fertilized by an impotent or poor drone. A microscopic examina-

tion of her after she has been dissected might reveal the cause. A long journey through the mails sometimes makes a drone-layer out of a good queen. As a general thing, we can only guess at the cause.—ED.]

AN ADJUSTABLE STORM-DOOR.

*Mr. E. R. Root:*—After reading your article, p. 353, in regard to storm-doors, I should like to call your attention to my chaff-hive storm-door attachment, which I think is far better than the Halter arrangement. Briefly speaking, I have an inset about 4 inches square and 3 deep in the front of the chaff hive. On the outside of this inset is the adjustable storm-door. This door is cleated and beveled on top. In the center of this door is cut a slot 2 inches long for a big-headed screw, so by shoving the door up or down we may have a space 2 inches by 1 inch by ½ inch, or close up entirely. Just give the screw a turn, and it will hold the door in any place, or turn it bottom up and it is out of the way entirely. My




hives are mostly packed in winter boxes, but I bridge over the projection of the bottom-board 4 inches high, which makes the inset. Two of my hives were closed up all winter. I opened them March 12, and the bees came out with a rush all in good order, and ready for business. I lost no bees last winter. I usually winter about 100 colonies. E. N. WOODWARD.

Hillsdale, Mich.

[One objection to your adjustable storm-door is that it provides a square opening through which mice may enter unless it is closed nearly down. It would be much better to have the opening only ¼ inch deep, by a maximum of 8 inches wide, say, but adjustable as to the width. This would prevent the entrance of mice, either when it is wide open or nearly closed.—ED.]

SEALED COVERS PREFERRED.

On page 369, March 15, L. E. Scherer says that absorbent cushions are better than sealed covers. I agree with the editor. When I packed my bees last fall I packed half with a Hill device on or over the frames, and an absorbent cushion on top, and the other half with a honey-board right over the frames for the bees to seal down, with about eight inches of fine straw or chaff on top.

When I was out among the hives to-day (Mar. 23) I could plainly see the difference. All the colonies that had a sealed honey-board started to work, while the bees with a piece of burlap over the Hill device, with the same amount of chaff on top, were not active.

The reason I wanted to try this experiment was that, the winter before, I found that the chaff on top of the burlap would hold moisture, and freeze. This has a tendency to keep the bees back, even when warm weather does come. With the sealed covers the chaff stays dry.

Could I wire my brood-frames if I use starters only? Will the bees imbed the combs as they work down? WALTER M. ADEMA.

Berlin, Mich.

[Your experience in regard to sealed covers and absorbing cushions is quite in line with reports that we received from many bee-keepers some few years ago when these experiments were being conducted. There are times when the absorbing cushions seem to give a little better results; but taking one year with another, in the average locality, the sealed cover with dry packing on top will give better results. Yes, you can wire frames, using only starters.—ED.]

DOES HONEY FROM POISONOUS PLANTS KILL BROOD?

In the fore part of this summer, bees near Joliet, Ill., were very badly affected by dead brood. We have some of it here also, commencing about the middle of May and lasting about eight weeks. About one-third of the brood (mostly in colonies of a dark strain) dies when about half grown. Would the honey gathered from a poisonous plant be likely to poison the brood? The plant itself and the fruit are poisonous.

I have devoted five colonies this summer to finding the cause. I have taken their brood-combs away three times, and still one colony is a little affected. Can you give us the cause?

Niles, Mich. C. B. FRITTS.

[Honey from a poisonous plant that does not kill the adult bee will often kill brood; in fact, the brood will die in various stages long before the bees are affected.

Sometimes the liquids that are used to spray fruit-blossoms kill the brood and not the bees; at other times the spraying-liquids kill both bees and brood.

Next year, when this poisonous plant begins to yield nectar, send us some flowers, stalks, and leaves, and we will investigate.—ED.]

INTRODUCING QUEENS BY PLACING THE CAGE AT THE ENTRANCE.

In reply to the first Straw, Aug. 15, I will say that during the last eight years when I introduced queens I moved the brood-chamber with all the brood to another stand, and placed the second story at the bottom on the old stand, and put the queen-cage on the bottom-board at the entrance, and set a board leaning against the front of the hive to keep rain off. This gives the bees a chance to get at the candy at once.

I have never lost a queen in this way. I introduced two this year to weak colonies when there was no honey coming in. By every other way I have tried I have lost more or less. I lost as many as five queens at one hive, and then I smoked the bees till four quarts fell on the bot-

tom-board as though they were dead; but they accepted the queen after that.

WILLIAM C. PETERSON.

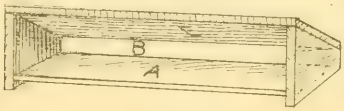
Canaveral, Fla., Sept. 9.

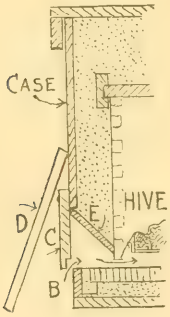
[Entrance introducing can be practiced during warm weather. There is no merit in the plan except convenience. The fact that you lost queens when you introduced in the center of the cluster was due to some other cause than to the position in the hive. It is a waste of time and money to attempt to introduce to a colony that has killed two queens in succession. Make sure it is queenless and has no laying workers by giving a frame of unsealed brood; then give it a ripe cell.

In the case cited where you lost five queens, the bees must have had something that they recognized as a queen. When you smoked them nearly to death you probably killed that freak queen, and, of course, after that you succeeded in introducing a good queen.—ED.]

VESTIBULED ENTRANCES FOR WINTER.

I notice the vestibuled entrance described by Mr. McIntyre, page 97, Jan. 15. The drawing gives an idea of the kind of bridge I use for this purpose. It is set in, without nailing, between the hive and the case, with the high or open side next to the case, and the low side to the hive. There is an opening four or five inches deep, and the width of the entrance, in the case, and the front of the bridge is made a little deeper than this. The opening at the back of the bridge,




which is placed against the hive-entrance, is made an inch deep—a little more if desired. This arrangement allows the packing to come down close to the entrance, and leaves room to work from the outside.

To protect the entrance a board with the lower edge cut away, or rabbeted, is hung over it with the rabbeted side next to the case, and just high enough to leave about ⅜-inch passageway. Mice can not turn this corner—can not even chew at it—and it allows air and bees to go through, and shuts out drafts and light. When snow comes, a board is leaned up against the front of the hive.

I might mention that Mr. Storer, of Lindsay, Ont., makes a hole ¾ inch or one inch in diameter in the center of the front of all his hives, and a corresponding hole in the case, with a connecting tube or some other arrangement to prevent the packing blocking the aperture. This is in addition to the regular entrance. It looks like a lot of entrance, but he claims he has not lost nearly as many colonies in winter since adopting the plan. It certainly does away with danger arising from entrances clogging.

Richards Landing, Can. J. R. HAND.

[The arrangement you show we consider to be very good, especially as it allows the live bees to get rid of the dead ones very easily. But this kind of storm-door should be put on very early in the fall so as not to confuse the bees on the first warm balmy day when they take a flight either in the fall or spring. To put it on after cold weather sets in would cause trouble.—ED.]

HOW TO CLOSE HIVES FOR MOVING; GETTING RID OF ANTS.

Wishing to move some of my bees, I have been puzzling how to make the bottoms secure with as little trouble as possible. A very simple solution of the difficulty finally occurred to me. My hives are fitted with the metal-roofed cover and super cover. Having already tacked screen wire over the tops of the hives, I removed the bottom-boards and substituted the super-covers. That made the hives as tight as a box. Then, turning the metal-roofed covers upside down, I set the closed hives in them, and dropped in blocks to keep the hives from slipping on the super cover. They were then perfectly secure for the whole trip. To shade them from the sun and to give ventilation I laid sticks across, and on them old window-shutters.

When I opened the first hive at the destination I learned that the bees were suffering for water—a contingency I had overlooked. I sprinkled the other hives before opening, thus both giving the bees a drink and cooling them off somewhat. The next time I move bees I will take along a jar of water and a rag, and give them a chance to drink along the road. All that will be necessary will be to soak the rag in water and lay it on the screen wire that covers the tops of the hives.

When ants get to bothering a hive I mix some powdered borax in strongly flavored honey in a saucer. Cover the saucer with coarse wire netting so as to exclude the bees, and set it under the front-board of the hive. That settles the ants in short order. B. C. AUTEN.

Carthage, Mo., July 28, 1908.

[It is always advisable to carry water on hot days when moving bees. Where the bees cluster very closely over the wire cloth so as to shut off ventilation from the others, sprinkle them. This will drive them back, cool them, and prevent suffocation. A wet cloth laid on is not as good as a spray thrown on.—ED.]

PAPER-COVERED HIVES.

I have been using paper the past two seasons, and find it good for this locality, though we have not had much zero weather here for the past two winters. J. L. VAN BUREN.

Madison, Ind.

# OUR HOMES

By A. I. Root

I the Lord am a jealous God, visiting the iniquity of the fathers upon the children of the third and fourth generation of them that hate me.—EXODUS 20:5.

Let me repeat just once more (the thought first mentioned in our issue for Sept. 1, and again Oct. 15) what I said about marriage being the most sacred and solemn event between birth and death in the life of a human being. Although I have lived, and observed humanity for nearly seventy years, I did not know until recently that breaking God's holy command not to commit adultery frequently sends men and women to insane-asylums—at least I did not know, or had not considered, that even a *young* man may in three years become a *raving maniac* simply by transgressing the law of God and also the law made by man. Many young people seem to think it a light thing, or a thing of not so *very much* importance, that they should live pure chaste lives, and that, as only marriage sanctifies this holy union between man and woman, there should be no trifling in the matter. The world demands that a woman shall be pure; and may God help us in a like manner to demand that the young man who proposes marriage shall *himself* be pure.

In a recent issue of the Cleveland *Press*, one of our regular dailies of a great city, I was startled by an editorial that I believe should have world-wide publicity. Read it over; and when you get through it, read it again. Yes, I wish every man, woman, and child could read it and ponder over it a dozen times. You may be tempted to think it is an extravagant statement; but after you have read it and considered it, look out on humanity and then pray over it, and *then* I think you will conclude it is just right. Here it is:

REAPING WILD OATS.

Can you imagine what would happen to a man if he were pointed out on a crowded street and a voice cried loudly, "That man has just taken a white-hot wire and put out both the eyes of his day-old boy"?

Suppose a man did such a thing—with a white-hot wire. No voice would be raised to ask mercy. If he escaped a rope at the hands of a mob you may be sure the judge and jury would see to it that he got the limit of punishment allowed by law.

Away back when the world was young, human beings toiled patiently to work order and civilization out of chaos. One of the first things attempted was to throw the safeguards of social convention, religion, and even superstition about the marriage relation. Chastity in a woman became as vital to her as a member of civilized society as life itself. And woman accepted the decree as wise and just, and she has, a million times, defended her chastity at the cost of her life. And man, having worked out the self-evident proposition that the life of the human race depends upon the sanctity of marriage and the purity of its participants, had shown himself again to be higher than the other animals—no longer a beast, but a man. Then man rejected his own wisdom, and permitted himself and his son to relapse to the level of the beast while insisting that his wife and his daughter, as they value their lives, maintain the high position that reason and intelligence point out.

In the old days the male human was a queer mixture of a thinking creature and a brute. His new-developed mind thought out and laid down rules and laws—for other people—and his animal instincts (the instincts of a bull moose) guided him largely in his own conduct.

The man made the women-folks accept the decree of chastity: himself he absolved. The lord of the manor made his tenants and vassals toil: himself he indulged in idleness. The king enforced economy and prudence upon his officers: himself he permitted luxury and extravagance. The great captain enforced sobriety upon his soldiers, and in many cases the *great general* of early history was the *great drunkard*.

Then the phrase "sowing wild oats" was invented. It was coined as an excuse for the inexcusable; a cloak for the naked truth; a cowardly bluster to hide craven conduct. "Sowing wild oats" was accepted and acceptable in the state of society in which it was coined; but it's as much out of date now as is chain armor or curing disease by witchcraft. The thing we want to know about now is *reaping* wild oats. Whose is the harvest? and by what right is such a harvest sown for an innocent reaper? and what is that harvest? Listen:

One out of three of the babies who are blind at birth, or whose little eyes flicker and go out in the first few days of life, are reaping their fathers' wild oats.

Two out of three of the women who lie under the surgeon's knife for operations peculiar to women are reaping their husbands' wild oats.

One-half the homes in which no baby's voice will ever be heard are sterile because of the husband's wild oats.

Countless thousands of babes are born dead, and the little life is the toll of father's wild oats.

Millions of babies, of boys and girls, youths and maidens, men and women, go through life sickly, miserable, unsound in body and mind, and they are reaping their father's wild oats.

Oho! We mustn't talk about such things in public? Well, then, let it be known that the phrase "Hush! such things must not be talked about," is of the same cowardly stamp as the apologetic "sowing wild oats." These things must be talked about until we realize that a pure girl deserves a pure man. No young man "must have his fling" if that "fling" takes toll of his future wife's health or his baby's eyes.

Not talk of it! Think of a baby groping its way in the eternal darkness of the blind; think of the young wife poisoned at the very altar of marriage; think of the cost of that crop of wild oats, and then say whether the subject is a proper one to discuss.

Does not the father ask if his daughter's suitor is able to support her? Does he not ask if his mind is clean, and fit for fatherhood? Then why not ask, and insist on knowing, if his body is clean?

When I was in Florida two years ago I experimented considerably with a cheap incubator. It brought out some chicks, but a good many of them were crippled. Mrs. Root said at once that the Humane Society should stop people from using an incubator that brings *cripples* into the world. She said nobody should be permitted to curse deliberately even the dumb brutes by bringing into the world a lot of cripples. and I agreed with her. I think that, at the time mentioned, I said something about human beings being permitted to people the world with human cripples. That figure of putting out the eyes of a "day-old" baby with a hot-wire startles one. It is too horrible to think of. Of course, we have asylums in our land (and may God be praised for them) to take care of those who are born blind; and we have also asylums for those who are crippled in other ways; but I must confess again, old as I am, that I have never noticed statistics particularly in regard to this matter from those who are blind or crippled from birth, and how it came about.

When this writer in the *Press* told us that one out of three babies that are blind at birth are so as the result of their fathers *sowing wild oats*, I thought it could not be true. Again, everybody has wondered why women require so many more surgical operations than men; and I wonder if it can be really true that it is the fault of the men (or of the wretches who *call* themselves men) who marry these good pure women.

Then, again, just recently my attention has been called to so many childless homes that I began thinking it must be a severe cross—yes, we might say a *terrible* cross—for both husband and wife to go through the world having no children to gladden and brighten their home. This writer says *half* of these cases are occasioned by the husband's stupid folly, or, better still, *criminal* folly, and that the world is peopled with crippled beings because of the awful selfishness and greedy spirit of men who have never learned to control themselves, or, better still, to control their passions.

Several times in our Home papers we have had a little talk about overcoming. There is a whole string of promises in the book of Revelation concerning those who overcome. Here are some of them: "To him that overcometh will I give to eat of the hidden manna;" again, "He that overcometh, and keepeth my works to the end, to him will I give power over the nations;" again, "He that overcometh, the same shall be clothed in white raiment;" again, "Him that overcometh will I make a pillar in the temple of my God;" and, finally, "To him that overcometh will I grant to sit with me in my throne, even as I also overcame and am set down with my Father in his throne."

I once heard a minister say, up in the backwoods of Michigan, that this last promise meant that God wanted a lot of good men to counsel with him in regard to the affairs of the universe. Every man who occupies an important position in this nation of ours has about him, or ought to have, some good wise men to advise him and counsel with him; and this backwoods preacher had the audacity to say that even *God* needs help and counsel from human beings; and he said that those who had learned to overcome all selfish and wrong feelings were going to sit with God on his throne, and receive a commission from him to *help* him do his work. Now, you can take the suggestion for what it is worth. One thing we know is that God does need the help of good men in this world of ours. I do not know as yet what he will want us to do in that great unseen and unknown world.

While I was considering whether that statement in the *Press* could be absolutely true, our Medina people were favored by a lecture from Dr. N. C. MacCormick, of Bowling Green, Ky.—a physician of world-wide reputation. Well, this doctor gave us the statistics and illustrations from all over the world, corroborating every point made by the editor of the *Press*. He said that the sin and suffering and pain and death of the present age are due, at least to a very great extent, to brutes in human form, many of them, it would seem, who never ought to be permitted to live.

May God be praised for the temperance wave now spreading over the whole world, that promises to eliminate such hellish work and stop to a great extent this matter of bringing cripples into the world, and children born blind.

Now, do not think that I am condemning everybody else, and holding myself up as a pattern of what a man should be. God forbid. When I was a boy (I am ashamed to tell it) my boyish mind was poisoned by evil associates to some extent, and by bad books to some extent. Thank God, that, through Anthony Comstock's indefatigable labor, bad books have been mostly banished. Mind you, I do not say my *body* was poisoned, for my good father and mother watched over me too closely for that; but when I was getting toward marriageable age I rather enjoyed the fun, as I called it then, of persuading—that is, to a greater or less extent—any bright girl whom I came across to think (perhaps in pleasantry) that *she* was to *me* the center of the universe, or was at least for the time being. It was what we used to call at that time "having fun with the girls." Some of us had fun with several different girls at a time. When I became acquainted with Mrs. Root, however, she gave me to understand that, if I proposed to call on her regularly—that is, in a way that would attract the attention of people to the matter—that I could not at the same time keep up similar relations with other girls. She said I was, of course, at perfect liberty to do as I pleased; but if I continued to call on her as I had been doing, I would have to make a choice. Now, I remember distinctly of thinking at that time that I would rather not get married, even if I *was* of marriageable age. I thought I could have more fun, and get more enjoyment out of the world, without being "hitched up for life" to *any* special woman. May God forgive me for letting such a thought come into my mind.

By the way, friends, let us consider this thing a minute; and I wish to speak now particularly to men say between twenty-five and forty years of age. Why did God send you into this world? Was it to get all you can out of it for your own particular *self*, to have *fun* with every thing, say with some pretty girls or some nice bright intelligent woman and all the rest? If so, you do not deserve a human life; and if you follow out that selfish course you will never find any *true* happiness. It is the people of that class who commit suicide. Ernest has often laughed at me for my fashion of asking every bee-keeper, or anybody else with whom I become acquainted, if he is married and has a family. But I still think I am right, that every good man *should* be a married one. A minister has no business being a preacher, and I do not think he ever *becomes* very *much* of a preacher in God's sight (and I hope he does not in the sight of humanity), until he is married to some good woman or has some good woman in view, and lets everybody know that he *expects* to be a married man. I do not care who this hits, for I am sure I am right about it. And the same thing is true of a doctor. There are some greater reasons why a *doctor* should be a married man than perhaps any other professional man in the world. How can a doctor take up his work of helping humanity as he *ought to do* until he has a wife and children?

The article that I quoted from the *Press* tells us that it is the fault of the men themselves in half of the childless homes for having such homes.

Let me put this matter of going through life without marriage in another way. I recently met an old friend of many years ago—a good man and an able one—and yet he is not a married man. I said to him, as I stood before my two sons, Ernest and Huber, "Mr. A., I regret to know that you are still unmarried. Now, suppose I had done as you have done, and yielded to that selfish temptation to go through life without marriage; then these two good men who supply reading-matter for our journal (I am sure our readers will excuse me when I say this) would never have had an existence."

The editor of the *Press* spoke about burning out the eyes of a day-old babe with a hot wire, and we shudder at the thought; and I believe all mankind agree that it is a crime, and a *terrible* one too, in the sight of God and man, to murder these little innocents even *before* they are born. Well, how about the man or woman who refuses to give these little innocents even a *chance* to live?

A good friend of mine, who at that time lived

in the city of New York, said people who live in flats do not have children. The proprietors of these places for homes will not rent them to a family with children, for they do not want children around. Suppose George Washington's parents had decided they could have more "fun" by not getting married at all. May God be praised that Washington's parents were not of that stripe; and, to come down to the present time, suppose the parents of *Orville and Wilbur Wright* had decided they did not want the trouble and care of a family. President Roosevelt has many times reminded us of the consequences of being content with childless homes or living unmarried. He calls it "race suicide." Do you say that the illiterate foreigners, or even the shiftless people of our own land, will furnish children *enough?* Yes, so they will, probably; but who will furnish the money to build the asylums and jails and prisons to care for these children?

Here is another clipping that I wish to give you, from the *American Issue:*

SCIENTIFIC TEMPERANCE SCHOOL CHARTS.

A number of scientific temperance school charts, which are being used in a large number of the public schools of the United States, have aroused a storm of protest on the part of the liquor fraternity because of the terrific arguments against the use of intoxicating liquors which these charts set forth. The charts were carefully prepared by scientific experts; and the facts which they set forth are, while startling, the results of the most thorough scientific investigations.

Dr. T. Alexander Nicholl, of New York, prepared the statistics on heredity, which are shown on these charts with telling effect. The records show that one French and English family of moderate drinkers, in well-to-do circumstances, had 33 descendants. Of these, only 3 were normal. Two of the remaining 30 were suicides; 3 had suicidal mania; 3 were confirmed drunkards; 4 were prostitutes, and 18 had tuberculosis.

Another record, of 76 families of moderate drinkers, with 236 descendants, shows that only 50 were normal. Eight of the remaining number were insane; 21 were confirmed drunkards; 8 were idiots, and 149 had organic disease or neurosis.

Still another record shows that in 24 families of hard drinkers, with 113 descendants, only 20 were normal. Of the remaining 93, 16 were drunkards; 7 were epileptics; 8 were dwarfs; 7 were idiots, and 55 had organic diseases.

The other statistics which these charts show, secured by the investigations of Dr. Demme, show that of ten temperate families, with 61 children, 50 were normal, 5 died in infancy, and only 6 had organic diseases.

Another investigation shows that of 31 families of abstainers, with 116 descendants, 96 were normal, 19 had organic diseases, and one was a drunkard.

The mortality figures shown by these charts are also very interesting. The investigation shows that, of 100,000 moderate drinkers, 44,000 reached 70 years of age, and 45,000 died before 70. Life-insurance companies figure that the lives of beer-drinkers are shortened from 40 to 50 per cent.

The charts further show that 88 per cent of the manufacturers of the United States demand total abstinence on the part of their employees, and that about 1,000,000 of the railroad men of the country are compelled to be total abstainers from both fermented and distilled liquors.

As a further illustration of the preceding we copy the following from the "Anti-saloon League Year Book" for 1908:

DESCENDANTS OF A DRUNKARD.

Pellman, of the University of Bonn, tells of a very notorious drunken woman who died in 1800. A scientific investigation made regarding herself and her descendants has brought forth the following astonishing facts:

The total number of her descendants was 834. Of that number, 709 have been traced, with the result that the record shows that 7 were convicted of murder; 76 were convicted of other crimes; 142 were professional beggars; 64 lived on charity, and 181 of the female descendants were prostitutes. It has been estimated that the cost to the government of the crime and pauperism of this one line of descendants has been $1,250,000.

And also the following from Dr. J. H. Kellogg's "Handbook of Rational Medicine:"

Dr. S. G. Howe attributed one-half of the cases of idiocy in Massachusetts to intemperance, and he is sustained in his opinion by the most reliable authorities. Dr. Howe states that there were seven idiots in one family where both parents were drunkards. One-half of the idiots in England are of drunken parentage; and the same is true of Sweden, and probably of most European countries. It is said that in St. Petersburg most of the idiots come from drunken parents.

Perhaps I should state that Dr. Kellogg makes the above statements as a quotation from Dr. Willard Parker, of New York—one of the ablest writers on this subject the world has produced.

In closing, May God grant that this Home paper may be the means of waking up good men, and I hope you will excuse me for saying some good women as well, to the importance of doing what they can to fulfill God's command to humanity away back in the beginning of the world —"Be ye fruitful, and multiply, and replenish the earth."*

Perhaps some of you may suggest that, if you get married, it might be the means of bringing crippled children into the world as I did with my chickens in the cheap incubator. God forbid. If there are such whose eyes rest on these pages, or any who think that ill health unfits them for marital responsibilities, then go to work this minute, and *make* yourself well. T. B. Terry is telling us how it can be done, and thousands are coming forward as witnesses. This learned doctor who gave us that talk said it is a disgrace to have typhoid fever in any community, and that the time is fast coming when the same can be said of tuberculosis—that the great white plague is going to be fought out and banished; and I am sure there are very few men or women who read these pages but can, if they take sufficient pains, in a few years succeed in securing a degree of health that will permit them to think of raising a family with a very small liability of bringing *cripples* into the world. We are going to have a better "strain" of men and women than the world has ever yet known, and we are going to improve on the human family just as much as we improved on our horses, cattle, pigs, and chickens. God help us. My good friend Terry has finally yielded to my importunity, and is going to write a book this coming winter. May God guide and direct him, and give him health and strength to do it well.

# TEMPERANCE

OUT OF THE DARKNESS AND INTO THE LIGHT; TURN ON THE "SEARCHLIGHT."

I hardly need tell our readers that just at this time Ohio is in the heat of the battle that righteousness may prevail over iniquity. To give you a little illustration of the brazen cheek and effrontery of the enemy, let me mention the fact that our neighboring county of Lorain has just had a vote on county option. Oberlin is in that county, and Oberlin is known the world over as a great center of learning and a radiating source of moral reforms. A big part of Lorain County

* I clip the following from the *Farm Journal*, of Philadelphia:

They say that happiness is found only in the dictionary; but it seems to us that an honest young man, married to a healthy, happy, truly Christian girl who loves her home, comes just about as near human happiness as ever mortal gets; and such a man will not be so ungrateful as to swear, get drunk, or do a cruel or mean act.

To all of which I wish to give a hearty *amen*.

was thoroughly canvassed, and we were abundantly satisfied that a fair vote would make the county unquestionably dry. Imagine our surprise, however, to have it reported *125 wet.* Careful investigation now reveals the fact that the little town of Avon, that contains only about 300 legal voters,* cast a vote of *519.* In many other small towns we find a similar state of affairs. These extra votes were made up of men employed by the brewers to come in and reside a certain length of time. The matter is coming up before the courts; and the question is, "Shall our laws be made by the brewers with their money, instead of by honest votes?" We need the prayers and sympathies of the whole wide world. The outcome of this fraud in Lorain County will probably influence the result in the whole State of Ohio; and Ohio just now stands up before the rest of the United States as an object-lesson. As Ohio goes, so may the rest of the States; and, finally, as the United States goes in this matter of temperance, so may the rest of this world of ours. May God help us to demonstrate to the surrounding nations that God still lives, and hears our prayers, and that there is even *now* "a God in Israel."

Just as the above was dictated, a businesss letter was put into my hand from our good friend Murray—the man who has for many years made the pictures in GLEANINGS. I want to give you the concluding part of his letter:

I am sorry Lorain Co. was off color, and went *wet*, as it somehow seems to hurt our county (Cuyahoga). We had every hope that the good march would continue. I have fought the cursed rum traffic all my life, and in my early days was in the chair of both the Good Templars and Sons of Temperance, and even in the Grand Lodge of such organizations. I have even been shot at by its enemies, and was clubbed insensible by a saloonist who was afterward sent up for a year and a half — in Massachusetts. My early life and opportunities were clouded by the evil, so you need not wonder at the hatred I have for the thing.

You will excuse me for introducing such matters in a business letter; but I feel strongly on all such subjects — not against the individuals in the business of liquor-selling, but on the thing itself. It is from hell, and produces hell. The harder the brewers kick, the worse it will be for them.

Cleveland, Ohio. R. V. MURRAY.

Up to date, Oct, 28, 37 counties in Ohio have voted dry and only 4 have gone wet. One of the latter is being contested on the ground of fraudulent voting.

### TEMPERANCE AMONG BEE-KEEPERS.

At our recent convention in Detroit our good friend G. W. York, whose head is always level, and who loves righteousness and hates iniquity, gave us a grand address on temperance among bee-keepers. You will doubtless get the whole of it in the *American Bee Journal.* Well, now, here is something in the same line. It is an advertisement clipped from the Zanesville *Signal:*

It's not a question of high taxes or low taxes, good business or bad business. It's a simple question of right or wrong.

No man who has a drop of manly blood in his veins will, for any business consideration, vote to retain in our midst the home-wrecking, soul-destroying saloon.

PEIRCE'S HONEY—made by the bees.

Friend E. W. Peirce is not only a successful agent for the Root Company's goods, but he is a bright young man, and I am told he is engaged to be married to one of the brightest young ladies in that whole region. It was my pleasure to see her and shake hands with her, and so I think there can be no mistake in the matter. Any man who puts his name at the bottom of an advertisement like the one above is *sure* to make a good husband and to build up a good home.

* After the above statement (which I clip from the Cleveland *Plain Dealer* for Oct. 22) was in print I was informed that there are considerably *more* than 300 *legal* voters in Avon. I make this explanation because God knows we would not knowingly misrepresent or exaggerate in a matter of this kind.

# HEALTH NOTES

### THE ART OF LIVING LONG.

I hold in my hand a good-sized book of over 200 pages, written principally by a man who lived to be 102 years old; and the very best chapter in the whole book was written when he was 95 years old. Louis Cornaro was born in 1464 and died in 1566. It now seems that there have been for years past persons here and there who have been learning the great truth about controlling our selfish and sensual appetites. At the age of 40, Cornaro was a used-up man. He had wealth, ease, and leisure; but after the doctors told him they could give him no help he started in as did T. B. Terry. His first discourse was written at the age of 83. Permit me to make an extract from it, page 41:

O wretched and unhappy Italy, canst thou not see that intemperance kills every year amongst thy people as great a number as would perish during the time of a most dreadful pestilence, or by the sword or fire of many bloody wars? And these truly immoral banquets of thine, now so commonly the custom—feasts so great and intolerable that the tables are never found large enough to accommodate the innumerable dishes set upon them, so that they must be heaped, one upon another, almost mountain high—must we not brand them as so many destructive battles? Who could ever live amid such a multitude of disorders and excesses?

Please notice what he says about "innumerable dishes;" and may God forgive us as a people for having continued this suicidal fashion up to the present day. At the age of 86 he wrote his second discourse; at 91 his third discourse, and at 95 the last and best of all. He was not only brighter when he neared 100, but a happier man, and perhaps a more useful one, than he had been at any time in his life. Let me make an extract from page 111:

Who could ever find weariness in a lot so truly blessed and happy as the one I enjoy? Yet this happiness would be the portion of every man if he would but lead a life similar to the one I have led. And, assuredly, it is in every man's power to lead such a life; for I am nothing but a man and not a saint, only a servant of God, to whom the orderly life is well-pleasing.

Now, the most wonderful part of it all is that he said in his first treatise, at the age of 83, that he expected to live to be 100 years old, and he repeats it several times, and he *did* live to be 102.

The book does not give very much direction in regard to diet—that is, he does not specify exactly *what* food we should eat. He was not a vegetarian, although I think his food was mostly along that line. He strongly emphasized the importance of a busy outdoor life, but urges at every step *moderation*, especially in having only a limited number of articles of food at each meal, and stopping when we have had just enough so the digestive apparatus can handle it easily and well. Like Terry, he said it is truly wonderful what a small amount of food can sustain life; and he strongly emphasizes the fact that *elderly* people, especially when they give up hard work,

should be exceedingly careful about overeating. A great lot of us, when we get to be sixty or more, propose to "take life easy" and let the younger folks attend to the duties of life. Then if we happen to be so unfortunate as to have little or nothing to do, we get into the habit of eating between meals of this, that, and the other, because we have nothing else to occupy our attention; and the result is a loss of health and perhaps a loss of life.

Besides the Cornaro treatise there is a selection from Lord Bacon and several others along the line of long life. There is an introduction by Joseph Addison, from the *Spectator*, dated 1711.

Here is something more in the same line, which I clip from the Medina *Gazette*, on what is called "Monday sickness."

A bulletin of the Indiana State Board of Health contains some pointed remarks from a teacher concerning the regular "Monday sickness" in the public schools. She said: "More schoolchildren are ill on Monday than any other day of the week. By Wednesday or Thursday the attendance and condition of the pupils are up to the standard, and they stay so the rest of the week. Inquiry showed that every family had an elaborate dinner on Sunday, and that the children and parents ate more on that day and exercised less. Fourteen of twenty-seven children were found to have been 'Monday sick' almost every Monday. Acting upon the idea that the Sunday big dinner was the cause of the trouble, ten children were selected, and the parents were requested to set the ordinary dinner for two consecutive Sundays. The result was, all of the children came to school on the following Mondays, bright, and quite free from the symptoms heretofore detailed."

I may add to the above that one of the teachers of our Medina schools told Mrs. Root that there is more trouble on account of absence or sleepy children on Monday than on any other day of the week, and the cause is no doubt explained in the above. I have long maintained that, if there is any day in the week when the good wife should be excused from getting a regular dinner, that day is Sunday; and yet, be it said to our shame and disgrace, nine out of ten of our homes get up a more elaborate spread for Sunday than any other day, and I am afraid that, on top of that, the children (and may be the parents too) eat a lot of things between meals because they have nothing else to do.

I think I have before mentioned a good woman, a relative of mine by marriage, who did all the cooking for Sunday dinner the day before; and not only the inmates of the home, but any visitor who happened to be there, was obliged to put up with a cold meal on Sunday, and I hope there was nothing very elaborate about it. May God help us to climb out of our bad habits, especially when we remember that the ladder that takes us up stands on earth and reaches toward heaven.

A few days ago I suggested to friend Terry that he and I would be expected to demonstrate the correctness of our own teachings by living to be 100 years old; and I also suggested that we ought to get to work and see which will live the longer. I do not mean, dear friends, simply prolonging existence, but, on the contrary, like Cornaro, do our best for the world and for humanity when we are along in the nineties and close up to a full century. Perhaps you would like to know what Terry says about it. Here it is:

Barring accident, friend Root, you can gradually become ideally well in every way—able to do a full man's work, and keep so for many years. I intend to, and have no limit set in my mind; leave that to God after doing my part. I intend to be young at 100. By the way, let us spend the days together when we reach the 100-year mark. There is not the slightest joke in any of this. I am seriously in earnest. It doesn't seem possible; but I shall be younger and better in every way ten years from now than I am to-day, judging from past experience. You notice Cornaro found it the same. T. B. TERRY.

Hudson, O., Oct. 15.

Mrs. Root suggested that she fears we two old men will have to run the latter end of the race without our wives if we expect to get to the 100 mark. I replied that friend Terry expects to take his wife along with him, and that, if Mrs. Root did not get contrary, I should greatly enjoy her company too up to the 100 mark. Now, we are not at all exclusive. If there are any among our readers who wish to "join the procession," come right along. The more the merrier.

P. S.—I would suggest that we "old fellows" spend our *winters* in Florida, providing I can persuade friend Terry to go along with me. We can thus be outdoors all day long, and I am *sure he and I* can find something to be busy about, and something to be *happy* about, even if we are over 90.

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### THE VALUE OF RAW APPLES.

The following, which I heartily indorse, was sent us by J. L. Peabody, of Denver, Col. I am unable to give the name of the periodical from which it was taken, but it was probably some Denver paper.

Many persons fancy that raw apples are indigestible, and endurable only in the early morning. Doubtless the old adage that fruit is gold in the morning, silver in the middle of the day, and lead at night is to some extent answerable for this erroneous impression. Dietitians say that raw ripe apples contain more phosphates in proportion to their bulk than any other article of food, fish not excepted. A recent writer on this point boldly declares that in this lies the secret of healthful longevity. They correct biliousness, and act as a sedative upon the racked nerves, and allay insomnia.

"Eat uncooked apples constantly, although, of course, in moderation, and drink distilled water only, and years will be added to your life, while the evidences of age will be long in coming."

This argument is based on the supposition that, as age advances, the deposits of mineral matter in the system increase, and that aging is little more than a gradual process of ossification.

Phosphoric acid contains the least amount of earth salts, and for that reason is probably the nearest approach to the elixir of life known to the scientific world.

If you wish to live long, retain your youth at the same time, and to increase your brain tissue, eat plenty of apples, drink only distilled water, and eat as little bread as possible. Tart apples are far more wholesome than sweet, and all, like potatoes, should be fully ripe when eaten.

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### SELLING SECRETS, ETC.

We are still at it, friends, like the Irishman who had six wives. He said, in explanation of his conduct, "Plase yer honor, I was thrying to get a good one;" and we are still sending out money for secrets in order "to get a good one." E. H. Palmer, of Alfred, N. Y., says in his circular that his wonderful secret of selecting laying hens is worth $50.00. But out of the sympathy and generosity of his heart he is selling it for only 50 cents. Before you can have this wonderful information, however, you have to sign your name to a pledge not to divulge any thing contained in the booklet. There are two agreements, and both must be signed by the purchaser; and the matter is so valuable, and his "profit" so *small*, that he adds: "Personal check or draft will positively not be accepted unless 15 cents is added for exchange."

Well, I sent on my 50 cents, but I did not sign any agreement whatever. But I got the book all the same by the very first mail, as I always do. In fact, I have *never failed* so far to

get a secret, even if I did neglect to sign any contract. This wonderful book contains just four pages about the size of a postal card, and it is the old lingo right over—see page 43, Jan. 1st.

There is one funny thing about this secret business. There seem to be a good many fellows who have not brains enough to originate any thing, and so they copy some other man, thinking that these other fellows, Hogan and Potter, for instance, are making so much money in the secret business that there is no reason why they should not have some of it. Just see how many are copying the secret regarding sprouted oats—the best food in the world for chickens, costing only 10 to 15 cents a bushel. And now somebody advertises it at only 8 cents a bushel, and every time it turns out to be sprouted grains. But every man claims this as his own invention. *He* would not be guilty of copying (no, no) or stealing a secret from somebody else.

Let me say once more, 50 cents is a *big price* for a book of only four little pages. Mr. Palmer also advertises his great "profit-paying" White Leghorn chickens and eggs in this same *fifty-cent book*.

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### PRESIDENT ROOSEVELT AND BIRDS.

In the last issue of GLEANINGS is a clipping in which a boy, when remonstrated with for shooting birds, says, "President Roosevelt does it." The President does sometimes shoot a few game birds, but does not shoot song or insect-eating birds, and he has probably done more to preserve bird as well as animal life than any other man in the country by setting aside reservations where they are protected all the time by the Audubon Societies. By sending 20 cts. to the Macmillian Co., Harrisburg, Pa., for a copy of the October number of a magazine called *Bird Lore*, you can find out more about some of the reservations.

Wall Lake, Ia. JOHN A. SPURRELL.

I am glad to give place to the above, friend S.; and since you mention it we ought to know that the President would not practice or encourage the slaughter of song birds or any other birds not fit for food, or which are not detrimental to fruit and crops. There are certain birds that ought to be gotten rid of. The English sparrows are not only consuming the grain provided for our chickens, but they fill our eavespouts with their excrement, and scatter it over our walks and porches unless we continually fight them away. If we are going to have pure drinking-water we do not want guano mixed in with it every time it rains. Notwithstanding all this, I feel pained when I see young boys around with bird-guns. I hope and pray that birds detrimental to crops and health may be destroyed in some other way.

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### ALFALFA.

I hope you are trying a little alfalfa — a patch big enough for your chickens if nothing more. It does not make any difference where you live: it can be made to grow all the way from Maine to Florida. Here are the directions boiled down, which I clip from the *Ohio Farmer*, written by Willis O. Wing, the great authority on the subject of alfalfa:

Please do not make a mystery of alfalfa-growing any longer. It is such a simple matter that one can write all the rules needed in small space. Here they are: Drain the water out; let the air into the soil; fill the land with lime if nature did not do it; get humus into it—stable manure or some vegetable matter to rot and promote the life of bacteria there. Put in plenty of phosphorus. Sow good seed, with a little inoculated soil. Lime brings alfalfa. Alfalfa brings corn. Corn brings money, homes, pianos, and education for farm boys.

### THE WRIGHT BROTHERS' AND OTHER FLYING-MACHINES.

We are pleased to note that Wilbur Wright has so far recovered from his recent accident that he is going back to his home in Dayton, and probably is there at the present writing. The broken bone has made a very quick and satisfactory mend. The following, which we clip from the Cleveland *Plain Dealer*, indicates that the Wrights may soon have competition in their own town. The clipping was dated Oct. 27, and comes from Dayton.

Frank J. Heinfelt to-day made a successful flight of 1500 feet with an aeroplane materially different from that of the Wright Brothers. In this machine the single-plane principle is used, while the Wright machine has double plane surfaces. Although hitherto unknown in the aeronautic world, Mr. Heinfelt has built three machines, paying his expenses out of his salary as a stenographer. His motor was given him by a friend who took it out of an old automobile. The flight to-day was terminated by a lack of skill on the part of the manipulator, who brought the machine to the ground too suddenly and broke one of the wings. Repairs will be made at once. The flight was witnessed by several persons.

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### A. I. ROOT, AND HIS DEPARTMENT IN GLEANINGS.

I have been considerably worried of late, dear friends, for fear that I might, perhaps, unconsciously, as I get along in years, be taking more space in these pages than is really wisest and best. I have often heard it said that, as ministers of the gospel get older, they become lengthy and tedious in their sermons. Now, whenever that thing happens in my case I hope some good friend or friends will be frank enough to say so. The foregoing was suggested by a letter just put into my hands. Here it is:

I do not keep bees now, but can not do without GLEANINGS, as the Home talks are worth more to me than I can name in dollars and cents. Long live A. I. Root! He can not write too much. Tell him to write an A B C poultry-book.

Somerville, N. J., Sept. 26. L. B. THATCHER.

Many thanks, my good friend T., especially for the sentence that reads, "You can not write too much." Of late I have been using five to six pages in each issue of GLEANINGS; but when I get down in Florida, where I have no stenographer to talk to, as I do to my old and tried friend W. P. Root, it will be a harder task for me to occupy so much space.

Another thing that troubles me is that I don't seem called upon just now to say very much in regard to bee culture; but it may be that others fill that department so capably that it is not necessary for me to talk on bees. I should dearly love to write an A B C book on poultry while my mind seems to run so much in that direction. Of course, I have not had any great experience, even though I have kept chickens most of my life; but I have visited and am in touch with many of the largest and foremost poultry establishments in our country.

Now, if there are some of our readers who do not agree with Bro. Thatcher that the originator of GLEANINGS can not write too much, especially in his old age, I hope they will be equally frank and outspoken. There is one class of people who, I am well aware, are not particularly well pleased with my department; and these are the dear brothers (and I hope they will let me call them brothers) who are or have been heretofore in the saloon business; for I am and shall be, while God permits me to hold the breath of life, fighting every thing that is unrighteous.

# BOOKS FOR BEE-KEEPERS

## The Swarthmore Library.

A series of booklets on bee subjects by E. L. Pratt, of Pennsylvania, known to the bee-keeping world as "Swarthmore." These books are full of the most valuable information. The Swarthmore method of queen-rearing is spoken of as the most important innovation in bee-keeping of recent years:

INCREASE. The first of the series. Any one desiring to enlarge his apiary should learn the Swarthmore way. Price, postpaid, 25 cts. French edition, entitled "Accroissement," 50 cts. postpaid.

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No. 3. HONEY-COMB. This is a little book showing the construction and development of the honey-comb, and is alike useful and interesting.

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No. 30 THE BEE-KEEPER AND THE FRUIT GROWER.

## Popular Works on Bee Culture.

The list of books below are for the most part by writers of well-known literary ability, and are very interesting indeed, and are greatly valued by bee-keepers and others for their literary merit, and the popular style in which bee-keeping is depicted and we are very glad to have the opportunity to offer them to bee-keepers and others. The description of each work will give a fair idea of the same, but a pamphlet giving an extended view of these and the practical books on bee culture listed in the preceding columns will be sent on application.

THE HONEY-MAKERS. By Miss Margaret W. Morley. This is the story of the life of the bee, told in very interesting style—how it lives, gathers honey, and all about it. While clothing the general subject with an air of poetry, it seems to be entirely within the limits of known facts while attempting to deal with them. We believe it will give all thoughtful bee-keepers a greater liking for their business to read it. Probably it has more to do with the curious traditions connected with bees than any other book of the kind. Price $1.50 postpaid; by freight or express, 10 cents less.

THE LIFE OF THE BEE. By Maeterlinck. This is a masterpiece of fine writing by a modern Shakespeare. The words fly from the pen of this writer like sparks from a blacksmith's anvil, the result being a glorification of the honey-bee. Maeterlinck is considered by many to be the finest writer now living, and any thing from him is sure to be worth reading. He is, to a certain extent, familiar with bee-keeping, but the truth about bees does not interest him so much as the romance of the queen and the drone and the swarming instinct. The book itself is well bound and beautifully printed. Cloth bound, 42 pages. Ed. 1903, price $1.40 postpaid; by freight or express, 10 cts. less.

THE BEE PEOPLE. A book on bees, especially for children, from the pen of Margaret W. Morley. Including its elegant illustrations, it is, in some respects, the prettiest bee-book in existence. It has 177 pages, very coarse print, the reading being ingeniously interwoven with the illustrations showing the parts of the bee. The story of bee-life is told in a fascinating manner, and is well calculated to get the casual reader, as well as children, interested in this useful insect. The cuts go just enough into detail to explain fully the lesson taught, without confusing the mind with other things. We think the book well worthy a place in every bee-keeper's home. Fittingly designed cover. Price $1.50 postpaid; by freight or express, deduct 10 cents.

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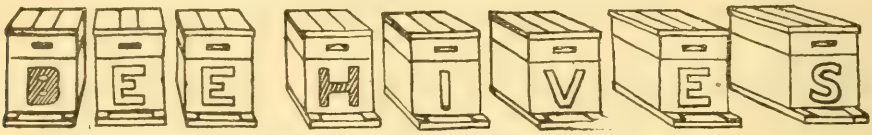


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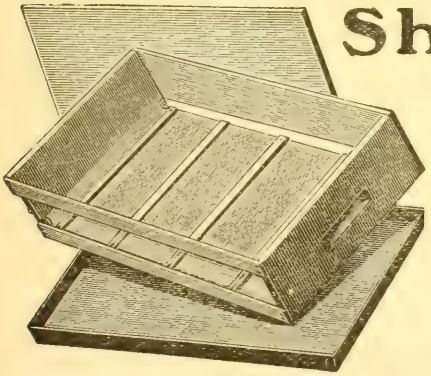

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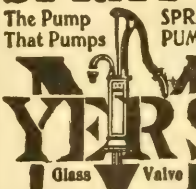

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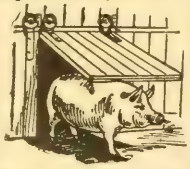

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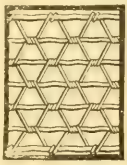

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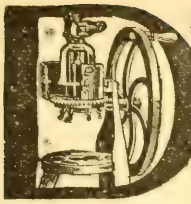

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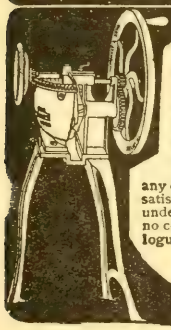

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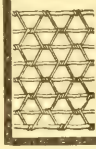

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Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

FOR SALE.—To reduce stock I offer for sale as follows; 26 cases of stock No. 40, and 40 cases of stock No. 44 at $10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries; being extracted from select all-sealed upper stories. A third of a century's experience in the production of fine extracted honey. Ask for my little circular "A Word about Extracted Honey;" this will explain why it pays to buy this delicious stock.
E. D. TOWNSEND, Remus, Mich.

LISTEN!—The two cases of honey are received, and I am greatly pleased with it. I don't think I ever saw finer honey in my life. E. W. PEIRCE, Zanesville, Ohio.
You will be just as well pleased with your honey as Mr. Peirce if you send your order to JAY NORTH, of North Adams, Mich. One 60-lb. can, 8½ cts.; two 60-lb. cans, 8¼ cts. For larger orders write for prices. Sample free.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 8c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Comb honey, amber, buckwheat, and No. 2 white, at $2.75 per case of 24 sections; in 25-case lots, 5 per cent off; light amber extracted (three-fourths clover), in 60-lb. cans, two to case, at 8 cts. QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan, Ky.

FOR SALE.—I have some extracted honey, well-ripened, fine, clover and basswood, in new five-gallon round cans, at $5.50 a can; sample free; delivered f. o. b. cars here; ought to suit anybody. MATHILDE CANDLER, Cassville, Wis.

FOR SALE.—Three thousand pounds of fine buckwheat honey in new cans. Send for sample and prices.
EARL RULISON, Rt. 1, Amsterdam, N. Y.

FOR SALE.—Clover, amber, and buckwheat extracted honey. Table quality. Write for prices, stating your needs.
C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Honey, clover, or buckwheat, comb or extracted. Write for price. Sample of clover extracted free. State quantity and quality desired. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Choice extracted honey, mostly clover and raspberry mixed; also light buckwheat. Price on application. Sample 10 cents. JAMES MCNEILL, Hudson, N. Y

FOR SALE —8 tons of raspberry and basswood extracted honey, thick and very fine flavor, in new 60-lb. cans, 2 in case, at 7½ cts., f. o. b. cars here.
J. N. HARRIS, Mancelona, Mich.

FOR SALE.—2½ tons clover, also light amber; new crop, ripened on hives, new 60-lb. tins; 8½ to 10, f. o. b. Sample 10 cts.
E. L. PRATT, Queen-breeder, Swarthmore, Pa.

FOR SALE.—Well-ripened clover and buckwheat honey, in small or large packages; ask for sample and what you want.
D. H. COGGSHALL, Groton, N. Y

FOR SALE.—Fine extracted honey, 5-lb. cans up to barrels.
JULIUS GENTZ, Shawano, Wis.

FOR SALE.—Fancy and No. 1 white-clover comb honey.
ANTON G. ANDERSON, Holden, Mo.

## Honey and Wax Wanted

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

## Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

FOR SALE.—Delaware farm, public road; good buildings, good water; fruit, wood; rural delivery; school, churches, stores, mills, railroad depot, canneries, blacksmith shops, all convenient; an ideal place for bees, poultry, fruit, and trucking.
L. A. LUDWIG, Marydel, Md.

FOR SALE.—Small homestead, first-class buildings, fully equipped apiary, in one of the most desirable locations to be found; will sell for less than the improvements can be replaced for. This was the home and the apiary of the late B. Taylor at Preston. Write for particulars. ALF. A. ZIEMER, Waltham, Minn.

FOR SALE.—California foothill ranch, San Diego Co., 160 acres, twenty-five in cultivation; house and barn; three acres orchard; 100 hives of bees; one span of horses; bee material and farming tools, $1800.
AUSTIN E. WHITE, Fallbrook, California.

FOR SALE.—Excellent location for apiary in the white-clover belt of Northern Wisconsin. Basswood, goldenrod, dandelion, and willow, abundant; 8½ acres, dwelling, telephone, R. F. D. Clear title. Price $800, half cash, balance one and two years time on secured notes. ARNT ARNESON,
R. 5. Rice Lake, Barron Co., Wis.

FOR SALE.—Eleven acres, new house, 180 stands of bees, household goods, 2 horses, wagon, top buggy, pigs, chickens, tools, vinegar; including every thing on the place; cheap, $1800. Write for particulars. L. W. BLIZZARD, Sunny Side, Cal.

## For Sale

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—About 1300 or 1400 cases, two five-gallon cans each, practically free from nail-holes, and were new tins when originally shipped to us. Make us an offer.
CLEVELAND HEALTH FOOD CO., Cleveland, O.

FOR SALE.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.
KENSINGTON CATTERY, Marion, Ohio.

FOR SALE.—Shipping-cases, the no-drip kind; overstocked; get our special prices. A. G. WOODMAN CO., Grand Rapids, Mich.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Indian Runner ducks, great layers, cheaper than ever, $2.00 each; $3.50 per pair, $5.00 per trio. Circular free.
KENT JENNINGS, Mt. Gilead, Ohio.

## Wants and Exchanges

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—Bees. Spot cash prices. All letters answered F. B. CAVANAGH, Springport, Mich.

WANTED.—Bees on shares or lease for season of 1909; Pacific States preferred. C. A. WURTH, 640 Leverette St., Fayetteville, Arkansas.

## Bees and Queens

FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. RAILS, Orange, Cal.

I will sell or lease to a good bee-keeper 1000 hives of bees. These bees are in good locations in the Mesilla Valley, New Mexico—finest climate in the world; no cold winters; never been a failure in the honey crop in this valley; bees averaged 150 lbs. of extracted honey to the hive in 1908.
MRS. L. C. HARRIS, Mesilla Park, New Mexico.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

FOR SALE.—100 colonies of bees, finely equipped for comb honey in the famous clover and buckwheat districts of Seneca Co., N. Y. Good chance for out-apiaries.
B. F. HOWARD, Union Center, N. Y.

FOR SALE.—Italian bees. Write for bargains in bee-supplies. Barred P. Rock, White Wyandotte cockerels, each, $1.00.
H. S. DUBY, St. Anne, Illinois.

## Help Wanted

WANTED.—Capable man 30 to 40 years of age, married, to take charge of small farm in Ohio. State experience, salary wanted, date could begin, and give names of references. Address JOHN SMITH, Gleanings in Bee Culture, Medina, O.

## Situations Wanted

WANTED.—Situation. My bees failed me this season. I wish employment for winter; might arrange to work for longer time. Am 34 years of age, single, strong, and well, free from bad habits; a hustler; am well versed in bees, poultry, and incubators; also care of stock. Can furnish most satisfactory reference. FRED G. MASON, Fabius, N. Y.

WANTED.—Situation by practical bee-keeper, or bees on shares in Porto Rico or Jamaica. B. F. HOWARD, Union Center, N.Y.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall.
A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, $3.00. A. L. AMOS, Comstock, Nebraska.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Mott's long-tongues by return mail, also goldens—hardy, yet gentle, but little or no smoke. E. E. MOTT, Glenwood, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. For prices, see display advertising columns in this issue. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

TENNESSEE QUEENS.— Best that experience can produce. Untested three-band and goldens, $1.00 each; 6 for $5.00; 12 for $9.00. Caucasians, $1.25 each. Write for circular; order goldens from Ben G. Davis; others from John M. Davis, Spring Hill, Tenn.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

*Honey Market reports continued from page 1202.*

COLUMBUS.—The demand for honey shows some improvement, and we believe that a steady demand will be in evidence the rest of the season. The market to-day on strictly fancy white, 15; No. 1 white, 13½ to 14; No. 2 white, 12. Amber honey is very draggy, the top price being about 10 cts. per lb.
Oct. 20. EVANS & TURNER, Columbus, O.

NEW YORK.—The demand for honey is good, particularly on fancy white-clover and buckwheat comb honey. Ship now to obtain best prices. The following are the prices we are getting: Fancy white clover, 15 to 16; No. 1 ditto, 13 to 14; No. 2 ditto, 11 to 12; white extracted, 7 to 7½; light amber, 6½ to 7; buckwheat, 6½ to 7; fancy buckwheat comb honey, 12 to 12½; No. 1 ditto, 11 to 12; No. 2 ditto, 10 to 11.
CHAS. ISRAEL & BRO.,
Oct. 21. 486 Canal St., New York.

NEW YORK.—The demand for comb honey is fair, but not up to that of former years. Receipts are sufficient to meet demands. There is no overstock, however, and prices are holding firm. We quote: Fancy white, 15; No. 1, 13 to 14; No. 2, 12; dark and amber, 10 to 11, according to quality and style of package. Extracted is in fairly good demand, but supplies are large. We quote: California white sage, 8½ to 9; light amber, 8; white clover, 8 to 8½; amber and dark, 6½ to 7; Southern, in barrels and half-barrels, 60 to 75 cents a gallon, according to quality. Beeswax is dull and declining. We quote nominally 28 to 29.
HILDRETH & SEGELKEN,
Oct. 22. 265 Greenwich St., New York.

SAN FRANCISCO.—Prices quoted by the packers here are steady to firm as formerly given. Small lots are still coming forward from the growers, and the demand is fair, with considerable of the better grades moving east. We quote: Water-white comb, 16 to 17; white, 15; water-white extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5¾.—*Pacific Rural Press*, Oct. 17.

# SPECIAL NOTICES

## By Our Business Manager

HALF-POUND TUMBLERS.

We have a new supply of half-pound tumblers in our branch offices at Chicago, New York, and Philadelphia, the same size as No. 12 in our honey-package catalog. These came from another factory, whose number for them is 50. They are packed 4 dozen to the case and 30 dozen to the barrel. We make a special price for a short time as follows:

Half-pound tumblers, 4 doz. to case, 90 cts. per case.

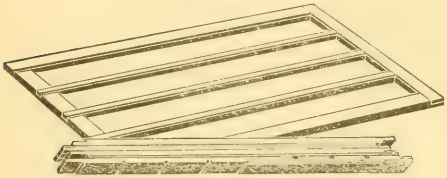
Half-pound tumblers, 30 doz. to barrel, $5.50 per barrel.

Six cases or more at 85 cts.; 25 cases at 80 cts.; 5 barrels or more at $5.25 per barrel. Barrels of 32 dozen may, in some cases, be substituted at 25 cts. each more than above prices.

These prices are not subject to early-order discount, but are special, good for only a short time.

A BARGAIN IN SQUARE JARS.

In order to reduce a surplus stock we are prepared to offer a special bargain in square jars of small size. These are put up 100 to the crate, and, including corks, we offer them as follows: 5-oz. square Pouder jars, including corks, $2.00 per 100; ½-lb. square Pouder jars, including corks, $2.25 per 100. In 500 lots you may deduct 5 per cent, and in 1000 lots 10 per cent from above prices. To make a really neat and attractive finish, tinfoil caps should be added. We will include these at 25 cents per 100 extra, either size. This is a much handsomer package than a tumbler or jelly-glass, and at these prices it costs little if any more. Our stock offered at this price is limited, and the price holds only while the stock lasts. Shipments can be made only while the stock lasts. Shipments can be made only from Medina, at which point only are these jars in stock.



COLD-FRAME SASH.

As cold weather approaches, truck-gardeners are making plans for protection to the plants. We are prepared to furnish not only the regular cold-frame sash, 3 ft. 4 in. by 6 ft., but we also make special sash to order. The regular sash are usually shipped knocked down. Price 90 cts. each; 5, $4.75; $8.00 for 10. If put up, 10 cts. each extra, without paints; add 10 cts. for each coat of paint and $1.00 for glazing, making the sash complete, with glass and two coats of paint, $2.10 each. Our sash are made of cypress, 1⅜ thick, and as regularly furnished they are grooved for glass to be butted together. If preferred we also rabbet the bars so glass can be lapped and set in putty. Regular sash take four rows of 8x10 glass. We make on order other styles and sizes Enquiries and orders solicited.

# Special Notices by A. I. Root

BASSWOOD-TREES FOR FALL PLANTING.

We have for years sent out little trees in both fall and spring; but of late the evidence seems to be considerably in favor of spring planting. We are still prepared to furnish trees, by mail or express, as we have in former years, but I should be glad to know how many have, in former years, succeeded in planting basswoods, especially in the fall. A brief report on a postal will be sufficient. If you wish to risk fall planting, the prices will be as follows: Trees one foot or under, 10 trees, 30 cts.; 100 trees, $2.00. The above by mail, 10 trees, 35 cts.; 100, $2.25. Larger trees, one foot to five in height, by express, 10 trees, 75 cts.; 100, $5.00. We can ship them any time before the ground freezes. We would not advise fall planting during a very dry spell of weather. Our trees have passed Government inspection.

BATTERY-TESTERS TO ASCERTAIN THE STRENGTH OF DRY BATTERIES.

Everybody who has any use for dry batteries should certainly have one of these testers. One battery may do twice as much work as another one, or more; and it is very important to be able to pick out the weak ones and use the strong ones as long as they will last. With my automobile I carry with me only one or two new batteries. When the current becomes weak I can pick out the poorest one in a few minutes and replace it with a brand-new one. Without this battery-tester you would have to carry a full set and then throw away your old sets, when some of them might be *almost* as good as new. We can mail them anywhere for $1.00. Full directions go with each instrument.

POULTRY-BOOKS AND POULTRY-JOURNALS.

Every little while somebody is asking to be advised in regard to the best book or journal on poultry. This is a hard matter to decide. It depends a good deal on the branch of business you are going to take up; and it depends on whether you make it a side issue to keep a few chickens in your back yard or whether you wish to give your whole time and attention to it. On page 965, August 1, I gave a list of some of the very best books that we have in stock, that are offered to the readers of GLEANINGS at just half price. I do not know of any better books than these; and as none of these books are sold out but one, I advise you to turn back to that number and read the list over again. These books are all nicely gotten up ,and offered at half the regular publishers' price to any one who sends a dollar for GLEANINGS or to any one who has paid up for GLEANINGS for one year or more ahead.

## Convention Notices.

The annual meeting of the Middlesex Bee-keepers' Association will be held in the City Hall, London, Ontario, on Saturday Nov. 7, commencing at 10 o'clock. A good program is arranged, and all will be welcome. E. T. BAINARD, Sec.

BEE-KEEPERS' CONVENTION AT YORK, PA.

The Pennsylvania State Bee-keepers' Association will hold its annual convention at York, in the Court-house, on Thursday and Friday, November 12 and 13. The program is not completed; but as it now stands it may be announced to begin at 1:30 P. M., Thursday, with an evening session; and two sessions Friday forenoon and afternoon. Dr. E. F. Phillips will speak on one or both of the following subjects: A general discussion of apiculture in the United States, and the treatment of bee diseases. Professor Surface will speak on hay and honey-plants. Mr E. R. Root will be present, and will probably speak on some phase of bee-keeping. A. F. SATTERTHWAIT, Sec.

MEETING OF MASSACHUSETTS BEE-KEEPERS.

The Massachusetts Society of Bee-keepers had a delig tful field meeting July 18, at the camp of Mr. F. H. Farmer, in Littleton, Mass. The weather was delightful, the invited guests from Worcester were in their most genial mood, and the camp was an ideal place for such a meeting.

Among the speakers for the day were Mr. Hixon, secretary of the Worcester Society; Mr. Britton, of Canton; Mr. Cooper, of Stoughton; Mr. Byard, of Marlboro; Mr. Barrett, of Hyde Park; Mr. Blake, of Ashby, Mass., and Mr. Taylor, of Southboro.

All sorts of subjects pertaining to honey and the care of bees were discussed, and a practical lesson given in the transferring of a colony from a box hive to a frame hive, by Mr. Farmer and Mr. Lamb.

Our basket lunch was supplemented with ice cream and coffee through the kindness of our host.

The slight shower in the afternoon did not dampen the ardor of the society in the prosecution of its work, and the appointment of a legislative committee to work with the Worcester committee for legislative aid against foul brood testified to the earnestness of the society. There were about 75 present, and some new members were taken into the society. Mr. Robbins had a fine specimen of honey in section boxes—a rack all nicely filled. Mr. E. C. Britton, of Canton, Mass., a member of the society, had a very fine specimen of apple-blossom honey in one of the Danzenbaker frames. He informed us he had seven more at home, equally good. I was fortunate enough to secure one of these frames, so I can vouch for the quality of the same. I never saw nicer. All this was from the Adel queen. If I am not mistaken, these queens can now be obtained of Mr. A. D. Tuttle, 114 Portland Street, Haverhill, Mass.

Our next meeting will be November 7, 2:30 P. M., Ford building, corner Ashburton Place and Bowdoin Street. The speaker will be Prof. Paige, Amherst College, Mass. The subject of foul brood and how to treat it will be given. Other speakers are expected on other subjects. X. A. REED, Pres.

Belmont, Mass., Oct. 14.

# ABC AND XYZ OF BEE CULTURE

## By A. I. & E. R. ROOT

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### READ WHAT EXPERTS SAY OF IT

The Christmas mail brought me what is probably as useful and beautiful a Christmas present as I ever received—a morocco-bound copy of the new edition of the A B C and X Y Z of Bee Culture. Bee books and journals have come to my desk of which it seemed as though the least said the better. Not so with this book. On the contrary, it seems as though words were lacking to do it justice. There are many other bee-books, each filling its niche, but, in all the world, there is nothing so comprehensive as the A B C and X Y Z of Bee Culture. There is no point in the wide domain of apiculture that is not touched upon in this volume, and the information is the very latest and most authentic, well written and well illustrated. The amateur and the expert are both served equally well.—W. Z. HUTCHINSON, editor and proprietor of the *Bee-Keepers' Review*, and author of Advanced Bee Culture.

No bee-keeper's library can be at all complete without a copy of this magnificent apiarian work. It has reached a sale of over 100,000 copies already, being the most largely sold book on bees in the world. Better send to us for a copy to read during the long winter evenings.—*American Bee Journal.*

This work of 536 pages is, as its name implies, a complete cyclopædia of everything pertaining to bees and bee-keeping. It was originally compiled by A. I. Root, who in the 1877 preface, after stating his indebtedness to Langstroth, Quinby, and others, says that "A great part of this A B C book is really the work of the people, and the task that devolves on me is to collect, condense, verify, and utilize what has been scattered through thousands of letters for years past." Since the first copy of this work appeared, now thirty-one years ago, it has undergone many revisions, and has had many additions, both of letterpress and illustrations, while the rapid advancement in bee culture has made it necessary in many cases to remove whole articles and rewrite them entirely. The revision has been ably carried out by E. R. Root, the present editor of GLEANINGS, who has had the assistance of a number of well-known and able men. In the preface the names of the writers of the different articles are given. For instance, we find Dr. C. C. Miller writes on honey-comb and out-apiaries; Dr. E F. Phillips on the eye, parthenogenesis, and scent of bees; E. R. and H. H. Root on wax and wintering, both of these having carried out a number of experiments on these subjects. There are also articles by W. K. Morrison and Mrs. Comstock. It seems almost superfluous to say any thing about a book of which already 100,000 copies have been sold; the simple fact speaks for itself that it fills a want, and is an attestation of its worth. Among the articles that have been revised we find the new methods of queen-rearing described, so that the practical bee-keeper will have the latest and best ideas on the subject before him for reference. The new methods of wax-production are treated in an exhaustive manner; and as this subject is of more importance than formerly, greater space has been devoted to it. We have nothing but good words for this work, and recommend our readers to get a copy of the 1908 edition. The work is profusely illustrated and beautifully printed, and is a credit to the publishers.—By T. W. COWAN, Esq., editor of the *British Bee Journal.* Mr. Cowan is the author of two first-class books on bees and bee-keeping, "The Bee-keeper's Guide" and "The Honey-bee."

*How can you better invest $1.75 a year for your family than by subscribing now for*

# The Youth's Companion

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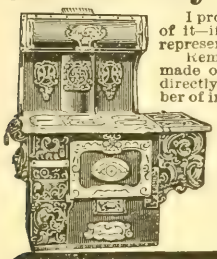
I promise you that I will save you $5, $6 or $10 on our smallest stoves, and as high as $18, $20 and even $30 on our largest. And I promise you that you cannot get **anywhere** at **any** price, a better stove or range than the Kalamazoo.

Just let me quote you prices. Take our catalogue and **compare** the Kalamazoo **quality** and **prices,** with the best line of stoves and ranges you can find sold at retail. **That** will tell the story. You can see for yourself. You want to save money and you want to get high quality. Why not investigate our plan, then? Why not let me show you the difference between manufacturers' prices and retail prices on stoves or ranges?

We sell to you, direct from the factory, at actual factory prices,

## On 360 Days Approval Test—We Pay the Freight



I promise, in black and white, to refund your money—every cent of it—if you do not find your purchase in every way exactly as represented.

Remember, every Kalamazoo is of the highest possible grade, made of the best materials and in the best manner. You deal directly with the manufacturers—a company that has a larger number of individual customers than any other stove company in existence. We have sold thousands of stoves and ranges to readers of this journal, and no doubt can refer you to near neighbors who have saved money by buying a Kalamazoo. Many customers write that they have saved enough on a single Kalamazoo to pay for a whole season's fuel. You can save enough to buy a new suit, a new dress, an article of furniture, or perhaps to pay your taxes. Is it not to **your** interest to get our prices?

## Send Postal for Catalogue No. 416

**All** Kalamazoo cook stoves and ranges have patent thermometers which make baking and roasting easy.

describing more than 300 sizes and styles of Coal and Wood Ranges, Coal and Wood Heaters, Hotel Ranges, Base Burners, Laundry Stoves, Etc.

I **know** that if you get our prices—and see our quality you will not even **think** of buying any other make. Let me show you how much you can save.

**William Thompson, Vice-Pres. & Gen. Mgr.**
**KALAMAZOO STOVE CO., Mfrs. Kalamazoo, Mich.**

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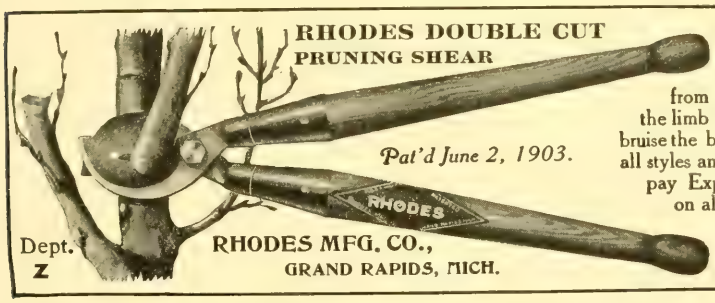



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Dept. Z

RHODES MFG. CO.,
GRAND RAPIDS, MICH.

---

# Texas Land $1.00

## To $5.00 Per Acre

Texas has passed new School Land Laws. Millions of acres are now to be sold by the State at **$1.00** to **$5.00** per acre; only one-fortieth cash and no more to pay for **40** years, unless you desire; only 3 per cent interest You can buy **160** acres at **$1.00** per acre, payable **$4.00** down and **40** years' time on the balance, 3% interest. Greatest opportunity ever offered to investors and farmers. Texas land is better than Oklahoma, Iowa or Illinois. Send 50 cents for Book of Instructions, New State Law, Map of Texas, and brief description of over **400 million acres** of vacant public lands in 25 different States, which are open to homestead. Three Books for $1.00.

**E. C. HOWE, 938 Hartford Building, CHICAGO, ILL.**

---

# CALIFORNIA CHRISTMAS-BOX

25 lbs. Dried Fruit, 12 cans Canned Fruit, 1-2 gal. Honey, 8 lbs. Nuts.

Guaranteed first quality and this year's crop.

**THIS BOX COSTS $7.50** **We Pay the Freight**

TWO OF OUR ASSORTMENTS: 50 pounds Dried Fruit, $6.00; two doz. Canned Fruit, $4.75; combination, two boxes, $10.50. Three colored Souvenir Post-cards and price list Free.

**CALIFORNIA FRUIT PRODUCTS COMPANY,**
Ref. First National Bank. **Ave. I, Colton, California**

---

**1000 FERRETS. Some trained.**

Price list and booklet mailed free.

N. A. KNAPP, . . ROCHESTER, OHIO.

# HONEY

We have on hand a fine lot of new extracted white-clover honey which is excellent, and which we offer at the following prices:

| | | |
|---|---|---|
| Barrels (about 550 lbs. each) | 8c | per pound |
| Ten 60-lb. cans or more | 8½c | " |
| Two 60-lb. cans or more | 9c | " |
| One 60-lb. can | 10c | " |
| Six 10-lb. cans or more | $1.15 | each |
| Twelve 5-lb. cans or more | 60c | " |

After September 20th we can furnish amber fall honey at the same prices as above.

Sample free

**DADANT & SONS, Hamilton, Ill.**

# FOR OVER 25 YEARS

our make of goods has been acknowledged to be in the lead as regards WORKMANSHIP and MATERIAL.

## Our AIR-SPACED HIVE is a most excellent winter hive,

and fully as good and convenient for summer management as the single-walled. Same inside dimensions as regular Dovetailed hives; all inside material interchangeable with Dovetailed hives.

## We manufacture full line of BEE-KEEPERS' SUPPLIES.

| | | | |
|---|---|---|---|
| FALL AND WINTER DISCOUNTS: | Sept., 7 per cent. | Nov., 5 per cent. | Jan., 3 per cent |
| | Oct., 6 per cent. | Dec., 4 per cent. | Feb., 2 per cent. |
| | | | Mar., 1 per cent. |

Catalog free.

**W. T. FALCONER MFG. CO., Jamestown, N.Y.**

# Gleanings in Bee Culture

A MODERN APIARY IN HAITI.

*Published by The A. I. Root Company, Medina, Ohio, U. S. A.*

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

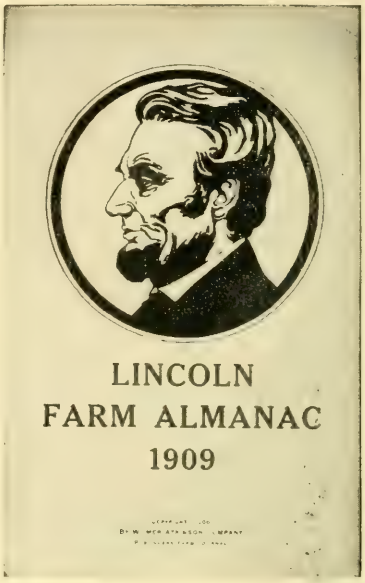
Vol. XXXVI November 15, 1908 No. 22

# A "Lincoln Farm Almanac" for 1909

| | |
|---|---|
| Gleanings in Bee Culture, one year. | $1.00 |
| Farm Journal, five years . . . | .75 |
| Lincoln Almanac . . . | |
| Total . . . . . | $1.75 |

**ALL OF THE ABOVE IF ORDERED OF GLEANINGS FOR ONLY**

# $1.50




*Cover of the Lincoln Farm Almanac*
*See the splendid head of Lincoln*

THE FARM JOURNAL has printed this year a splendid Almanac for 1909, which will be, because of special features, one of the most interesting ever issued.

On the 12th of February, 1909, is the hundredth anniversary of the birth of Abraham Lincoln; all sections, parties, and colors will unite to honor his memory. There will be impressive ceremonies at the birthplace of Lincoln in Kentucky, where President Roosevelt is expected to speak.

The Lincoln material in our Almanac consists of new and old stories and anecdotes of Lincoln, his boyhood on the farm, later life, some of his best stories, his own account of his life, famous sayings, his wonderful Gettysburg speech, a brief account of his death, and other matter. This is illustrated with original drawings done especially for this work.

Besides this, the Almanac contains a calendar for 1909, with records of important events, calculations of sun and moon for northern and southern latitudes, etc.

Twenty-four pages are devoted to matters of interest to all farmers, including a new and complete spraying-table for fruits and vegetables, a planting-table, cubic, square, and long measures, table of weights, rules for curing dried beef, Smithfield hams, and other meats, household recipes, directions for canning and preserving, how to have good roads, a complete list of Farmers' Bulletins published at Washington, list of Experiment Stations for all States.

The Almanac is well printed, and is bound in a specially designed cover in two colors, with a striking profile view of Lincoln's head, a small copy of which is shown at the top of this article. THE ALMANAC CONTAINS NO ADVERTISING MATTER except an announcement of the Biggle Farm Library on the inside of the last cover, and it must surely gratify and please.

We do not sell the Lincoln Farm Almanac on any terms. It is given, free, in connection with subscription offers only. It is sent in a special envelope, and safe delivery guaranteed.

**THE FARM JOURNAL.** The publishers of GLEANINGS have been acquainted with the *Farm Journal*, and we give it our unqualified endorsement. It is full of helpful money-making suggestions, and considering the low price at which we offer it (in connection with GLEANINGS it costs only 10 CENTS PER YEAR for a term of five years) no one can possibly regret the investment, especially when the new Lincoln Almanac is seen. Just think! Less than 1c per month for this invaluable farm paper. Send all orders to

**Gleanings in Bee Culture, Medina, Ohio.**

# C. H. W. WEBER

HEADQUARTERS FOR

# BEE SUPPLIES

DISTRIBUTOR OF

**ROOT'S GOODS EXCLUSIVELY**

**AT ROOT'S FACTORY PRICES**

NO CHARGE TO DEPOTS
FOR DRAYAGE.

## Don't Forget!

If you want EARLY-ORDER DISCOUNTS, to send us a list of your needs, and we will be pleased to quote you our lowest prices.

## HONEY WANTED.

Fancy white clover, EXTRACTED HONEY. State how it is put up, and price expected delivered in Cincinnati.

# C. H. W. WEBER

Office and Salesroom, 2146-2148 Central Ave.
Warehouse, Freeman and Central Avenue.

CINCINNATI, .. .. .. OHIO

## Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

NO. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

INDIANAPOLIS.—While prices are not high, the demand for honey has never been better—a fact that can be attributed to the quality of goods now on our market. This is a white-clover district, and our market is almost free from honey from other sources. Producers are offering fancy white comb at 12½; No. 1 white, 12; white clover, extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is not sufficient to establish a price. Beeswax is steady at 28 cts. cash, or 30 cts in exchange fot merchandise.

Nov. 3. WALTER S. POUDER, Indianapolis.

BOSTON.—White fancy comb honey, 15 to 16; No 1 ditto, 13 to 14; extracted white, 9 to 10; extracted amber, 7 to 8; amber in barrels, 6 to 7. Beeswax, 30. BLAKE-LEE CO.,

Nov 6. 4 Chatham Row, Boston, Mass.


# HONEY-JARS

from

## New York City

We consider the No. 25 jar with solid metal cap and waxed liner the best jar made for honey.

Gross crates . . . . $5.00; 5 gross, $4.75 per gross.
12-oz. screw-cap jar . . 4.50; 2 gross, 8.25 per gross.
1-lb. sq. jar with cork . 5.00;
Italian queen . . . . 1.00. Catalog free.

Apiaries, Glen Cove, L. I.

**I. J. STRINGHAM 105 Park Place, New York**

# FOR SALE!

## Carload California Comb Honey.

Carefully graded. Two-thirds white.

**A. L. KNISLEY, .. BISHOP, Inyo Co., CAL.**

## CHAS. ISRAEL & BROS.

486-490 CANAL ST., NEW YORK

WHOLESALE DEALERS AND COMMISSION MERCHANTS IN

**Honey, Beeswax, Maple Sugar and Syrup, etc**

Consignments Solicited. :: Established 1875.

# Honey Quick.

Must go by Nov. 15—100 cases white and light-amber comb honey. Fancy, $3.50 per case. No. 1, $3.25 per case. No. 2, $3.00 per case.

**GEO. H. REA, . REYNOLDSVILLE, PA., RT. 2.**

## Money-saving Bargains in Bee-keeping Supplies.

Small profit and quick sale is my aim. Lowest price at all times. Send list of goods wanted, for best price. Sections of the best Wisconsin basswood, second growth; hives of Michigan white pine, and they are dandies. All goods are first-class, and will please you. No orders too large, none too small. Catalog ready Jan. 1. Send for it.

**H. S. DUBY, . . . . . ST. ANNE, ILL.**

SAVE EXPRESS!
SAVE FREIGHT!
SAVE TIME!
by ordering your supplies in Boston

**H. H. JEPSON,**
**182 Friend St. Phone Haymarket 1489-1**


LIVERPOOL.—The honey market continues steady with a fair inquiry. Stocks are small. Chilian, 4⅓ to 6⅓; Peruvian, 3½ to 4⅓; California, 8½ to 10½; Jamaica, 4 to 5⅓; Haiti, 5⅓ to 7. Beeswax, small sales of Peruvian, firm market—African, 26 to 28; American, 30 to 33; West Indian, 29 to 32; Chilian, 30 to 36; Peruvian, 33; Jamaican, 34 to 35.

TAYLOR & CO.,
Oct. 19. 7 Tithebarn St.

ST. PAUL.—Receipts of honey are very light; demand moderate, and prices steady. The prices below represent those obtained for shipment in small lots: Fancy white-clover and basswood, new, 13 to 14; buckwheat, 10 to 12½; extracted in 60-lb. cans, 7 to 8.—*Board of Trade Bulletin*, Oct. 26.

# Extracted Honey Wanted

We are always in the market.

If you have any to sell, mail small average sample to

NATIONAL BISCUIT COMPANY

Purchasing Department,

Washington Blvd. & Morgan St.

CHICAGO, ILL.

If your honey crop is short, and you need something fine to supply your customers, write to us, for we have it.

FINEST Water-white Mountain-sage Honey (extracted).

BEST White-clover Honey (extracted).

WATER-WHITE Sweet-clover Honey (extracted).

All in crates of two 60-lb. cans each
Also FANCY COMB HONEY.

WRITE US FOR PRICES

THE FRED W. MUTH CO.

The Busy Bee-Men

51 Walnut Street Cincinnati, Ohio

# 5% DISCOUNT

FOR NOVEMBER ORDERS

Four per cent on December orders. Why not take advantage of this and have your goods all ready for the honey harvest?

**White-clover Extracted Honey and Beeswax Wanted**

in exchange for supplies. Write for our catalog. It is free.

GRIGGS BROS. & NICHOLS CO.,

523 Monroe St. . . . TOLEDO, OHIO

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

HILDRETH & SEGELKEN,

265-267 Greenwich St. 82-86 Murray St.

NEW YORK.

Established since 1876

For 30 years we have been recognized headquarters for

**Comb and Extracted HONEY**

and you can readily see where it is to your advantage to consign your honey to us if you want to realize top prices for your product. Liberal cash advances made on arrival of honey.

References, First National Bank, Chicago.

S. T. FISH & CO.

189 South Water St. CHICAGO, ILL.

# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by THE A. I. ROOT CO., Medina, Ohio.
J. T CALVERT, Business Manager.

$1 per year. When paid in advance: 2 years, $1.50. 3 years, $2.00. 5 years, $3.00.


POSTAGE IS PREPAID by the publishers for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, and Mexico. Canadian postage is 30c per year. For all other countries in the Postal Union add 60 cents per year postage.

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DISCONTINUANCES. We give notice just before expiration and further notice if the first is not heeded, before discontinuing. Subscribers are urged to renew promptly in order to avoid interruption in receipt of GLEANINGS, or if unable to make payment at once, to advise us when they can do so, which will be considered as an order to continue. Any one wishing his subscription discontinued should so advise us upon receipt of expiration notice and he will not be annoyed by further notices.

HOW TO REMIT. Remittances should be sent by Draft on New York, Express-order or Money-order, payable to order of The A. I. Root Company, Medina, Ohio. Currency should be sent by Registered Letter.

AGENTS. Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

## Foreign Subscription Agents.

Foreign subscribers can save time and annoyance by placing their orders for GLEANINGS with any of the following authorized agents, at the prices shown:

PARIS, FRANCE. E. BONDONNEAU, 142 Faubourg St. Denis. *Per year, postpaid, 7½ fr.*

GOODNA, QUEENSLAND. H. L. JONES. Any Australian subscriber can order of Mr. Jones. *Per year, postpaid, 6/.*

DUNEDIN, NEW ZEALAND. ALLIANCE BOX CO., 24 Castle St. *Per year, postpaid, 6/.*

## Advertising Rates.

Twenty-five cents per agate line, flat.
Fourteen lines to inch.

SPACE RATES. To be used in one issue.

| | |
|---|---|
| One-fourth page | $12.50 |
| One-half page | 25.00 |
| One page | 50.00 |

Preferred position, inside pages, 30 per cent additional.
Preferred position, inside cover, 50 per cent additional
Outside cover page, double price.
Reading notices, 50 per cent additional.
Cash-in-advance discount, 5 per cent.
Cash discount if paid in 10 days, 2 per cent.
Bills payable monthly.
No medical or objectionable advertising accepted.
Column width, 2⅝ inches.
Column length, 8 inches.
Columns to page, 2. (Regular magazine page.)
Forms close 10th and 25th.

Address GLEANINGS IN BEE CULTURE,
Advertising Department, Medina, Ohio.


# Four Leading Magazines 1 Year for $1.50

An extraordinary offer of special interest to every reader.

Whether you are a bee keeper or not, this offer will interest YOU.

CAN YOU IMAGINE A MORE INTERESTING HOME QUARTETTE?

Our Special Price **$1.50**

Four great journals for **ONE-FIFTY.** Here they are:

| | Regular Price |
|---|---|
| PICTORIAL REVIEW (monthly) one year, | $1.00 |
| MODERN PRISCILLA (monthly) one year | .50 |
| LADIES' WORLD (monthly) one year . . | .50 |
| CLEANINGS IN BEE CULTURE, 1 Yr., 24 issues, | 1.00 |
| | $3.00 |

WE WILL SEND THE ABOVE QUARTETTE FOR **$1.50.**

**PICTORIAL REVIEW.** A monthly beautifully illustrated. A few of the many departments and features: Home Care for Common Ills; Marketing for the Month; Kitchen Step-savers; Labor-saving Suggestions; House-building Plans; Millinery Lessons; Flower Gardens. Special Articles: Newest Fashions; Styles for Children; Home Dressmaking Lessons; Recipes; Home Furnishing; Entertaining and Etiquette; How to Earn Money at Home, etc.

**LADIES' WORLD.** A monthly; an ideal publication for women and the home. A thoroughly practical household magazine, and treats of every subject of interest to women. Clean and wholesome, elevating in tone and entirely free from sensationalism. An up-to-date dressmaking and pattern department.

**MODERN PRISCILLA.** A monthly devoted to all kinds of needlework. Recognized as the leading fancy-work magazine of America, the authority on all kinds of embroidery, knitting, crochet, lace, costumes, lingerie, and home decoration. Gives practical patterns and instructions in all kinds of needlework.

**CLEANINGS IN BEE CULTURE.** A semi-monthly. The leading bee-magazine of the world. A glance at its pages will convince any bee-keeper that it is a magazine he can not afford to be without. The information it gives on all questions relating to the subject are invaluable to the bee-keeper, whether he has one colony or hundreds, and even if you are not a bee-keeper you will enjoy reading the paper. Interesting home and garden departments.

No substitutions of other publications can be made in this offer. Present subscribers to this paper can have GLEANINGS sent to some bee-keeping friend, and the other three papers to their address.

**THE A. I. ROOT COMPANY, : : : MEDINA, OHIO**

# SEND TEN CENTS

For three late but different issues of the *Bee-keeper's Review*, and with them will be sent a four-page circular containing some clubbing and premium offers that will surprise you. The ten cents may apply on the first order sent in. **W. Z. HUTCHINSON, Flint, Mich.**

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# PATENTS.

**Twenty-five Years' Practice.**

## CHARLES J. WILLIAMSON,

**Second Nat'l Bank Bldg., Washington, D. C.**

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

## BIG DISCOUNT

on all bee-supplies until May 1. Send for 1909 prices.
**W. D. SOPER COMPANY, JACKSON, MICHIGAN.**

## 25 PER CENT REDUCTION.

Here is your chance to save money and get a lot of the best queens cheap.

Introduce LAWS queens this fall and thus insure a full crop of honey the coming season.

LAWS queens are sent everywhere, and everywhere there are words of praise for them.

One firm alone has bought over three thousand of the Laws queens during the past six seasons.

Deduct 25 per cent from the following prices; remit the balance, and your order will have prompt attenion.

Single queen, $1.00; six for $5.00; dozen for $10.00.

**W H. LAWS, Beeville, Bee Co., Texas**

# MONEY WILL STRETCH

At least it will go further if spent in the right place FIFTY PER CENT SAVED BY OUR BIG OFFERS. We can stretch your money and save you a full 50 per cent. LOOK! Here are the most remarkable bargains in Magazine Clubs ever offered.

## Special Offers

| Regular price per year | | Our Price |
|---|---|---|
| Cosmopolitan | $1.50 | $1.50 |
| Pearson's | 1.50 | |
| Total | $3.00 | |

| | | Our Price |
|---|---|---|
| Cosmopolitan | $1.00 | $1.25 |
| Designer | .50 | |
| Total | $1.50 | |

| | | Our Price |
|---|---|---|
| Pearson's | $1.50 | $1.50 |
| Paris Modes | .50 | |
| Woman's Nat'l Daily | 1.00 | |
| Total | $3.00 | |

**Metropolitan, Sunset, or Bohemian can be substituted for Pearson's in this club.**

| | | Our Price |
|---|---|---|
| Woman's Nat'l Daily | $1.00 | $1.00 |
| Paris Modes | .50 | |
| Nat'l Home Journal | .50 | |
| Total | $2.00 | |

| | | Our Price |
|---|---|---|
| Outing | $3.00 | $2.25 |
| Sunset | 1.50 | |
| Total | $4.50 | |

| | | Our Price |
|---|---|---|
| Pearson's | $1.50 | $3.00 |
| Metropolitan | 1.50 | |
| Sunset | 1.50 | |
| Bohemian | 1.50 | |
| Total | $6.00 | |

**Outing or Smart Set can be included in any of above clubs at $1.50. Any two $1.50 magazines in above clubs will be sent to one or different addresses for only $1.50.**

## Big Bargain Clubs

| Regular price per year | | Our Price |
|---|---|---|
| Smart Set | $3.00 | $2.75 |
| Pearson's | 1.50 | |
| Woman's Nat'l Daily | 1.00 | |
| Total | $5.50 | |

| | | Our Price |
|---|---|---|
| World's Work | $1.50 | $2.50 |
| McClure's | 1.50 | |
| Woman's Home Com. | 1.00 | |
| Total | $4.00 | |

| | | Our Price |
|---|---|---|
| Cosmopolitan | $1.00 | $3.00 |
| Review of Reviews | 3.00 | |
| The World Today | 1.50 | |
| Total | $5.00 | |

| | | Our Price |
|---|---|---|
| Everybody's | $1.50 | $2.00 |
| Delineator | 1.00 | |
| Total | $2.50 | |

| | | Our Price |
|---|---|---|
| American Magazine | $1.00 | $1.65 |
| Cosmopolitan | 1.00 | |
| Total | $2.00 | |

| | | Our Price |
|---|---|---|
| Outing | $3.00 | $2.00 |
| Success | 1.00 | |
| Total | $4.00 | |

| | | Our Price |
|---|---|---|
| Nat'l Home Journal | $ .50 | 50c. |
| Paris Modes | .50 | |
| Total | $1.00 | |

**Paris Modes . . 50c**
**Nat'l Home Journal 50c**
**and your choice of Pearson's, Metropolitan, Bohemian, or Sunset, to one or more addresses for one year for only $1.50.**

## Big Bargain Prices

**on Single Yearly Subscriptions**

| | Regular Price | Our Price |
|---|---|---|
| Outing | $3.00 | $1.50 |
| Bohemian | 1.50 | .75 |
| Pearson's | 1.50 | .75 |
| Smart Set | 3.00 | 2.50 |
| Paris Modes | .50 | .25 |
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# GLEANINGS IN BEE CULTURE

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BEE-KEEPING FOR SEDENTARY FOLK.

This refers to a new booklet just off our own press, written by a Presbyterian divine, the Rev. T. Chalmers Potter, of Glasgow, Del. It is dedicated to professional people—the clergyman, the lawyer, the doctor, the teacher, and all others whose duties in life render it necessary for them to be mostly indoors, but who feel the need of some suitable recreation in the open air which will be at once conducive to health and remunerative to the worker. The article originally appeared in the *Interior*, one of the leading organs of the Presbyterian Church in America. It presents the case for bee-keeping as a hobby in a very pleasing manner, showing what can be done to make it both pleasant and profitable. Of course, this will not interest any who are already well established in bee-keeping; but to the beginners, or those who have no bees, we believe it will prove thrice interesting. If you have a friend you would like to see take up bee-keeping, please write for a free copy. Beginners are particularly requested to send for a copy at once before the supply is exhausted. Those who have never had bees will find it very useful in blazing the way for a successful career in bee culture. It is free.

FURS FOR ALL.

One of the most interesting advertisers in these pages to the average rural dweller is the National Fur and Tanning Company. They make all kinds of garments, robes, etc., from skins and pelts furnished by their customers. This makes it possible for many to possess nice warm fur clothing who would not otherwise have it. It is easy for most country residents to obtain skins and pelts; but usually they have had to be content with what dealers saw fit to pay for them. They can obtain much better results by sending them to the above firm to be made into nice garments for their own use. This looks better to us than to sell the skins at low prices. If you go to buy furs you will find they cost lots of money; in fact, the prices are prohibitive in many cases. Write to the National Fur and Tanning Company.

SYSTEM.

It is not often that we get a 9059 word-book free. But this is just what *System* in another column offers us, and we believe the offer is *bona fide*. It is no useless book, either, nor a mere catalog. It is valuable to many, especially those wanting a business career, and is crammed with interesting facts. It is well worth sending for. Write to System, Dept. 9—12, 151, 153 Wabash Ave., Chicago, Ill.

AERMOTORS.

It is hardly necessary for us to introduce to our readers the celebrated Aermotor Co., of Chicago. Their "aermotors," or windmills, are in use, not only all over the United States, but all over the earth. In some parts of the world windmills have come to be known as *aermotors*, simply because the latter were very numerous, and so much superior to all rivals, that the name had to be changed to suit the case. Wind is a very cheap motive power; and where one has an aermotor it can be made to do a great deal of hard work now done by human exertion. The aermotor is not only effective, but, in addition, costs but little to erect. Send for a catalog. At present they are making a special drive on a gasoline engine for pumping purposes. The price is very low.


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**HOW I DO IT.**

I publish **The Home Instructor,** an illustrated woman's magazine and I want your name on my subscription list. **The Home Instructor** is bright, entertaining, clean and instructive—just the sort of a paper you should have in your home It has departments for every feature of home life, and prints the choicest fiction every month. Every issue has several pages devoted to the latest fashions, fully illustrated.

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**CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLD'G. CLEVELAND, OHIO.**

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BULLDOG SUSPENDERS FOR CHRISTMAS.

Most American men are well acquainted with the merits of the famous Bulldog suspenders. For those who are on the lookout for Christmas presents for their men friends, we believe the advertisement of Hewes & Potter, who make these suspenders, will prove extremely interesting just at this time. There are many readers of this journal who will take their offer of a "Bulldog" comb and case for a dime, accompanied by a copy of "Style; or, How to Dress Correctly." Their address is Hewes & Potter, Dept. 3298, 87 Lincoln St., Boston.

CHRISTMAS BOX OF FRUIT.

One of the best possible Christmas presents is a box of California dried and canned fruits as put up by our advertisers, the California Fruit Products Co. They arrange these boxes in various combinations to suit the purse. This will make an excellent present, rather out of the ordinary, and yet very useful in almost any household. It should be noted that the freight is prepaid is all cases, so there is no trouble to be anticipated on that score. Many of our readers are so situated that they have some difficulty in getting such an assortment of fruit at a reasonable price in their own neighborhood. It will be easier for many simply to order from California direct.

IRRIGATED LAND ON EASY TERMS.

Any one on the outlook for a place to make a home can not do better than carefully study the advertisement of the Burlington Railway, in another column. There are no more desirable lands on earth than these irrigated tracts in the Northwest. Crops are absolutely certain. Not only so, but every thing raised is of fine quality, and the crops are large. Furthermore, the prices obtained are excellent on account of the large number of miners, who earn good pay. The climate is salubrious and pleasant. A farmer can hardly expect ever to find any thing better in his line. These western places have very good school facilities — usually better than eastern places with a larger population. Churches are numerous wherever there is a settlement of people, and all up-to-date improvements are adopted. If you want land we earnestly advise a trip to look over the situation for yourself. Mr. Clem Deaver is a well-posted land man employed by the Burlington to see that settlers get the right place, where they will succeed beyond a doubt.

OUR CHRISTMAS ISSUE.

As is our usual practice now, we will issue a special Christmas issue of GLEANINGS. Of course, our whole staff of contributors will be represented on its pages, and all possible care will be used in selecting matter suitable for the bee-keeping fraternity. We expect to make our Christmas issue our best for the whole year, and for this purpose we shall use quite freely the best illustrations we can secure. Of course, our regular readers know we charge no more for our Christmas number than for any other. We intend to print a far larger edition to allow for a much greater demand than ordinary and have enough to go around. The cost is necessarily far greater than for an ordinary issue, and we hope our readers will appreciate our earnest efforts to provide an extra-large intellectual bill of fare. They can, if they choose, do much to help us make it a financial success by showing the Christmas number to any and all bee-keepers who do not now subscribe to GLEANINGS. They can do a great service in this way; and any thing done for us in this manner will be highly esteemed as a favor. We believe there are a large number of bee-keepers not now subscribers to GLEANINGS who ought to be. In fact, many bee-keepers are losing money and pleasure by not sending in their subscription. We should like to get in touch with these backward bee-keepers; and this extra-fine number will give us the opportunity to appeal with force to them. Should you not care to lend your own copy of the Christmas number we will gladly send a sample copy wherever requested. Just send the name and address of your friend and we will attend to the rest. A little later you can ask him how he enjoys reading GLEANINGS, and if he would like to join you as a subscriber. Most of our old subscribers have done this in the past, and we greatly appreciate their efforts to help us build up a great bee-journal. Without their assistance we should certainly have failed. Having helped us once we think they will help us again. In any event, we take this opportunity to thank all who have rendered us assistance in the past, and also those who will help us now. We can not get a great circulation without the cordial co-operation of our present subscribers, hence this appeal to their good nature. With a larger field we can afford to make further improvements on this journal, and make every number equal to the Christmas issue. While we are animated by selfish motives in thus desiring to build up our circulation, it will be observed that, the larger our subscription-list is, the better journal we can turn out.

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| Gleanings in Bee Culture, Ladies' World, and Modern Priscilla or Paris Modes | **1.80** |
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| Gleanings in Bee Culture, McClure's, Modern Priscilla, and Designer | **2.65** |
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**DAN-ZE HIVES** with metal **Propolis-proof Guards.**
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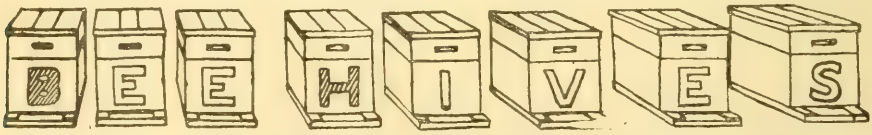


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**ESTABLISHED 1884**

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**JOHN NEBEL & SON SUPPLY COMPANY**

**MONTGOMERY COUNTY .. .. .. HIGH HILL, MO.**

## "Practice Makes Perfect."

A little girl sat on her father's lap, looking into the mirror, and inquired if God made both her father and herself. Being assured that he did she remarked that he was doing better work than he ever did before.

It is simply the old adage over again, and it is true of *The A. I. Root Co.'s* Bee-keeping Supplies; and while perfection can never be attained they are as near perfection as improved machinery and years of practice can well make them. If you have never seen them, or if you have, and have not a catalog, send at once for my 40-page catalog, illustrated profusely, and giving prices of every thing used in the apiary. *It is free for the asking.* Special price list of shipping-cases, and all kinds of honey-packages—wood, tin, and glass. Send a list of what you will need at any time and let us tell you what they will cost you delivered at your station.

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**George E. Hilton**
**Fremont, . . Michigan**

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.. will ..

**SAVE TIME AND FREIGHT**

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**Honey-extractors,**

**and all other seasonable goods now on hand.**

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Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

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**565-7.W.7th St., Des Moines, Ia.**

## 5%

Cash Discount for November orders for "Root Quality' Bee-supplies for next season's use.

Beeswax wanted for cash or exchange

**M. H. Hunt & Son**
**Lansing, Mich.**

**"If goods are wanted quick, send to Pouder."**
**Established 1889**

# MAKING A NOISE LIKE AN ORDER

*By the Bee Crank*

It is a pretty well-known fact that, if bees hear at all, they hear only loud noises that are produced at a very short distance. It is said that a heavy cannonading of a French battery, which went into action close to a group of beehives, during the Franco-Prussian war, did not in the least disturb the workers.

However, a noise like an order has such a peculiar penetrating quality that I am able to hear it for a long distance; in fact, at this season of the year, when things are normally quiet, I am concentrating my attention so closely that there is not the slightest danger of any thing that sounds like an order escaping me, and I am even allowing five per cent on all cash orders for supplies received this month—November.

This is not because my stock of goods is in any way less fresh or less desirable than it always is. It is because it is a great advantage to me to have my patrons anticipate their wants instead of holding off till the last minute, as they are prone to do.

HONEY.—Write for my quotations. I carry a large stock of finest honey, and can help you piece out any deficiencies in your own stock. Many beekeepers with small apiaries find that they can sell more honey than they produce. It is a good plan to supply your home trade, and not educate the people to go elsewhere.

BEESWAX.—I pay 28 cts. cash or 30 cts. in trade, delivered here. Send what you have, by freight or express, according to size of package.

Root goods at Root prices. A full stock of standard goods on hand at all times, and special discounts for November. Catalog free.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

H. H. ROOT, Assistant Editor.
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## STRAY STRAWS

DR. C. C. MILLER

HERR SCHROEDER and his wife, of Trieste, Austria, made a flying visit to Marengo, leaving a streak of sunshine behind them.

STUDENTS of French who are bee-keepers would do well to get Dadant's Langstroth in French, "L'Abeille et la Ruche," as a reader. It's fine.

AN AGRICULTURAL JOURNAL says: "Spring is the best time in the year to move bees." It may be; but if a bee settles on your neck, or any other portion of your anatomy, in the fall, don't wait until the spring to remove it.—*Norristown Herald.*

AS POSTSCRIPT to the last item on page 1304, let me add that you may sometimes if not often find a case where the bees stop rearing brood, although the queen has not yet stopped laying. You will find eggs and sealed brood, but no unsealed brood. [We accept the amendment.—ED.]

QUINBY said that a colony which had stored in supers might be expected to have plenty of stores for winter. That was true when he said it, for it was before the days of extracted honey. This year I think each of my colonies that stored in sections is well supplied for winter; but a few colonies that had stored in drawn combs were not more than half supplied.

ALSIKE is getting to be quite an item here. On the first crop I saw scarcely a bee. Was there a lack of nêctar in it, or was it only because there was such an enormous amount of that and white clover? Bees were plentiful on the second crop of alsike, and so they were on red clover. [In our locality the first crop gave a large amount of nectar. We should conclude that weather conditions about Marengo were not favorable, or alske would have yielded on its first crop as it did with us.—ED.]

SUPPOSE one strain of queens lives twice as long as another; don't you believe one set of workers would live longer than the other? You can not easily keep track of the age of workers; but you can of queens. [We do not know whether we believe that a long-lived queen means long-lived workers; but this is true: A queen vigorous enough to live five years may transmit that same vigor or longevity to her workers; but the life of the worker is dependent on its wings to resist wear and tear; and it is dependent somewhat on the kind of flora it has to work on. A queen might have great power of egg-laying year after year, but breed bees with wings that would not stand very much strain or wear and tear in a growth of heavy underbrush.—ED.]

OLIVER typewriters, advertised in GLEANINGS, have at least the advantage of a good "locality," for they're made in this county. At Sunday-school conventions I've met some nice men who were connected with the factory. [It has been said there are as many Oliver typewriters in use as of all other kinds together. At all events, all of the typewriter work in the main office and branch offices of The A. I. Root Co. is done on the Oliver machine. It is one of the strongest typewriters ever made. It is practically impossible to get it out of alignment; and while we have no financial interest in it, it is a pleasure to testify to its many sterling merits.—ED.]

"WHY CAN NOT the bees introduce the formic acid in some other way than with their stings?" is a question propounded to me, p. 1303. I reply that most certainly they can; and just as certainly I think they do. Now, Mr. Editor, I've answered your question; please answer mine. I asked, "Does any intelligent bee-keeper nowadays believe that the acid is added 'just previous to capping the cell?'" That's what's supposed to be done according to the bulletin. I've no recollection of seeing it ever stated that the poison was introduced "just previous to capping" except by the sting; so I don't see what was in mind if not the sting-trowel theory. However, let us throw out that theory entirely. What ground is there for supposing that formic acid is introduced by the bee *just previous to capping the cell?* Don't you believe there's formic acid there before the cell is half filled? [You are asking something about which we know nothing; but we do not see any reason why the bee could not inject formic acid from its mouth parts into the cell just previous to the capping. You seem to think that the writer of the bulletin above mentioned had in mind the sting-trowel theory. He may have had, but we doubt it.—ED.]

SUMMER of 1908 I had 18 colonies that gave 200 sections or more each. Of these,

3 with 1905 queens averaged 217 sections each.
3 with 1906 queens averaged 233 sections each.
12 with 1907 queens averaged 223 sections each.

I am inclined to believe that, with a good strain of bees, a queen's second year will in general be her best.

My 4 queens that stood at the head of the list were as follows:

A 1906 queen with 276 sections;
a 1907 queen with 266 sections;
a 1907 queen with 252 sections;
a 1905 queen with 244 sections.

The 1906 queen had at one time an egg in one queen-cell, and at another time a grub in one queen-cell. I don't know whether a swarm would

have issued if these had not been destroyed. Both 1907 queens would have swarmed if they had been let alone. Strange to say, the 1905 queen showed the least inclination to swarm of the lot. Just once an egg was found in one queen-cell. [Then you believe in the general principle of killing queens every two years, notwithstanding your "exceptions that prove the rule."—ED.]

C. P. DADANT reports a visit to the wizard, Burbank, *American Bee Journal*, 300, and while there saw a patch of sweet clover on which Burbank was experimenting with a view to eliminate the bitter taste, expecting to improve the forage value of the plant. To secure red clover available for the use of our hive-bees, he advises careful watching and saving of seed from heads on which bees have actually been seen to remain long enough to gather nectar. Watch thus season after season, successively sowing seed thus saved, and "whenever blossoms are found upon which bees succeed in harvesting nectar *during the first bloom*, the problem will be practically solved."

With apologies to Mr. Burbank for the suggestion, I would suggest a way that might hasten the last part of the process on a large scale. Indeed, it might do to start with this plan, and any farmer could follow it up without watching the bees. Harvest the *first* crop when any chance seed-bearing heads are near maturity, but before the plant is spoiled for hay, and in some way secure what little seed matures. Bumble-bees being scarce during first bloom, the presumption would be that at least part of the fertilizing was done by hive-bees, consequently the corollas would be short. Seed thus saved should give a crop that would show a marked increase in the amount of seed secured, and successive sowings should in a very few years give a distinct strain of plants with short corollas. The question arises whether such a strain, aside from its value to the bees, might not be desirable from the view-point of a first-crop seeder. [If there is any man who can solve this problem it is Burbank. His advice is good. But we may suggest that this is a matter that only a keen enthusiast like Burbank can work out; and if this person be given a backing of government or State funds, all the better. Possibly our experiment station will take this thing up later. We know that something can be done in the way of lengthening the tongues of bees, for something *has* been done; but, owing to our inability to control mating, Nature has a tendency to revert back to the old length, the standard tongue-length, or rather, we should say, the standard tongue-*reach*, which is about $\frac{17}{100}$ of an inch. We succeeded in developing a tongue-reach of about $\frac{23}{100}$; but we could not increase this length nor hold what we had already gained, because we could not inbreed—that is, mate a long-tongued *queen* with a long-tongued *drone*. If we could control mating (and we shall be able to do it some day), and if somebody else will reduce the length of the red-clover corolla tubes (and we believe it will be accomplished some day), we shall make available thousands of tons of nectar that are now being wasted. Any one knows, who has ever pulled out the corolla tubes of a head of red clover at the proper season, that a large amount of nectar is stored in each one of those tubes. The honey is of good quality; and, while not quite equal to that from white clover, it would make a first-class table honey.

We desire to lay this general problem before Dr. E F. Phillips, of the Bureau of Entomology, Washington, D. C. He already has his hands full of other important work; but we suggest that he put it on the docket for development at some time in the future.—ED.]

# EDITORIAL

By E. R. ROOT.

### CAUTION ABOUT SENDING SAMPLES OF HONEY THROUGH THE MAILS.

WE receive a great many samples of extracted honey through the mails from bee-keepers, and it frequently happens that some of these are in bad condition owing to improper packing. Persons sending honey or other liquids through the mails should be careful to use a package that will conform to the postal regulations; for it would be a calamity to bee-keepers if honey were barred from the mails on account of leaky packages damaging other mail-matter. We copy the following from the United States Official Postal Guide for July, 1908, article (2), (*a*) (*b*), page 124:

(2) Articles of glass, liquids, oils, fatty substances, dry powders as well as live bees, are admitted to the mails as "samples" provided they are packed in the following manner:

(*a*) Articles of glass must be packed solidly in boxes of metal or wood in a way to prevent all damage to other articles or the employees.

(*b*) Liquids, oils, and substances easily liquefiable, must be inclosed in glass bottles hermetically sealed. Each bottle must be placed in a wooden box filled with spongy material sufficient to absorb the liquid in case the bottle should be broken. Finally, the box itself must be inclosed in a case of metal or wood with a screw top, or of strong and thick leather. If wooden blocks perforated to contain several vials or wooden mailing-cases are used, measuring at least one-tenth of an inch in the thinnest part, lined with sufficient absorbing material, and furnished with a lid, the box need not be inclosed in a second case.

In addition to the above we would add: Be sure to write your name and address plainly on the package, so that we may have no trouble in identifying your sample. We receive many samples with no name or address, and hence it is impossible for us to tell who sent the sample.

### DOOLITTLE BOOK JUST FROM THE PRESS; HOW TO CONTROL SWARMING.

WE have had quite a call for the publication in book form of Doolittle's series of articles which we published, entitled "A Year's Work in an Out-apiary." This has now been issued from the press; and in order that all of our new readers, as well as some of the older ones who desire to refresh their memories, may have a copy, we are offering it at a very low price in combination with GLEANINGS; but the reader, in order to avail himself of this price, must renew before his subscription expires. During the long winter evenings this book will furnish interesting and profitable reading. It deals particularly with the problem of control of swarming when running for comb honey. Our edition is limited, and those who desire to secure a copy of this work before

the edition is exhausted will do well to put in their order at once. For particulars see p. 1401.

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WILL THERE BE A FAILURE OF CLOVER NEXT SEASON BY REASON OF THE DROUTH?

THE editor of the *Review* seems to feel that the long drouth of the present fall has so far killed out the clovers that next year will not be very much of a honey year; that those who have fine crops of clover honey had better not sell at a sacrifice, for he thinks there is certain to be a good demand at good prices for the best quality next year.

Our brother-editor may be correct in his prognostications; but the other day we were talking with a hard-headed old farmer, and one who is a bee-keeper as well, about this very question whether the drouth of this fall had been the means of retarding the growth of clovers or killing them. Said he, "Mr. Root, you need not worry about the drouth. It will not have very much effect on the clovers. You will find," he continued, "if we get a fair amount of snow and a sufficient fall of rain next spring, the clovers—white, alsike, and red—will be very much in evidence. This has been a great year for alsike and white clover. There is a great deal of seed in the ground, even if the clovers were killed root and branch. But the clovers will stand more drouth than you think. No, sir; don't you worry about this drouth, Mr. Root. The clovers will take care of themselves."

We are giving his opinion for what it is worth. We made a little trip over some of the country roundabout, and were surprised to find that, while the grasses and weeds seemed to be dried down, root and branch, the sprigs of white and alsike clover looked green and fresh everywhere, apparently verifying the statement of our farmer friend.

We should be pleased to get expressions from our readers on this matter, as to whether drouth does affect clover. This is a *very* important question. *If* the clover are not killed out, as our friend Hutchinson fears, then it might be folly to hold our extracted honey over; but *if*, on the other hand, the general testimony is to the effect that the dry weather has done serious damage to the plants, then we ought to know the fact, and that, too, right speedily. An exact knowledge of the situation will have a tremendous bearing on the honey market. While one can not afford to carry over *comb* honey, on account of its tendency to candy before it can be sold next season, yet one might well consider whether or not he should sell his choice extracted at any price he can get before the season closes.

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THE FATE OF THE RASPBERRY PASTURES IN THE FIRE-STRICKEN DISTRICTS OF NORTHERN MICHIGAN; THE HEROIC FIGHT OF THE HUTCHINSON BROTHERS.

IN the last *Bee-keepers' Review* appears an article by the editor, W. Z. Hutchinson, telling some of their terrible experiences in fighting fire in Northern Michigan; of how Elmer, by dint of almost superhuman effort, time and time again was just barely able to save their property. Our readers perhaps know that Mr. Hutchinson and his brother Elmer have a series of outyards in the berry districts of Northern Michigan, where fires have been making such fearful havoc in destroying life and property. While they managed to save their bees, their buildings, and their crops of honey secured during the past summer, yet they have lost their pasturage. The ground where the wild raspberry grew so luxuriantly has burned over once, twice, and even three times in some districts. The long drouth which preceded, and the sandy soil where the berries flourish, put the ground in such shape that it is doubtful whether the roots were protected to an extent that a new growth will spring up again in a year or so hence.

Mr. Hutchinson and his brother are thankful that they saved their bees and their crops of honey; but, as W. Z. remarked, they could have far better afforded to lose *all their bees* than to have the pasturage burned. The latter they can not replace; but the former they could have replaced by buying more.

The outlook is certainly discouraging. Mr. Hutchinson and his brother have gone to the expense of locating outyards, and building honey-houses and bee-cellars. It is reasonably certain that this investment in buildings will not be worth much for the next few years; and they will doubtless be compelled to move their bees at considerable expense to an entirely new pasture, put up new buildings, and construct new cellars. In the mean time, the capital in old buildings and bee-cellars will be tied up.

But the Messrs. Hutchinson were more fortunate than some others, who lost not only their pasturage but their buildings, their bees, and all. In some cases even their homes have gone up in smoke. GLEANINGS offers its sincere sympathy to those who have suffered loss by reason of this very destructive agent whose ravages could not be foreseen, but which, fortunately, does not visit this northern country very often.

THE EFFECT OF THESE FOREST FIRES ON HIVE LUMBER.

These forest fires that are and have been destroying millions of property all over the United States were unknown before the advent of man in that virgin country. The Indian, amenable neither to law nor any thing else, and the game-hunter, and the prodigal lumber-man who leaves brush in his wake, are responsible for this terrible destruction of property. It does seem as if something should be done. It will mean, of course, that in the near future the price of lumber will go soaring again, especially white-pine or hive lumber, for that is the timber that seems to suffer more than any other by forest fires.

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TARIFF ON BEESWAX AND AN ADVANCE ON THE TARIFF RATE ON HONEY.

A RESOLUTION was passed at the last National convention at Detroit, recommending an advance on the present tariff rate on honey and a tariff on beeswax. It has been said that foreign honeys are scattering foul brood in the United States, and that there should be a sufficient tariff to prevent its importation into this country — not so much to cut off competition with domestic honey as to stop the spread of European and American foul brood just now gaining rapid headway in the United States. It is claimed that this imported honey, much of it coming from ignorant

natives of foreign countries where disease is rampant and unchecked, is now scattering disease in new territory in the United States. A tariff on wax is recommended because much of the imported article is rendered in solar wax-extractors at a comparatively low temperature, or not sufficiently high to kill the germs of disease.

It is further argued that a high price on domestic wax would redound greatly to the benefit of the producer of extracted honey, and would not affect the producer of honey in sections, because the enhanced price of the wax and dark or ill-flavored honeys would more than pay for the extra cost of his foundation.

There are a good many angles to this proposition, and GLEANINGS does not propose to take any sides; but we do say something should be done to prevent the spread of disease in this country; for foul brood and black brood — especially the latter — are spreading over this country at an alarming rate, invading sections where these diseases were never known to exist before. The old-fashioned (or American) foul brood is easily held in check by an intelligent bee-keeper; but the black (or European) foul brood is an entirely different disease. It spreads more rapidly, and seems to resist in some cases the most intelligent methods of cure. It has come very near ruining some bee-keepers, and has put others out of business.

With the advance in the price of wax, which would be inevitable if a tariff were placed on it, it would mean that the bee-keeper would have to pay correspondingly more for his foundation; but he would get more for his wax. It is argued, therefore, that one will offset the other. It has also been suggested that, with the higher price on wax, one might be able to produce it in some of the Southern States at a profit for wax only. However this may be, we can not say.

This is a legitimate subject for discussion, and our columns are open for it; but we must respectfully decline to publish any thing of a partisan or political nature involving the whole question of free trade and protection as it applies to general articles manufactured and consumed in this country. The discussion must be confined strictly to wax and honey, and, what is more, must be free from any partisan bias.

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### SHOULD A BEE-KEEPER MELT UP HIS OLD COMBS? HOW FOUL BROOD, IF PRESENT, MAY BE ENTIRELY ERADICATED BY THE PRACTICE.

DR. MILLER presents the following Straw in his regular department; but as it required a more extended reply than the limits of the space in that department would allow, we insert it here.

"It would pay any bee-keeper to melt up his combs every four or five years, and fill the frames with new sheets of wired foundation," page 1306. I wonder how many in this country believe that. I wouldn't exchange five-year-old combs for frames of foundation if you would do all the work of melting up, give me back the wax, and charge me nothing for frames of foundation. In other words, I agree with the large number who value old combs more than new.

You are speaking, doctor, from the standpoint of the comb-honey producer, and in a locality where there is no foul brood and never has been. But there are some producers of extracted honey who are beginning to question whether or not the honey from these old dark combs is of as good a flavor and color as that from newer and lighter combs. On the other hand, it may be said there are some of this class of producers who prefer old combs because they are stronger — that is to say, they will stand a higher centrifugal force in the extractor; but if they be well wired they will stand almost any kind of intelligent extracting, even if they are not old.

But some bee-keepers are learning, to their sorrow, that *foul brood once in a locality* has a tendency to break out every now and then. They are able to keep it in control but not to prevent it appearing here and there in stray colonies. And why? Because the disease-germs lurk in these old combs; and under the right conditions foul brood will be developed from them, even years afterward.

Some have about come to the conclusion that the only way to keep the disease out of their yards is to melt up their old combs every four or five years; and if one will keep an exact account of his figures he will be surprised to see that there is no great loss in the operation, providing such combs, when emptied of honey, are stowed away to be melted up at the most convenient season of the year. Some figures bearing on this point will be introduced at a later time; and in the mean time the reader is urged not to pass judgment until these figures are produced.

For some years back we have been convinced that there is no other way to eradicate foul brood from a yard than to melt up the combs every four or five years. Indeed, we have been practicing that policy for the last six or seven years. We are this very day melting up some 300 or 400 combs, many of them good ones, for no other reason than that they are four or five years old. So far as we know they are and always have been free from disease. But we sell bees by the colony and nucleus, and we realize the very great importance to the general bee-keeping world of sending out bees on only fresh new combs, and in the mean time eliminating any possible chance of the disease breaking out, by putting an age limit on our combs. Our experience shows that the wax secured will pay for the foundation at the price the bee-keeper pays, and even for the labor of rendering, since the work may be done at a time when a bee-keeper can not do much else.

Again, there are many producers who are harboring in their yards a lot of combs containing a very large excess of drone-cells. When these are in the yard one never knows but he may be incurring a big expense by raising a lot of unnecessary drones, unless he is keeping a close watch. No, it does not pay to keep drone comb, even in extracting-supers. It had better be all eliminated and good worker comb substituted. It will pay in the end.

But right here some will say that "the Root Co. are makers of foundation. They can well afford to advocate the policy of melting up combs every four or five years." This is a specious argument against the practice, and we admit it *may* have a bad look. But we only ask the bee-keeper to conduct some experiments of his own on a sufficiently large scale and then tell us what he finds. The truth is what we want, cut where it may. Right here we may say the old-fashioned methods of old-comb rendering will not secure enough wax to pay for new foundation by a long way.

# CONVERSATIONS WITH DOOLITTLE

QUERIES ANSWERED.

A correspondent propounds the following questions which he says he wishes me to answer through these columns:

1. Would it pay me to take a big swarm of bees, which a party here will drive for their honey, and feed them for winter? I can have them as a gift, and the time of driving will be about October 20.

I would say, that would depend, on whether you had combs to give them or not. If you had a hive filled with empty combs which you could spare to put the driven colony in, it would pay you well; or, rather, it should if nothing unforeseen happened; but if you have no combs, and have to feed to have them built, and for winter stores also, it would be a doubtful investment as late in the season as you name. With the combs, 30 pounds of syrup fed, at a cost of about $1.25 for sugar, there should be no question about the profitableness of the matter. Better still, if you have five or six frames of sealed honey to give them, together with three or four frames of empty combs to alternate in the center of the hive where the bees should cluster, you will be almost sure of success. By this giving of sealed stores I have saved many doomed colonies in years gone by, some of which gave me from 150 to 200 pounds of section honey the following summer

2. What is the best time to feed for winter, and how is it done?

*Answer.*—The proper time to feed when bees lack for winter stores is at the earliest possible moment after the bees cease to obtain a living from the fields, and as soon as most of the brood has emerged from the cells of the combs. This comes from the 10th to the 25th of September in this locality, and I should say feeding for winter ought to be done in September in any locality if possible. This gives the bees a chance to evaporate the feed properly and seal it over before much freezing weather sets in. For feed, combs of sealed honey have my preference; but if these are not obtainable, make a feed of water, sugar and honey, as follows: Take 15 pounds of water, putting the same in a suitable-sized vessel which is to be kept over the fire till the water boils. When boiling, 30 pounds of granulated sugar is to be stirred into the water, the stirring being done so that the sugar shall not settle to the bottom and burn before being thoroughly incorporated with the water, as is often the case where the sugar is poured in without any stirring. As soon as the whole boils again, remove it from the fire and stir in 5 pounds of extracted honey. This makes 50 pounds of feed equal to the best of honey. There are other ways of making feed for bees; but after trying all that have been recommended I prefer the above to any of them, and consider the feed enough superior to pay for any extra labor it may cost. When many colonies are to be fed, the formula may be multiplied to meet all requirements when the bee-keeper has some large vessel to make the syrup in. To feed, use feeders if you have them; but in the absence of such it can be done very acceptably as follows: Remove the cover or cap from the hive, and use an ordinary four-quart pan. Fill it with the syrup, and put on a float of some kind to keep the bees from rushing into it and drowning. I often pull up two or three handfuls of grass near the hive and put on top of the syrup for this purpose. Now open a hole in the honey-board, or turn up one corner of the quilt a little, and set a chip from the hole to the edge of the pan, so the bees can climb up to the feed. Pour a spoonful or so of the feed down through the hole to show them where it is, and put the cover on over all, making sure that no crack is left so any robber bees can get in. To guard against robbing, it is best to feed between sunset and dark at all times.

3. What is the best thing to do when neighbors' bees are robbing yours?

*Answer.*—The best thing to do is not to let the bees get to robbing. This is quite easily accomplished by keeping none but strong colonies, and allowing each colony an entrance or doorway, according to its strength. In early spring, when robbers are the most persistent, allow room for only two or three bees to pass at a time where any colony may be somewhat weak, and give not more than two inches in length of entrance to the very strongest. Colonies so weak as to be unable to defend themselves, together with any and all queenless colonies, should be united with stronger colonies or with those having queens. If it is desirable to save a colony which has been neglected till robbing has commenced, close the entrance so only one bee can pass at a time, and leave them till near night, or till all the robbers have gone home, then go to some strong colony and take a frame having the most young bees emerging from the cells that you can find. After brushing the bees from this, insert it in the center of your robbed colony. After having done this, close the hive tightly except the entrance, so as to preserve all the warmth possible, carrying the hive to a darkened cellar. Leave it there three or four days till the robbers have partially forgotten the place and the matter, and until many young bees have emerged from the comb given. Now take it from the cellar near sunset, after the other bees have largely ceased flying, placing the hive where it stood before, and you will have no further trouble if you are careful (as you ought to be at all times) not to let the bees get a taste of exposed sweets.

4. Would bees driven out in August and put in a hive without combs or honey work as well as a new swarm?

*Answer.*—That would depend upon the honey-flow at the time the driving was done. If at the beginning of the buckwheat bloom, and the bloom were giving nectar, there would be nothing to hinder their doing well, as we often have swarms at this time which fill their hives in good condition for winter, besides yielding a surplus if the season proves good. However, if the season for buckwheat were nearly or quite over, either a driven or natural swarm would not do any thing. There are sections of our country where the asters and goldenrods, together with other fall flowers, abound, in which both kinds of swarms might fill their hives with comb and

honey so as to be fully prepared for winter. As a rule, however, all increase should be made during June and July. As to which is best, a natural or a driven swarm, good authorities differ, many claiming that a driven swarm is as good as a natural one. It is always safe to say that, for the beginner, a swarm issuing in the "good old way" is fully as well equipped for the battle of life, if not better, as they can possibly be by the interference of man.

# SIFTINGS.

By J. E. CRANE

Say, brother bee-keepers, let's just remember that robber trap described on p. 989, and make one next winter. It may be worth many times what it costs.

We are grateful for those fine pictures of Aspinwall's hive. It seems almost as good as seeing them. It may be too early to criticise them; but if he can get all those supers filled they must have some virtue.

I am not surprised at the testimonials to the value of corrugated paper in place of cleats for sections to rest on, p. 1073. I believe the more it is used the more it will be appreciated. That new shipping-case is a beauty if we may judge from the picture.

Commencing on page 1071 are three articles on grading and packing honey that will well repay any one who raises honey to read with the greatest care. They are packed as full of good things as they well can be, and no one can go amiss in following their advice. They must be read carefully to be fully appreciated.

Dr. Miller wonders if his bees place dark wax brought up from the brood-chamber between the clamps because it is too dark to cap the sections with—p. 987. Did not the bees place the dark wax on the bottom of the upper clamps before it was raised up, and then, as honey became more abundant, and wax more easily produced, use the new wax for sealing the lower clamp?

Dr. Miller also says, page 987, "Ever noticed that bees are more particular about the combs they put brood in than about those they put honey in?" I have noticed it, and thought that it was for the purpose in some way of fitting it for brood-rearing. I have sometimes noticed that, where occupied with brood before being filled with honey, some cells were left empty, as though the brood had died in them.

Dr. Miller tells us how his bees do not cluster out, although the thermometer registers 99° in the shade at 2:40 P. M., p. 987. Decidedly interesting; but are you sure that the time of the bees is wasted when they cluster outside a hive in very warm weather? Clover nectar, I believe, as a rule has to be reduced from one-half to two-thirds to make honey; and I am satisfied (as I hope to show later) that this is a laborious task, amounting to perhaps one-third or one-half of the work of the hive. I never could see that it made any difference with the work in the house if the women sat out under a tree in the afternoon of a hot summer day; and it seems to me the bees can just as well reduce their nectar on the outside of a hive as inside—perhaps better.

On page 1005 Mr. Bassett suggests rearing a young queen over an excluder, and then, by shaking her down in front of the hive, supersede the old queen. Mr. Alexander replies by saying that it is a very difficult thing to do. I believe Mr. Doolittle advises the same method as the easiest and best one for changing from an old to a young queen. I tried it with a number of colonies the past season and found it a failure in almost every instance.

In the Aug. 15th issue Mr. Doolittle has an interesting article entitled "Closing up the Section-honey Season;" but what I wished especially to call attention to is the price he obtained for his light unfinished sections — within 2½ cents as much as for fancy. This has been my experience. We secured within two to three cents of the fancy price during the past fifteen or twenty years, and we put up from fifty to one hundred such cases, each year. I do not intend to have such sections run below three-fourths full weight; and when they sell for such a price it doesn't pay to mix it in with the best grade.

Those remarks by the editor on page 1049 on marketing honey are well worth pondering by bee-keepers. One of the things that constantly surprises me is the large number who like honey and the few who get it. They do not seem to know where to find it. Only yesterday we sent a case to New York to fill an order. Recently we had request for samples from San Francisco. Some two years ago we received a letter from a lady in Massachusetts asking for a bottle of our honey, as she had sampled some of it and was pleased with it. We wrote her, asking her to club with her friends and send for a case, as it would save freight. Well, now! that woman has sold several hundred pounds of our honey, and so it goes. We shipped several cases to the city of Washington last winter in the same way.

On p. 1047 Dr. Miller has a Straw in regard to the depth of space between the bottom-bar of the frame and the floor of the brood-chamber. I have not been troubled so much as to the depth I should like as to what I can keep. If I start with, say, ½ inch, it is sure to increase in winter when the inside of the hive is damp, and shrink in summer in dry weather; and this constant swelling and shrinking, year after year, has so reduced this space that I have had to nail cleats around the top to make my brood-chamber deeper. Moral. — Make your brood-chamber a little deeper than you want, and in time it will just suit.

On the next page, 1048, Dr. Miller tells us how queenlessness may be discovered by the way the honey is distributed through the hive. Very

good; and he might have told us that, when we find a little patch of polished cells near the center of a comb, half as large as the hand, surrounded by honey, we may be very sure we have a queen nearly ready to begin laying.

Then A. I. Root is to give us some "Health Notes." Good! There is room here for a large amount of much-needed work along these lines; and he seems to be on the right track too. It is queer that birds and wild animals should live their lives in almost perfect health, while man, the most perfectly organized of all creatures in this world, should so often live an unhealthful life of weakness and suffering. Even those who think themselves well are unable to accomplish nearly what they might if they were all they imagine they are. It ought to be a shame and disgrace to have constant ill health. How many persons we meet who seem to know about almost every thing but how to live, and die because they do not know enough to live!

# GLEANINGS FROM OUR EXCHANGES

By W. K. Morrison

### TROUBLE FOR FRENCH BEE-KEEPERS.

The French bee-keepers have had not a little worry lately on account of the proposal now up for consideration before the local government of the department of Loiret to regulate the distance of apiaries from the highways or inhabited dwellings. At present the regulations call for bees to be located not less than 15 feet from the highway, if they are enclosed; if not, they must be 37 feet from the highway or dwelling. On the petition of 44 inhabitants of the village of d'Ascheres le Marché the prefect evidently thinks seriously of increasing this distance to 325 feet. Of course, this would impose a great hardship on the bee-keepers, and many would have to stop keeping bees. The French bee-keepers have a strong organization, and doubtless they will put up a stiff fight before they allow this proposed change to become law.

### CONFISCATION OF ADULTERATED HONEY.

Some time ago the United States pure-food inspectors seized a large quantity of adulterated honey in Detroit. It was shipped there by the Rogers Holloway Co., of Philadelphia. The Department of Agriculture immediately began action in the district court for a decree of forfeiture and condemnation. The defendant having failed to answer, the misbranded goods have been forfeited by order of the court. There were four actions — one for eight barrels of honey, one for 200 cases, one for ten cases, and another for six barrels. It was all marked "Pure Strained Honey," but on analysis by the Bureau of Chemistry it was found to be a mixture of honey, invert sugar, and glucose.

It is generally understood that this concern had been doing a large business in this kind of artificial honey. Evidently they thought they could deceive Uncle Samuel. The honey-producers of Michigan may be congratulated on these seizures. It is one of the finest things that ever happened for bee-keepers generally, and can not help being a great benefit to the honey-dealers of the whole country.

### THE FEDERAL INDEPENDENT BEE-KEEPER.

The two first numbers of *The Federal Independent Bee-keeper*, published by Messrs. Penglase & Armour, at Bairnsdale, Victoria, Australia, have arrived here. It is certainly a very bright and lively bee-journal — not very large, but full of strictly original matter. It is edited and published by men who depend solely on bees for a livelihood, and none but original contributions appear, and that is to be its policy. Gippsland, where these enterprising men have pitched their apiaries, seems to be a fine bee country; and so, of course, the various items will be tinged with propolis and slumgum. There are twenty pages in the first and second numbers, and the September issue has two half-tone illustrations. I sincerely hope Messrs. Penglase & Armour will keep up the pace they have set for themselves. Australia now has three bee-journals, which is all that the United States has at present. Advance, Australia.

### FORMIC ACID IN HONEY.

The writer has never taken much stock in the ordinary theories accounting for formic acid in honey—least of all the sting-trowel theory of the Rev. Mr. Clarke. There is not much doubt that the formic acid is the result of the process the nectar undergoes while in the honey-sac of the bee. Burning sugar, we know, develops *formic* acetylene-hydrogen—one of the most powerful of gases. Sugar is itself an antiseptic, and this gas is infinitely more so. Many people burn sugar for the express purpose of disinfecting sick-rooms, with good results.

Another theory which has not much to support it is, that bees invert nectar. As a matter of fact, it is usually half inverted before the bee sips it from the flower. It inverts while in the combs, and it keeps on inverting in the bottle after it has been extracted. Of course, the temperature at which it is held in the hive helps the process and rather favors the presence of enzymes; but to say the bees do it all requires a vivid imagination.

### IRRIGATION IN MEXICO.

Old Mexico has decided to emulate Uncle Sam a little, and purposes irrigating large bodies of land by means of government assistance. To do this it will give bonuses or subsidies to individuals or companies who provide the means to irrigate tracts of land within the republic. The first enterprise of the kind will use the waters of Lake Chapala, one of the most beautiful sheets of fresh water in the world. The concessionaire is a private individual who will get $10.00 per acre bonus from the government. Mexico is one of the finest regions in the world for bees, and large tracts of land in alfalfa will help somewhat as a balance-wheel to the bee-keeping industry by making it more reliable. The Mexican ranchero is not likely to cut alfalfa before it is ripe, neither is he likely to compete with the expert bee-keeper, so the latter will have a fair field,

Around Monterey is an immense territory very suitable for bee-keeping, which must sooner or later appeal to American bee-keepers, and I imagine it will not be long before some of our enterprising bee-men will exploit this new territory

### THE PRICE OF HONEY IN BELGIUM.

On a number of occasions it has been noted in these columns that, in many parts of Europe, the price of honey is established by the local bee-keepers' society. In *Le Progress Apicole*, of Belgium, for October, the retail prices in various sections are announced. As they are interesting to many they are appended here. (The cost of the package is borne by the buyer.)

Section of Binche, crop rather small; price 22½ cents; wax, 36 cents. Section of Bioul, 18 cents; wax, 36. Section de Cul-des-Sarts, 22½ cents for honey. Section de Fayt-lez-Manage, 20 cents. Section de Geronsart, 18 cents Section de Jurbise, 18 cents. Section de Maredret, 20 cents. Section de Solre-sur-Sambre, 20 cents. Section de Thy-de-Chateau, 20 cents. Section de Trazegnies, 22½ cents. Section d'Yvior, 18 cents. Section de Rosel, 18 to 20 cents.

There is nothing very arbitrary about this plan. If a bee-keeper feels he should sell his honey for less he may do so; but the prices quoted are generally adhered to, and in time buyers are satisfied. Of course, honey not up to the standard will have to be shaded.

### LE LIVRE DE L'APICULTURE BELGE.

Monsieur Desire Halleux, of Spa, Belgium, has very kindly sent me a copy of his new book on bee culture, of which he is the author. Few men are better situated to get out a first-class bee-book than he. As editor of *L'Abeille et sa Culture* he keeps in touch with current literature. He is professor of apiculture at the Huy School of Agriculture; president of the bee-keepers' union in his section, and a counselor on bee-keeping to the Belgian government. The result is, he has turned out an excellent manual for Belgian and French bee-keepers. It has 383 pages, almost as large as GLEANINGS, and yet it costs only 50 cts. (postage extra). The paper and printing are both good. From the American standpoint it would not be considered up-to-date; but "Le Livre de l'Apiculture Belge" has some ideas well worthy of introduction into this country. It shows, for example, a robber-trap that is very ingenious and cheap. The honey and wax presses are ingenious and well built, and there are several other clever inventions illustrated. The subject-matter is extra good, showing a comprehensive grasp of the subject. It has a strong chapter on the uses of honey, which I may allude to later. One assertion is worthy of note. On page 359 it says: "Sugar is to honey what margarine is to butter." —*Rusticus*. That sentence is worthy of constant reiteration.

### WESTRALIA.

We have received the "Fleet Number" of the West Australian *Times*, published at Perth. The special number is published, of course, as a memento of the visit of the American battleship squadron to the city of Albany, W. A. A good deal of it is taken up with a description of the country from a settler's point of view, and a synopsis of the land laws. The latter seem to be extremely liberal—160 acres for $20. The climate is similar to California, and the crops grown are about the same. A "land bank," owned by the state government, lends money to settlers for the purpose of improving the homestead and purchasing stock; also for clearing off the land. The country is timbered with very fine hard woods, eucalyptus being plentiful; also wattle and banksia and other famous honey-producing plants. I am under the impression West Australia holds the record for the greatest yield of honey ever reported from one colony of bees. In some years their yields are wonderful It is an immense country, being four times as large as Texas. Potentially it is very rich, and in time ought to become one of the great nations of the earth if only a sufficiency of the Caucasian race of men settle there. An American farmer would probably feel more at home in West Australia than any other foreign country in the world. Every thing seems to be managed on American lines, and the people are sincere admirers of the great republic of the west. They are equally optimistic and democratic. More details can probably be obtained from the Colonial Secretary's Office, Perth, West Australia, by any one who has an idea of going there to settle.

### PARCELS POST CRITICISED.

A friend who keeps a hardware store at Wilbur, Nebraska, sends me a very courteous criticism of my stand on the parcels-post question, and in addition he incloses a pamphlet written by C. W. Burrows, one of the largest booksellers in the United States. Mr. Burrows' article I have read before, and, so far as I am personally concerned, his arguments have no weight, because he denounces mail-order concerns when he himself does a very large mail-order business in books. Of course, he pays only 8 cents per lb. postage on books. If he had to pay 16 cents it would probably make quite a difference in his attitude. Furthermore, many of his statements are not true. In Europe there is a parcels-post service in every country, and from one country to another; and, though it has been working for many years, it has not had the effects he says it will have in this country. Just the contrary is the case. Country merchants in Europe like parcels post. They do a lot of business by catalog. There, when a man steps into a country store where hardware is sold, and inquires for an article, the merchant does not send him away, but tells him he can get it for him in 24 hours. He orders it sent straight from the wholesale house to the customer, so he never sees it. He makes a profit just the same. Let us suppose a case. A bee-keeper in Nebraska goes in a great hurry to a hardware store and inquires if they have a little comb foundation or a few sections. The merchant says, "No, but we can send them to you in a day or two if you will leave your order." The bee-keeper goes home, and in less than two days the mail-wagon leaves the goods at his house. It is the same in every other kind of business, and very much so in the case of hardware, for no country dealer can afford to keep a complete stock. He keeps a full set of catalogs, however.

Mr. Burrows claims the mail-order business would build up the cities; but it has not done so in Europe. I know many people move to the towns so as to get more comforts. They want the daily papers; they want fresh meat every day, and many other things which they can not get. It is a very common occurrence in Europe to see butter, eggs, honey, flowers, fruit, etc., sent by parcels post. I have repeatedly seen meat sent by the same means. It strikes me this is a good thing, and I firmly believe it will be a great day for bee-keepers who sell their honey to consumers direct when parcels post is allowed by Congress.

Please do not think I imagine all this. Only a few days ago a gentleman who keeps a drug-store here in Medina issued the following circular. It speaks for itself.

*Dear Friend:*—We wonder if you know how easy it is to order drugstore goods by telephone or mail. Since the rural routes have been established in this section of the country many of our old customers who formerly waited until they came to Medina to buy drugstore goods are now ordering by phone or by mail, and having the goods delivered by rural routes. You will find the system works very nicely indeed; for instead of waiting days or weeks for storms to blow over, etc., for goods of which they are very much in need, they are able, by the new plan, the R. F. D.'s, to have things delivered the next day.

We should be glad indeed to have you keep this in mind; and if you are in need of any drugstore goods in the near future, write or phone us, and you will find we will take care of your order just as carefully and just as promptly as if you yourself came personally to our store.

The writer of the foregoing has a store in a country village, and it is very clear to me that parcels post would enable him to extend his business considerably, as 16 cts. a pound is too much to pay for goods delivered on a rural route. Every country storekeeper should be, in my opinion, a strong advocate of parcels post. It is bound to help him. The Postmaster-General intends it shall help him, and he will help him if he gets a chance to do so.

CARPET WEED.

The *California Cultivator* recently gave space to the following query from a correspondent:

I read an article in a recent issue of the *Cultivator* regarding *Lippia repens*, a creeping lawn-plant. Where can I obtain a start of it? Will it spread and become a pest? Is it a forage-plant for stock?—W. E. A.

In answer to the above the editor replies:

We should think you could secure this plant from your local nurseryman; but if not, the Southern California Acclimatizing Association, Santa Barbara, which originally introduced it, or probably any nurseryman advertising in these columns, can supply you. It will not become a pest, and is easily eradicated if desired. While it has been claimed to be a strong enough grower to eradicate morning-glory, we do not know whether it would do that or not. It would surely need encouragemement by keeping down weeds until it is thoroughly rooted. In the yard of the writer it has proven very attractive topoultry, which run to it immediately on being let out of their corral; but as to whether stock would find it agreeable, or whether it would live under grazing, we are not prepared to say.

This lippia is a splendid honey-plant—few better—and is, in addition, a soil or sand binder, creeping over the loose sand and covering it with a mantle of green like a carpet. In Florida it would be a grand acquisition, and thousands of dollars could be profitably spent in getting it started there. It is fair for stock. If it would take hold of Florida land as it does some others, the "land of flowers" would become one of the leading honey States. Every Florida bee-keeper should try it.

# GENERAL CORRESPONDENCE

## WHAT HIVE TO ADOPT.

### A Discussion of the Merits of Different-Sized Hives, Taking into Consideration the Man, the Methods, and the Locality.

BY E. D. TOWNSEND.

The proper hive to use is a question that confronts every beginner. The kind, size, and shape of the hive best adapted for the purpose must be taken into consideration, and these depend upon whether comb or extracted honey is produced; whether the colonies are all in one yard or in several outyards, etc.

In reading the current literature on the subject, much confusion of ideas is noticeable; for in some locations, where conditions ought to be the same, one bee-keeper will use a large hive and the other a small one, each being successful with his own preferred size. This reminds me of a little incident that came up in our convention at Saginaw. Mr. W. J. Manley, of Sandusky, told of buying about 60 colonies of bees, one of which was in a soap-box. This soap-box colony was inverted, an upper story put on, and, although the colony was handled the same as the others, several more pounds of honey were extracted from it than from any other individual colony in the yard. This only goes to show that bees will store honey in almost any kind of hive; and, further, that a hive poorly proportioned can be so manipulated as to yield fair results in the production of honey. But in this case it is, of course, the man and not the hive that should get the credit. In this article I propose to fit the man to the hive, the hive to the man, and both to the location.

It has been my fortune (or perhaps misfortune) to be the owner of almost all kinds and sizes of hives, including the ten-frame Gallup and the ten-frame Quinby—hives varying in size from 1000 to 1800 square inches of brood-comb space. I have also had the eight, ten, and twelve frame Langstroth hive; and many times different sizes and styles of hives were in the same yard. My experience with such has extended over many seasons, so that I am in condition to know which size and style are best adapted to my locality and to my particular system of management, etc.

Probably two-thirds of the colonies in this State are in eight-frame Langstroth hives, or in hives similar in size and shape. In general we may say that, the further north the bee-keeper is located, the shorter his honey season. A short season requires a small hive for the best results in the production of honey; and a small hive requires the more constant care. A large hive will stand more neglect.

Our location is one where the surplus flow is early and quite short, it being mainly from clover and raspberry. This flow usually begins about 60 days after the first natural pollen is brought in. The best flow is apt to come after a rigorous winter, and then the skill of the expert

is needed to bring the bees through in good condition, and tide them over the ever changing days of spring. All admit that an eight-frame Langstroth hive is large enough to allow a colony of bees to build up to a normal size during this time *when circumstances are favorable.* Now, if it takes all the skill of the experienced bee-keeper to manage his bees so they will come through the winter and spring in the best condition and take care of the surplus honey in general, what can be expected of the inexperienced, careless, or indifferent bee-keeper? It is evident that the eight-frame brood-nest is ample for such, as there is no object in having more frames if the bee-keeper is not able to get the colony built up safely to occupy them. The eight-frame is ample for the beginner; but when the knack of successful management is acquired, so that at least half of the colonies, by the time the honey-flow begins, fill their hives to overflowing with bees, a larger hive—that is, a ten-frame size—must be used. If the beginner were to start with a twelve-frame hive it would be my opinion that he had begun at the top of the ladder instead of the bottom, and his failure would be almost certain. The change from the ten-frame size to the twelve-frame size may be advisable whenever one has mastered the situation, so that the ten-frame hive has become too small to hold his colonies at the opening of the flow. The location must always be considered in this connection; for if the main honey-flow began only 90 days from the time the first natural pollen is gathered, a hive with at least two more Langstroth-sized frames could be used than would be advisable if the main honey-flow began only 60 days after the first pollen was gathered in our location here.

Mr. S. D. Chapman, of Mancelona, Mich., is one of the most successful bee-keepers in Michigan, as he has bee-keeping "under his thumb." He winters his bees in four cellars, and brings them through the winter and spring very strong, so that, long before the 60 days breeding season is ended, he is obliged to allow additional room for the queen to lay, and also for clustering space in order to keep the bees from swarming before the honey-flow. Two of Mr. Chapman's cellars are under his dwellinghouse, a third is an elaborate special repository, and the fourth is one not so expensive. One of the cellars under the dwellinghouse is under a part of the house where a fire is kept going most of the time; and these colonies must be set out in the spring earlier than any of the others. All of this shows that the man and not the cellar should have the credit where the colonies are successfully wintered in four cellars of different design and construction, necessitating different methods of handling, etc.

Good wintering in the northern States is one of the supreme tests of a successful bee-keeper; and the inability of many of the northern men to winter their colonies so they will breed up and fill large hives in the short period between the breeding season in spring and the main flow in June is the reason that most of them prefer a small hive.

For 18 years I had 50 ten-frame Quinby hives in use. These were chaff hives with the regular thickness of packing around the sides, top, and bottom in winter; but the best I could do was to get the colonies in these large hives in condition for the honey-flow about July 1, when in our locality the white-clover flow would be nearly over. At the same time I was having good success with the thirteen-frame Gallup hive, and so I took out the two outside frames of the Quinby hive, reducing it to the eight-frame size, which equaled in space the thirteen-frame Gallup hive, except that the frames ran the other way. These two hives gave good results, and I patterned after this same size when I adopted the ten-frame Langstroth hive.

I do not mean in any of the above that I prefer the eight-frame hive. It is true that I said that the eight-frame Langstroth hive is large enough, and that it needs less care, and some may wonder why I use the ten-frame hive. I will try to explain the reason. It sometimes happens that we do not see our colonies from the time they are taken out of the "clamps" until it is time to put on supers, and in such a case all must be fed enough in the fall to make a total of from 25 to 30 pounds of stores, to make sure that none starve during the spring when we do little if any feeding. Our colonies use from 20 to 25 lbs. of stores from October till the main honey-flow in June. At the time of the main honey-flow, there will be from 5 to 10 lbs. of stores left in the hives which have contained 30 lbs. in the fall, and from nothing to 5 lbs. in those hives which contained 25 lbs. in the fall, the calculations being based on good average colonies—weak colonies consuming less. Now, a Langstroth brood-comb contains 5 lbs. of honey and bee-bread when sealed; and 30 lbs. of stores will, therefore, fill six brood-combs spaced 1⅜ from center to center; so that in an eight-frame hive there will be only two empty combs left in the fall. A colony wintered fairly well in such a hive will become honey-bound before the main flow the following June. It would have been in better condition at this time if there had been a comb or so of stores left. On the other hand, the ten-frame hive with 30 lbs. of stores would have *four* empty combs in the fall; which combs, together with those from which the honey is used during the winter, would make ample room for the queen to lay and still allow a "reserve fund" consisting of a comb or more of honey at the beginning of the honey-flow in June. For this reason, therefore, we prefer the ten-frame hives.

Remus, Michigan.

*To be continued.*

## CAN WE DISPENSE WITH SEPARATORS?

### Why Many Bee-keepers Prefer to Produce Bulk Comb Honey.

BY LEO E. GATELEY.

Unless acquainted with the facts, one might, from all that has appeared upon the subject, be easily led into the error of thinking that the production of bulk comb honey is a part of bee-keeping confined exclusively within the borders of Texas. From actual conditions nothing could be further from the truth. A large part of the Arkansas crop has always been put upon the market in this form, and, to a great extent, it will be found very much in evidence throughout the South.

Though, perhaps, the cause for this method of marketing having become so universal in our State seems too often a result of carelessness, to the careful observer, another cause is visible which producers in many parts of the South can not afford to ignore. This is the difficulty often encountered here to a degree seldom found in more favored localities, of getting the best work done in section supers on account of peculiarities in the flows

During a season of our prolonged flows, the bees, if rightly managed, will store as much honey as can be secured in the average locality; but seldom is the flow sufficiently heavy for bees to work in supers as they will in a good basswood region. During such slow flows the bees are greatly inclined to crowd honey into the brood-chamber rather than in any sort of surplus arrangement. As separators accentuate this inclination, I have been for some time endeavoring to eliminate these from our supers, and I have met with a measure of success. Most bee-keepers recognize the importance of having free communication in supers; but to avoid the annoyance and discomfort of having irregular and bulged sections the majority prefer to use separators, even at the expense of a few pounds of honey.

In this connection Mr. Sherburne, p. 947, Aug. 1, presents an article at once interesting and instructive. Like him, we have learned that the secret of getting cratable honey when no separators are used lies in having most of the sections started upon simultaneously. Also, to accomplish this result, too much space must not be left in the brood-chamber when sections are put on.

Bait-combs, when used in supers not having separators, can not be placed haphazard, as they will be widened considerably at the expense of adjoining sections before those containing foundation have been worked upon. The only satisfactory way is to use a row or two of these along each side of the super.

Comb-honey supers as now constructed, while being the source of frequent complaints, generally allow greater convenience for the man than for the bees. In localities similar to ours, many who started in to raise section honey have gone back to producing bulk comb honey for no other reason. I can not but realize the great disadvantage bees are compelled to labor under in ordinary supers; and another year, notwithstanding preconceived ideas as to how section honey ought to be produced, no separators will be used in our apiary.

That more honey can be secured if we dispense with separators has been demonstrated over and over. When bees do not enter the sections readily, but crowd the brood-nest with honey, the working condition of a colony is rapidly impaired. Even with our divisible brood-chambers, I have seen honey crowded into the brood-combs until but two or three shallow frames remained for the queen. For a colony to remain populous is impossible under such circumstances.

The past season some 2000 1⅜ Danzenbaker sections, having beeways, were used in our apiary, without separators, and never before did I see so clearly demonstrated the necessity of having supers so arranged as to meet the natural requirements of the bees. On two sides of these, beeways were cut their entire width, so that the wide frames, in which they were used, might be made with plain top and bottom bars, yet leaving no part of the sections exposed. No separators are required for so thin a section, and we find that, when disposing of honey, a full section that can be sold for a dime moves off more rapidly than one weighing a full pound.

Contrary to the opinion expressed by the editor on page 1079, though the sections above mentioned were open on but two sides, there were no uneven combs or bulging. Undoubtedly there would be an advantage in having them open all around, but we have not found this to be absolutely necessary.

If compelled to use separators, Mr. Sherburne says he would abandon comb honey and produce only extracted — exactly what most bee-keepers would advise for a locality like ours; but the environments of all are not such that this can be made profitable, and such conditions here exist. If necessary we can fall back to the bulk comb, though as yet no occasion has arisen why a change to either would be advisable.

Ft. Smith, Ark.

## GRADING AND CASING COMB HONEY.

### How the Work is Rapidly Done at the Apiary of M. A. Gill; Further Particulars Concerning the Record Casing.

BY G. C. MATTHEWS.

The various articles appearing in GLEANINGS for the past few years concerning the rapid casing of honey have interested me somewhat, and have likewise furnished me some amusement; for, having been intimately associated with M. A. Gill for the past three seasons, I have been in position to understand what honey-handling really means, and to be able to refute those articles which, by covert innuendo, cast discredit upon the article of Mr. F. J. Farr, in GLEANINGS for December 15, 1907.

Now, that which Mr. Farr saw, which surprised him as much as it does some of his readers, is a thing of not uncommon occurrence in Mr. Gill's casing-room. There are many days every August when Mrs. Marian Fuller, of Beloit, Wis., cases just as rapidly as she did on that warm day when Mr. Farr was her waiter, though she does not frequently case so many hours.

In all this honey business the super that predominates is one of Mr. Gill's own invention, although, like others, we have several other kinds. This super is of standard eight-frame dimensions except in depth, it being deeper so as to accommodate ⅜-inch slats; but it has no section-holder. The slats are nailed fast to the end pieces in the super so that there are as few loose pieces as possible—only the follower and the separators. The pattern-slats are also a little wider than section-holders, and the separators rest on top of them and not between them.

When casing, the supers are taken from the pile by the waiter, and the tops of the sections are scraped clean with a cabinet-scraper or a piece of glass. Then the follower is taken out and

the super is ready for the caser, no sections having been loosened in the super in any manner.

Now each caser places two cases in front of her on the table, one for No. 1 honey, the other for No. 2, and lifts a super up in front likewise. The sections she loosens from the super with her casing-knife, made especially for casing; and, without changing her grip on it but once, she scrapes all four sides and four edges clean of propolis. Meanwhile she has determined its grade; and just as soon as she has it clean she places it in its proper case. In all our work a section of honey is never handled, except this one time, from the hive to the car. Does it look impossible to handle 5½ sections of honey in a minute the way I have described? and does not this method look more sensible than putting honey in curing-crates, or dumping a wheelbarrow load out on a bench at once, as do our T-tin friends?

After the cases are filled, the caser may nail on the cover if the assistant is busy, but usually the waiter does it. However, the caser gets her own cases, and adjusts her own drip-sticks, sometimes even waiting a short time for cases to be made.

For the benefit of those who think 125 cases can not be filled in a day if the honey is properly cleaned and graded, I will say that Mrs. Fuller cuts a thin shaving off the edges of unusually soiled sections, exposing a clean white wood. Can they be cleaner? In handling empty supers I have seen hundreds containing little shavings, showing her handiwork.

Concerning the grading, I have weighed dozens of No. 2 cases that weighed up to the No. 1 standard, but never a No. 1 that fell below; and I think any buyer of this honey will testify to its quality.

It seems to me very strange that any one who lays claim to being a caser at all can not case more than twenty cases a day. Mrs. Fuller, I know, could easily average four times that many daily, and still have time to attend to housework.

Longmont, Colo.

## UNCAPPING-KNIVES.

### A Very Sharp Thin Knife Preferred Without Heat of Any Kind.

BY T. P. ROBINSON.

Referring to the discussion of uncapping-knives, page 1126, I will say that I never used any but the cold knife to any appreciable extent, and would use no other kind. I have tried knives from boiling water, and found them nuisances so far as I am concerned. In any case, the edge must be sharp and thin, and this would cool just as soon as coming in contact with the cold honey, and cut no better than a cold knife. Then if the body is boiling hot it will melt the wax and make a mess. Then the operator is constantly putting water into the honey from the knife, as a freshly heated knife has to be used on each frame. I don't want any foolishness like this in my extracting-house.

I never have any trouble with my cold knives on any kind of honey that I produce, and I have uncapped it after frost when it was so thick that I could not get over two-thirds of it out of the combs. I keep the cutting edge as keen as a razor, while the other edge is kept moderately sharp to clean burr-combs from the top and bottom bars. The knife is ground to a long keen edge. If it is hard, the temper is drawn to a moderate degree of hardness (this drawing of temper is easy, as I am a steel-worker), and the edge kept sharp by the edge of some other knife of a high degree of hardness, usually a pocket-knife, or steel made for the purpose. The sharpening is done by a shoving process of the blade in the same manner a boy smooths a stick, except that the strokes are made in one direction. This method puts an edge on the knife far superior for uncapping to that made by any stone, since the edge thus put on is in miniature waves, similar to those on a bread-knife, and if the knife is drawn at an angle over the comb it will do the work so easily and smoothly that the operator will wonder how any knife can do so well. I have occasion to sharpen a knife only once for each 1000 lbs. of honey, and sometimes we run over a ton per knife at one sharpening. We did that several times this summer. It takes about 30 seconds to sharpen a knife in this way.

#### HONEY SOURING IN THE HIVES.

We notice that the editor, page 1139, asks some one to give a reason for honey souring in combs as in the case of Mr. Henry Perkins, Calexico, Cal. I have had trouble along this very line. It is entirely due to bees gathering too much nectar heavily charged with water. This is always prominent in the first nectar secretions of plants, and is greatly augmented by damp or wet weather conditions. The fact is, the bees gather more nectar than they can evaporate into honey. I have had my combs swell up and burst open for this same reason. In my case the remedy is simple and easy. Keep only the rousing big colonies that are able, with their heat and fanning, to cure the nectar into honey. Unite weak colonies, or contract the bees on few combs. The trouble is most pronounced in weak colonies and those having too much comb space. I have had no trouble along this line since I found out the true reason. This manipulation is necessary only when the weather is damp. Weak colonies will not be affected with sour honey if the nectar is well cured in the field.

Bartlett, Texas.

#### A SHARP COLD KNIFE PREFERRED.

I have been using uncapping-knives for thirty years. I never heated one in my life. I whet them as sharp as a razor, then polish the rest of the blade on a pine board. I have no trouble from the knife mashing the cells down. I cut both up and down. J. S. McFANICK.

Columbus, Kan., Sept. 27, 1908.

[Several of our correspondents have of late favored a cold uncapping-knife rather than one that is hot. We have not had a large number of reports on this point thus far. We should be pleased to hear from many others. Let us know the condition when a cold knife is better and those under which a hot one gives better results. Or is it possible that a keen-edged *cold* knife is always better than any hot knife?—ED.]

FIG. 1.—MR. AND MRS. CHALON FOWLS, OF OBERLIN, OHIO, AND THEIR FAMILY OF GIRLS WHO DID PRACTICALLY ALL OF THE WORK IN EXTRACTING THE CROP OF NEARLY TEN TONS.

## CAPPING-MELTERS.

### Further Particulars in Regard to Melting Cappings as they Drop from the Combs; an Introduction to the Home and Apiary of Chalon Fowls, Oberlin, Ohio.

BY H. H. ROOT.

From time to time in our columns mention has been made of capping-melters—that is, uncapping-cans arranged in connection with heat so that the cappings are melted as they are sliced from the combs, leaving nothing at the end of a day's work but the honey, the melted wax, and the small amount of refuse. During the past season we spent considerable time in developing an apparatus that would be practicable for all bee-keepers; and since it was evident that no plan of this kind could be given a fair test on a small scale we appealed to Chalon Fowls, of Oberlin, Ohio, who very kindly offered us the use of his extracting-house during the time that he was extracting his crop of nearly ten tons of honey. The cappings from the entire crop were run through a capping-melter, although several different constructions were used before the final form was decided on.

Mr. Fowls' daughters, with the help of the gasoline-engine, do practically all of the extracting. The up-to-date method is followed of leaving the honey on the hives until the flow is about over and then hauling it to the home yard to be extracted. This plan gives the very finest honey that can be obtained, and permits the use of bee-escapes to get the bees out of the supers. These escapes are put on, and all the full supers are removed easily and quietly a day or two later without disturbing the bees in the least. The honey is hauled by wagon to the extracting-house, where it is extracted load by load as it is brought in. Very often the honey was so cold when it was extracted that it was thick and waxy; but the combs were left in the extractor until the cells were comparatively dry. When turning an extractor by hand, it is very hard to do thorough work unless the cold honey is warmed by artificial heat.

The building in the background of Fig. 1 is the extracting-house, the interior of which is shown in Fig. 2. When fast work is being done,

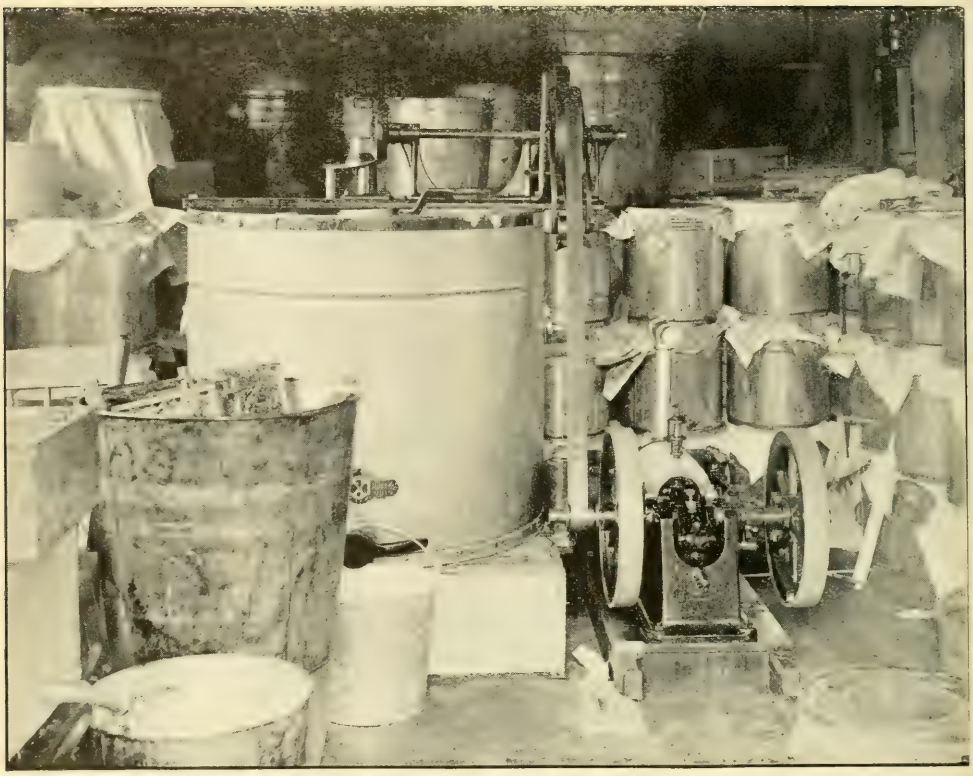


FIG. 2.—THE INSIDE OF THE EXTRACTING-ROOM.

The honey is strained into round cans holding 75 pounds each. These are stacked up around the walls of the building.

two of the young ladies do the uncapping while the third handles the combs, and loads and unloads the extractor, etc. As soon as the empty combs are taken out of the extractor they are replaced in the supers ready for the next year. At the extreme left the capping-melter is shown with a pipe at the bottom, conveying the wax and honey into a large pail on the floor. This particular melter was made square, as it was at first thought that the square form was the better. Over it an empty super was placed on which the cross-pieces were nailed to hold the frames while the combs were uncapped. The uncapped combs were placed directly in a large can in which a coarse screen was supported several inches above the bottom on which the combs rested. The honey that dripped down from the combs was thus always out of the way; and when too much honey accumulated the screen was removed and the honey poured directly into the straining-tank.

As will be noted, the honey was drawn from the bottom of the extractor into a pail and poured directly into an Alexander strainer shown on page 27, Jan. 1st GLEANINGS for 1906. Mr. Fowls found this arrangement for straining the honey the best and most convenient of any kind he ever tried. When the fine wire cloth of one pail is clogged with bits of cappings until the honey does not run through rapidly, another strainer is set over the can while the first one is cleaned with a flat stick or knife.

The honey is drawn from the bottom of the straining-tank directly into round cans which hold 75 pounds. A piece of paper is laid over the top, and the tin cover crowded down. These cans, as shown in the illustration, are stacked up around the edge of the room. The photograph was taken when about half the crop was extracted. Toward the end of the season the cans were piled up nearly to the ceiling. This plan necessitates considerable lifting; and Mr. Fowls, for another year, is planning to run the honey directly from the extractor through a tin pipe into a tank in the basement of his home.

The out-apiaries are located along the electric-car line east and also south of Oberlin. One of these yards is shown in Fig. 3. It will be noted that a high board fence is built along the west side in order to shelter the hives from the cold winds in the winter. The apiary is located in an orchard. In this view, by the side of the honey-house, is shown a Boardman hive-carrying cart which Mr. Fowls has found to be very useful.

Although trips can be quickly made to any of the yards on the cars, the honey is hauled back to the extracting-house by wagon.

A very ingenious arrangement is shown in Figs. 4 and 5 for catching the drip from the supers. As will be seen, a large tray just the size of the wagon-box was made, the edges of which are turned up about an inch. This is placed in the bottom of the wagon, and the supers piled on it. Since

most of the hauling is done after the honey-flow is over, there would be danger of having the horses stung if robber bees were continually working around a wagon-box daubed with honey; but the use of this tray prevents any such danger, as it is removed as soon as the honey is unloaded, and placed out in the yard where the bees can clean it up. In this way the wagon is always clean, and there is no loss of time in any way. The tray may be slid out of the back of the wagon when the end piece is swung down.

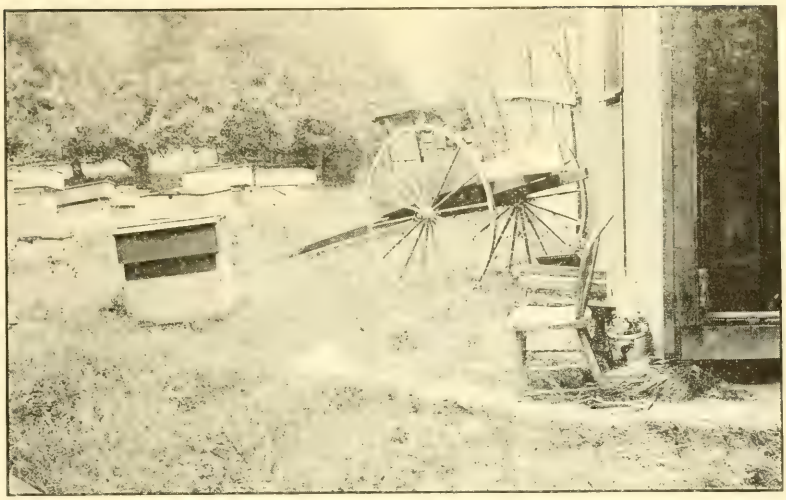


FIG. 3.—ONE OF MR. FOWLS' OUTYARDS, LOCATED NEAR THE ELECTRIC CAR-LINE.
Notice the high board fence which shelters the yard from the prevailing winds.

The Beuhne capping-melter, mentioned pages 560, 626, and 802, is somewhat similar to the other devices that have been described, except that square pipes holding hot water are arranged over the main can. The cappings fall on these pipes and are melted. The plan was found to be defective on account of the fact that the space between the hot pipes so soon became clogged with refuse, necessitating frequent cleaning, which consumed time. Furthermore, the Beuhne apparatus is very expensive; and it is difficult to keep the tin pipes from leaking, as there is constant contracting and expanding due to the changes in temperature, and we therefore turned our attention to a simpler apparatus. We tried a shallow pan, but soon found that it was not suitable, for the reason that it required so much heat to melt the cappings fast enough that there was danger of injuring the honey. We therefore kept enlarging the double pan until we had a can about 16 inches in diameter and 15 inches high. This held the accumulated cappings and honey until the wax had a chance to melt slowly and run out of the gate at the bottom. We first tried a tilting outlet pipe which could be raised up to allow the melted wax and honey to accumulate in the can, the idea being to leave the wax inside the capping-melter, drawing simply the honey off at the bottom. However, we found that, when this plan was used, the honey remained so long in contact with the heat that there was danger of injuring the flavor. We therefore substituted the plain honey-gate, which allowed the honey and melted wax to escape immediately.

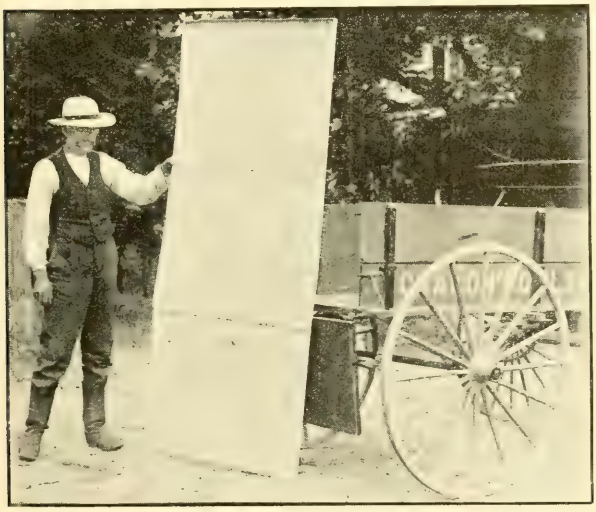


FIG. 4.—FOWLS' REMOVABLE GALVANIZED TRAY FOR THE BOTTOM OF THE HONEY-WAGON.

The form of capping-melter finally decided upon is shown in Fig. 6, the details of which are made quite clear by the illustration. The apparatus is simple, for it consists of only a can within a can, the inner one being an inch smaller in diameter, and ½ inch shorter, which allows a space of ½ inch between the sides and bottoms. A single-burner gasoline-stove keeps the water hot enough to melt the cappings when the honey is extracted at the rate of about 200 pounds an hour. When faster work is done it is probable that a larger can would be needed to be placed over two burners. Oval-shaped cans could be used similar

FIG. 5.—THIS TRAY CATCHES ALL THE DRIP, LEAVING THE WAGON CLEAN, SO THAT THE HORSES ARE NOT IN DANGER OF BEING STUNG AT ANY TIME BY ROBBER BEES.

to wash-boilers, with the strainer and gate at one end.

It will be seen in the illustration that there is room between the two cans for the blade of the uncapping-knife, so that those who desire to use a knife heated by hot water may do so without any additional tank or apparatus. However, we did not find that it facilitated matters to keep one knife in hot water while the other was being used for uncapping the combs. The difficulty was that the honey chilled the knife before more than two or three inches of the comb had been uncapped, and then the wax, which had been melted when the blade first touched the comb, hardened and made the knife gummy, and hard to handle. Usually we preferred the cold knife kept sharp. During the last day or two, however, we used a steam-heated honey-knife very successfully. Such a knife does not become cold when pushed through the honey, and both the honey and wax run off the blade directly, leaving it clean all the time. There is no question that a hot blade is more easily pushed through the comb than a cold one.

Figs. 7 and 8 show somewhat better the construction of the can. Two screens are used to strain the wax and honey. As will be seen, these are slid into place directly over the opening leading to the honey-gate. The coarser screen is used outside, and is made of wire cloth having about four wires to the inch. The inner screen is finer, being made of wire cloth the same size as that used for window-screens. These may be quickly slid in or out, so that, after the work is done, it is easy to remove them for the purpose of cleaning the can. The use of these screens was first suggested by Mr. Fowls in order to keep the refuse from running out with the wax and honey; and they serve the purpose admirably, the honey being so clean that it may be poured directly into the main tank or can without further straining. The wax is also very clean, the cakes hardly needing to be scraped. The wax has a very good lemon color, and is practically as light as that obtained from the solar extractor, and just as clean or even cleaner. The honey is not injured in the least, for it does not remain long enough in the can to get very hot; in fact, the cold honey and cappings falling continually into the can keep the water so cool that the wax barely melts, and it is possible for one to hold his finger in the stream running from the gate for a few seconds without burning it. As will be seen in Fig. 6, the honey and wax run together into a pail or can standing below, which is provided with a gate at the bottom, from which the honey is drawn as fast as the pail is full, care being taken, however, not to keep the gate open so long that the wax runs out. In this way the wax can always be kept on top of the honey in the pail. We found that an ordinary pail would hold the cappings from a whole day's run; but in case the work

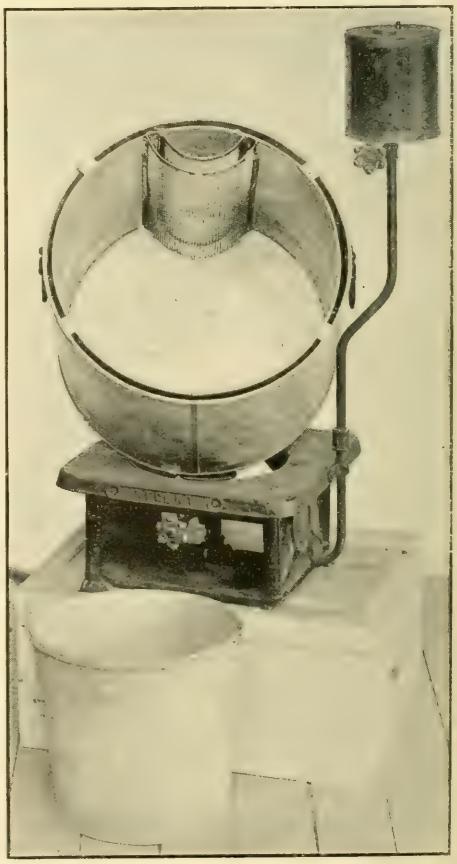


FIG. 7.—THE CAPPING-MELTER TURNED UP TO SHOW THE CONSTRUCTION.

There is ½-inch space between the sides and bottom of the can, making room for about a pail of water.

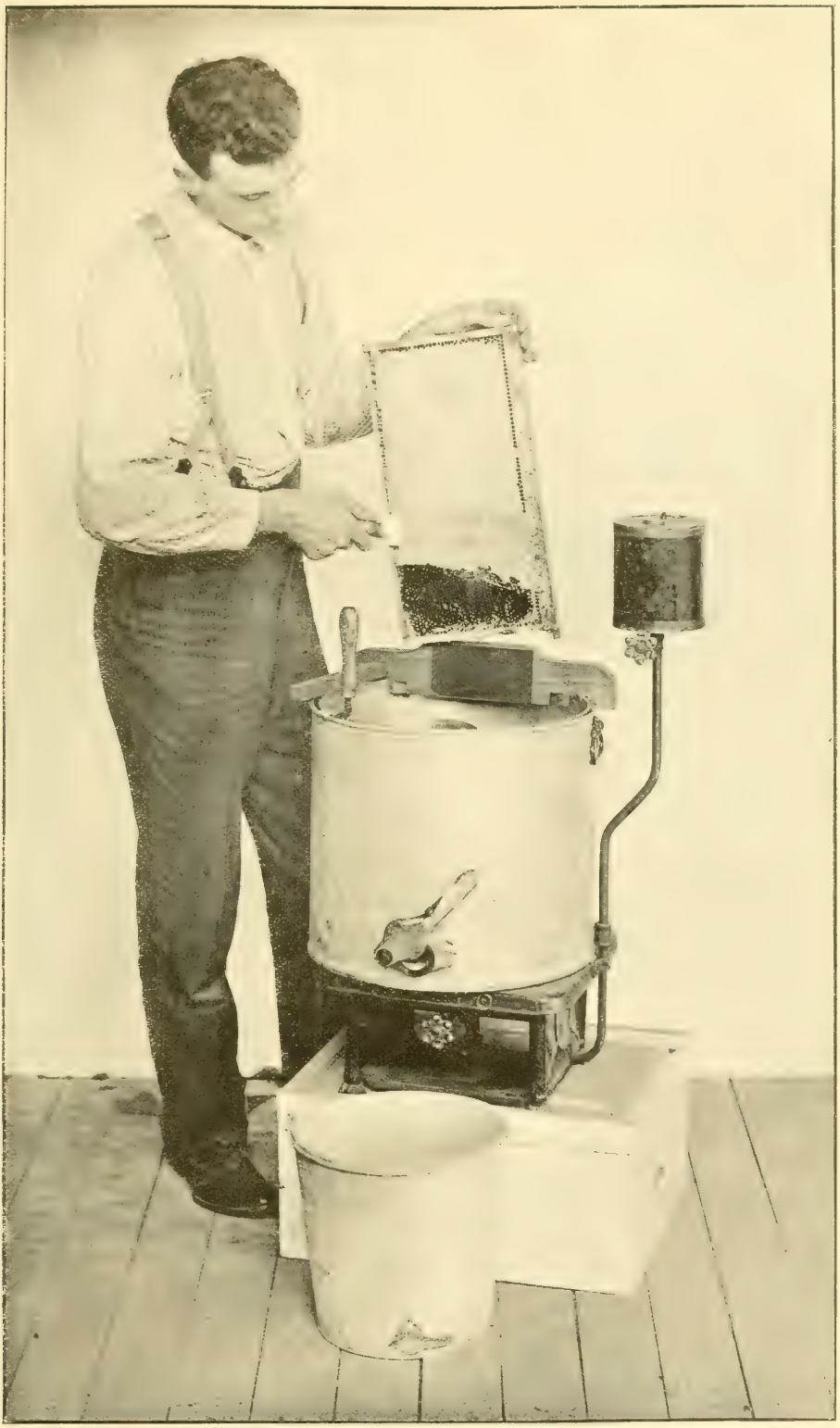


FIG. 6.—THE NEW CAPPING-MELTER.

The apparatus consists of a can within a can, the space between holding the hot water. The melted wax and honey pass through the strainer, and directly out of the gate at the bottom.

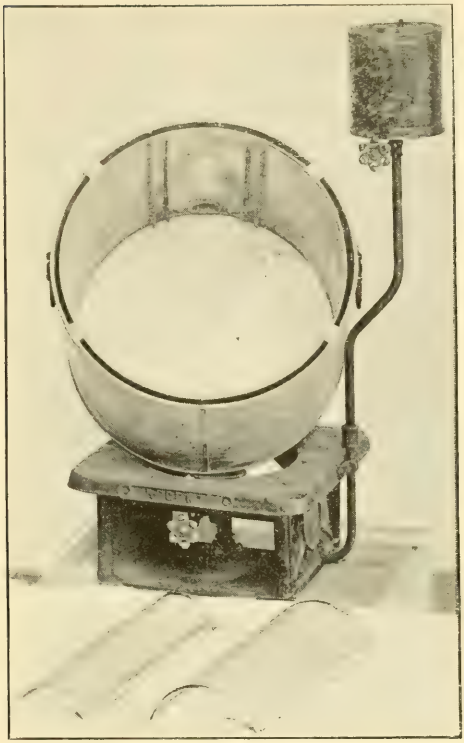


FIG. 8.—THE STRAINERS REMOVED.
These slide loosely in or out to facilitate the cleaning of the can. At the bottom the opening is shown leading to the gate.

were done so rapidly that too much wax accumulated in the pail it could be dipped off the top into a shallow vessel to cool. Another plan is to run the honey and wax into a large can, which, when full, may be set aside and another one placed under the gate of the melter. This method is all right except that it is necessary to have a number of cans standing around in the way containing honey, with an inch or so of melted wax on the top.

The apparatus described in the May 1st issue, page 559, by J. Y. Peterson, is a plan somewhat similar, except that the cappings and honey must flow over a long heated surface, and in our opinion there would be greater danger of injuring the flavor of the honey by such a process. It will be seen in the form we have developed that much of the honey can run out of the gate at the bottom without becoming heated to a great extent by long contact with the hot sides of the can.

When we first showed Mr. Fowls the plan of melting the cappings he was skeptical about having a gasoline-stove, etc., in the honey-house, thinking that it would be inconvenient to have so much apparatus around; but he is now of the opinion that a capping-melter is a great convenience, and that the simple apparatus needed is really less extensive than that which would be needed to hold the cappings in the old way, allowing the honey to drain out. It is certainly surprising how small an outfit is required to do so much work. Besides melting cappings, the double-jacketed can is just the thing for liquefying honey, either comb or extracted. The strainers may be removed, leaving a first-class liquefying-tank, which may be used over any stove without danger of injuring the honey, since the hot-water heat can be so nicely regulated.

## CAPPING-MELTERS.

### An Efficient Home-made Device for Melting the Cappings.

BY HARRY LATHROP.

I have been much interested in what has been published regarding devices for melting cappings when extracting. I doubt very much if any one can succeed in forcing bee-keepers to pay for the right to use a principle which has been common, as the editor mentions, in the operation of the German wax-press.

In my experimenting I began by placing the cappings in a flat-bottom can that had a faucet at the bottom. I placed the can on the stove, but raised it up half an inch or so by placing small pieces of iron under it in order to provide an air-space between the can and the stove. The faucet being left open, and projecting over the edge of the stove, the melted wax and honey ran out into a pail. It worked, but not perfectly. The honey was somewhat discolored from overheating. After reading of Mr. Mercer's plan I had the tinner fix a melting-pan by taking a large stamped tin dishpan, placing one a size smaller in it and connecting them together with braces, leaving an inch space between them on bottom and sides for water. A half-inch copper tube reaches from the bottom of the inner pan through both pans, and projects eight inches. In use, this double pan, with inner space filled with soft water, is set directly on an ordinary cheap gasoline-burner. A comb-rest is provided by means of a piece of pine board run through the handles of the pans. A small nail driven through from below makes a point to hold the frame while uncapping. The stove is kept burning continuously while extracting; and if it does not quite keep up with the work it can be left burning during the noon hour or after the day's work is finished. I can see no danger from leaving it, but be sure that the pail under the spout is large enough to hold the contents of the pan. It works finely, and I see no need of any thing better. The wax and honey run out into a pail, but there is a certain amount of slumgum that will accumulate in the pan. This is kept from running out by means of a piece of tin notched on the under side, set about ½ in. back of the spout. After the pan has cooled, this slumgum can be peeled out in the form of a cake, to be run through the Hatch-Gemmil press if the bee-keeper is so fortunate as to possess one of those desirable machines.

Any machine devised to use any more heat than I have indicated, or any plan to run the honey over a larger heated space, will injure it. The honey must run out freely as soon as melted, and one should use the minimum of heat. We now have no cappings on hand to bother at the close of each day's extracting.

In producing extracted honey we tier up several stories high if necessary, placing seven combs

in an eight-frame body. The combs are mostly sealed when we extract, and very heavy. We cut down to the frame in uncapping, thus securing a large amount of wax and leaving the combs in nice shape for future use. We have always a set of empty or partially filled combs next to the brood-chamber to catch the green honey, and thus avoid getting any of it into the extractor. This new way of getting rid of the cappings I consider a great improvement and one that will come into use rapidly.

Bridgeport, Wis., Aug. 19.

[It may be well to state that both Mr. Lathrop and the editors of GLEANINGS were working on this plan independently until the above article was received in August, showing that Mr. Lathrop had arrived at practically the same conclusions in regard to the plan.

Mr. Lathrop and Mr. Fowls soon saw the importance of allowing the honey and wax to escape as soon as possible in order to increase the capacity of the can, and to prevent any danger of injuring the honey.—ED.]

## OUTDOOR WINTERING.

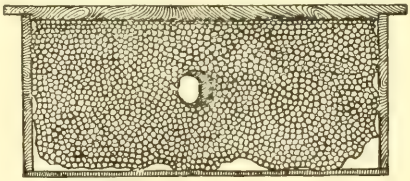
### Holes Cut Through the Combs to Permit an Easier Passage from one Par of a Hive to Another.

BY C. O. FLUHARTY.

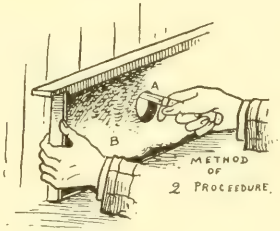
My bees are all in regular ten-frame hives, well filled with solid slabs of honey, sufficient to winter three ordinary hives of bees. However, in years past, colonies died just the same, and I was surprised to find the mortality greatest in the hives that contained the most food. I decided that this was due to the fact that, when once these solid masses of honey became cold, the bees were unable to generate heat sufficient to rewarm them. Then with the appearance of a sunny day dozens of bees would leave the cluster and roam about over the surface of these combs. As night approached and the air became cooler these bees once more drew toward the cluster for warmth; but each time this would occur, numbers of stragglers would become isolated from the main cluster and collect together in the form of compact little knots on the surface of the outside combs, where they slowly chilled to death. In this way I found by actual observation that strong hives of bees positively dwindled down to a mere handful, and, with a sudden fall of the temperature, they would succumb. I was not prepared to cellar my bees, so I tried the tarred-paper plan and found it all right, except that there was too much labor and expense connected with it; so I started experimenting, with the result that I no longer lose any colonies here in my home yard from the rigor of winter, and it is pretty cool here too (17 degrees below zero last winter four nights in succession).

Here is just the plan I have hit upon, and the one I mean to follow until somebody shows me that I am wrong: Late in October, after all the honey-flow is past and Jack Frost has cut down all the flowers, I go into my yard armed with only a large pail and a long slender-bladed knife (the type generally known as a "physician's knife" is best). I have the knife whetted to a razor edge. As it is late in the evening I experience no trouble from robbers, so I at once proceed to open the first hive I come to. This done I remove the frames in the center of the hive one by one, and, after shaking the bees off very close to the entrance of the hive, I place the comb firmly against some very solid object and begin by cutting out a circular piece of the honey 1¼ inches in diameter, directly in the center of each comb, replacing each comb as soon as the hole has been made through it, and putting the circular chunks of honey in the pail. Having cut this opening through eight of the frames of honey and brood (always leaving the two outside ones intact) I close the hive and proceed to the next one.

The bees clustering in a hive are compelled to keep each frame of honey warmed to a certain point all of the time or there will be grave danger of the entire hive perishing, it being very similar to a person lying down to sleep upon a block of ice with another block over him. Once the honey becomes chilled through, most of the heat communicated from the bees passes back and forth over or under the frames, especially over them; consequently I think you will agree with me that a hole through each of the central frames is what is needed to remedy this, and concentrate the warmth of the hive.

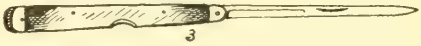


FINISHED FRAME. 1




METHOD OF PROCEEDURE. 2

TYPE OF KNIFE USED.



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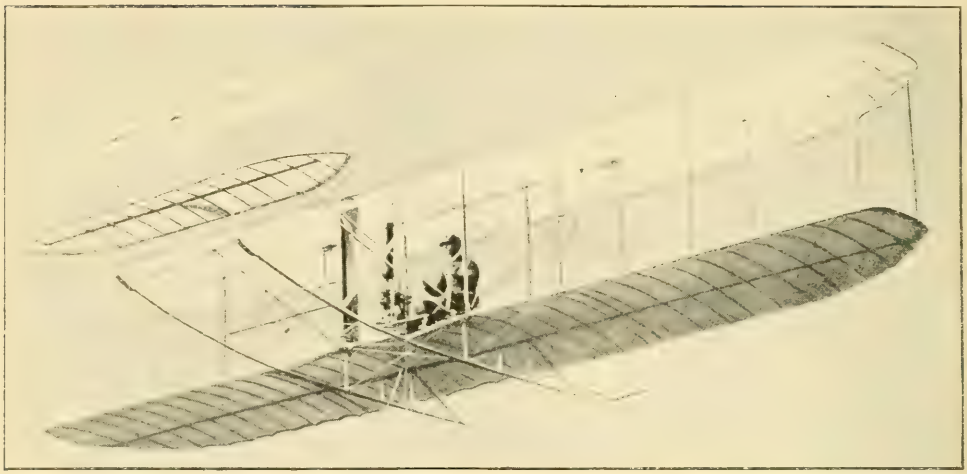
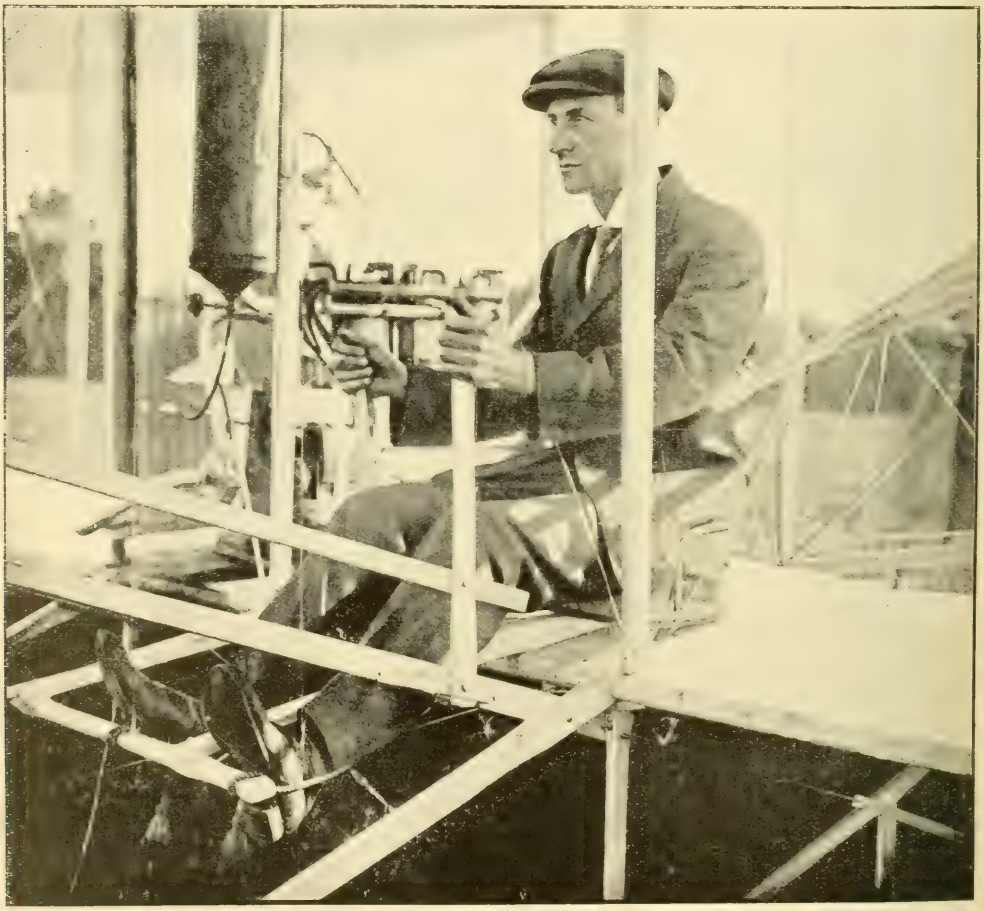
Since adopting this method of preparing for winter I have not lost a single hive of bees. Two years ago I tried this plan at the home yard on eight hives that were not so well stocked with bees as they should have been, and, to my surprise, they came out in better condition than the ones that were stronger in bees in the fall. Last winter I tried the same plan with 35 colonies, with no loss whatever, and this winter I mean to prepare all the colonies in my home yard in this way, as I have full faith in its merits. However,



WILBUR WRIGHT IN ONE OF HIS FLIGHTS, SUCH AS HAVE RECENTLY TAKEN PLACE AT LE MANS, FRANCE, DURING THE PAST SUMMER.



WILBUR WRIGHT AS HE SAT DURING A FLIGHT IN HIS FLYING-MACHINE.

We copy the above pictures from a French paper entitled *La Vie au Grande Air*. The article was written by Wilbur Wright himself.

I would not advise any brother bee-keeper to try a large number of hives in this manner as a first experiment, as the locality might have something to do with the success of the plan. One of the very best features of all is the fact that hives treated as above will come out in the spring with at least three more frames of brood than hives at like period that did not have the holes through the frames. The bees always fill in all of these pop-holes before the close of the apple-bloom.

Sandusky, W. Va.

[The arrangement of having a hole through the center of the brood-combs has been used to a greater or less extent for a good many years. If we are correct, father Quinby away back in the 60's practiced it. The trouble is, it results in the mutilation of combs; and while, as you say, the bees will fill it up again at the next honey-flow, they are likely to put in drone comb. But with the ordinary Langstroth frame we question whether such holes are necessary, provided there be left a bee-space over the tops of the frames. It is the general practice now to use sealed covers, and this will leave a clear bee-space so the bees can go back and forth. If absorbing cushions are used it is the general practice to use corncobs, sticks, or what is known as the Hill device, over the center of the cluster. The purpose of these is to hold the cushion up, leaving a clustering space over the tops of the frames. The sealed cover with a bee-space, the Hill device, or its equivalent, will render such mutilation, in Langstroth frames at least, unnecessary.—ED.]

## GETTING COMBS BUILT SOLID TO THE BOTTOM-BAR.

### More About Splints for Staying Foundation.

BY DR. C. C. MILLER.

J. W. Kalfers sends some questions that he requests me to answer in GLEANINGS, which I proceed to do without repeating the questions.

I have had experience several years with several hundred divided bottom-bars. The chief advantage is that you can very quickly and easily have your foundation securely fastened to the bottom-bar and have an exact fit. But it is no better than to cut the foundation to an exact fit and wax it to a plain bottom-bar, if you are willing to take the trouble. Indeed, I doubt if it is quite so good. Bees are inclined to have a passage between the comb and the bottom-bar, and it's a little easier for them to gnaw such passage with the divided bottom-bar than where the foundation is waxed on a plain bottom-bar.

My bottom-bars are the same width as top and end bars—1⅛ inches. While this width has advantages, I'm a bit suspicious that bees are more averse to building comb down solid to it than to something narrower. Perhaps such wide bottom-bars seem to them like the floor of their dwelling, and they want the floor free to walk over.

Some of my combs are built solid to the frame, bottom, sides, and top, and are a comfort to look upon. But too many have more or less of the foundation gnawed away over bottom-bars, because given at a time when little or no gathering was going on. At such times bees have leisure to make a passage under combs, so as to make things as they, not you, think they ought to be. If rushed at taking care of the honey that is coming in, they haven't time to do any gnawing, and the comb is built down to the bottom-bar. So make sure to give frames to be built out at a time when honey is yielding if you want them built down to the bottom-bar.

When putting in foundation with splints, the foundation is not waxed to the end-bars. There is no trouble in getting the bees to build solid to end-bars if the foundation touches, or if it nearly touches, the end-bars. Indeed, I do no waxing at all, for the up-to-date kerf-and-wedge method of fastening to top-bar is used. Of course, waxing to the top-bar is just as good, but more troublesome. In no case would I wax to the end-bars; but I would have foundation securely fastened at top and bottom.

Even when divided bottom-bars are used, it might pay well to run melted wax along the bottom-bars to make it harder for the bees to gnaw a passageway.

New combs built on splints ought not to be more likely to break in the extractor than wired combs. If any difference, they ought to be less, for the splints are more rigid than wire.

To avoid the trouble of new combs breaking in the extractor, I know of no better way than to favor them a little until they begin to grow old. Put a heavy new comb into the extractor, and turn rather slowly until the honey from one side is perhaps half emptied. Reverse, and empty the second side. Reverse again, and complete emptying the first side. Of course, if you want to take the trouble, you can be still more careful, reversing more times, and emptying less at each reversing.

Marengo, Ill.

## BEE-KEEPING IN THE BRITISH ISLES.

### A Description of the Methods and Appliances Used.

BY JOSEPH TINSLEY.

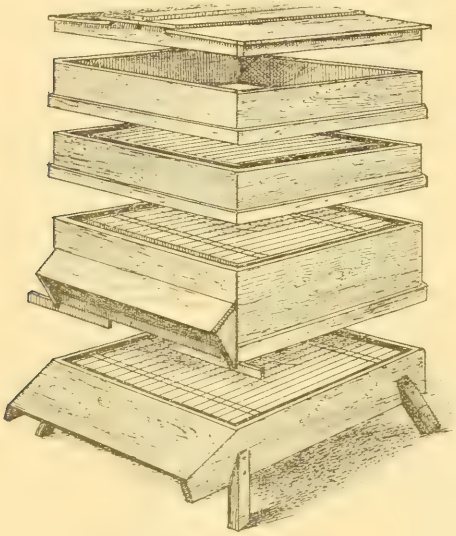
Bee-keeping in the British Isles, which includes England, Scotland, Ireland, and Wales, is carried on under conditions far different from those in America, owing to the climatic conditions. I do not believe there is a single bee-keeper who depends entirely upon his bees for a livelihood; but many combine market-gardening, poultry-keeping, etc., with it. As an illustration showing the fickleness of the climate, take the past season. I am the recognized lecturer and expert in the county of Stafford for the Staffordshire Bee-keepers' Association; and in my trips to inspect hives and give advice I have seen many apiaries totally devastated on account of insufficient honey to keep them going in the months of June and July, which are generally considered our best months for the gathering of the nectar.

I should, first of all, explain that England is divided into 52 counties, or divisions, and in almost all of these divisions there is an association which is composed of a number of bee-keep-

ers. The average membership of the various societies I should roughly estimate at 300; but this will not adequately represent the bee-keepers, as many will not join, although it is to their interest to do so. Well, the advantages are many; but the chief one is to employ an expert to visit and inspect their hives free of cost, and in the winter months to take a lantern and lecture in the outlying districts and thus cause the spread of bee-keeping all through the county. The fee for membership is very little.

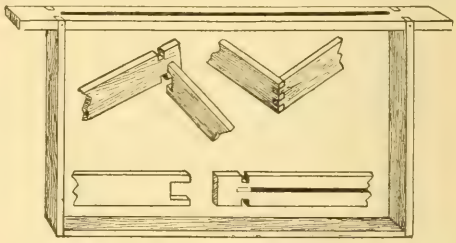
Now, where we are very much in front of America is in the way of holding exhibitions of honey, bees, and beeswax. Almost every county town has its annual flower show, and we endeavor to persuade the various committees to hold also a competition for honey, etc.

Needless to say, this is soon attended to, and the small show continues to grow each year. Our association then offers, for competition, silver and bronze medals, and thus greater interest



THE "W. B. C." HIVE.

is displayed. Then I attend the show, and with the bee-tent, which is composed of mosquito-netting to keep all the bees inside, I give a demonstration on handling live bees, explaining their habits, how to commence the subject, the value of honey as a food, etc. This is generally watched by a very large crowd, and many people take up the business. The exhibition also induces many to try honey for the first time, and people are also able to see the genuine article, and thus they are educated against any adulteration. The county of Stafford, by the way, is comprised of 744,984 acres, and the population is 1,236,919. Of course, some of the other counties are much smaller and the others larger. It should be mentioned that each association is affiliated to the parent body, viz., the British Bee-keepers' Association, which has its seat in London. Here examinations are conducted for the purpose of bee-keepers qualifying for experts. Honey exhibitions are arranged which are open to the whole of the British Isles. These are held in Agricultural Hall, London, for a week at a time, and are visited by many thousands of people. All these methods tend to bring home to the British public the value of honey, and thus it is that the consumption of this article far exceeds its supply, with the result that a large quantity is imported each month from your country and others.



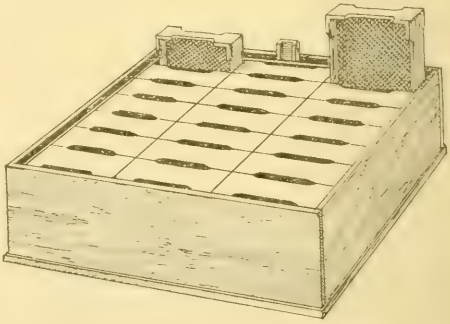
Accurately cut by machinery. A fine pin driven through each joint keeps the frame rigid. The top-bar has a saw-cut for fixing the foundation.

It should be noted that we have three bee-papers—the *British Bee Journal*, weekly; the *British Bee-keepers' Record*, and the *Irish Bee-keepers' Journal*, monthly. In addition to these papers almost every horticultural and agricultural newspaper issued devotes a small column to hints on bee-keeping, and, as a matter of fact, I contribute to several, giving work for the week, etc.

Now that I have described bee-keeping generally in our islands, I will explain the type of hive, appliances, and modes of working.

The hive most used is that known as the "W. B. C.," which is named after the inventor, Mr. William Broughton Carr, the present editor of the *British Bee Journal.*

It consists of separate inner and outer bodies, with a dead-air space all around of 1½ inches. At the bottom of the hive a set of small frames is arranged. This is to prevent swarming, as, instead of clustering, they will fill the bottom portion with honey, and then the bee-keeper can withdraw the box and replace it over the brood-nest, or on the top of the other supers. There is a sliding arrangement at the back; and to prevent the bees from sticking the body down, the bee-keepers put on a small coat of vaseline. It should



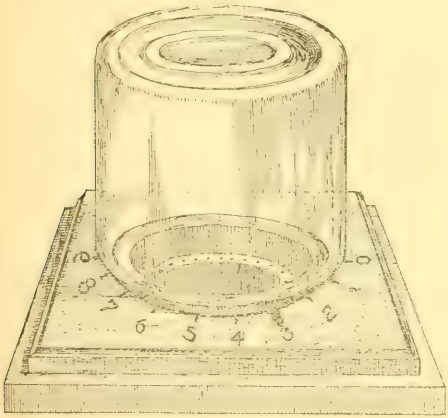
CHEAP RACK HOLDING 21 SECTIONS.

be mentioned that we have a standard hive and frame. The standard hive, as per illustration, consists of a body-box which holds ten frames, with accommodation for any quantity of surplus room over the top of this chamber. The bodies

are all made the same size, and one will fit the other. The size of the brood-frames is as follows: Top-bar, 17 inches; bottom-bar, 14½ inches; width of top, ⅞ inch and 9 deep. These are fitted with adjusting metal ends.

Above the brood-nest, shallow bars or sections are placed. The shallow bar is nearly half the size of the deep bar; but in order to have a thicker comb for extracting purposes the number is reduced to 8 instead of 10. Each set of frames is fitted in the box, which we term a super. In regard to the section-racks, we have two styles—the ordinary rack, holding 21 sections 4¼ by 4¼ by 2, and the W. B. C. crate, which holds the same number, but they hang in a frame. The taller sections do not find such a sale here, and very few bee-keepers have adopted them, the greater demand being more for extracted honey than comb.

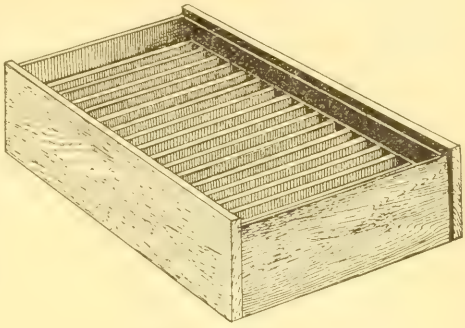
The entrance is narrowed to 2 inches. It should be mentioned that the hive-entrances are sunk into the wood, and just allow sufficient space for the bees. No mice can enter, so we



RAPID SPRING FEEDER.

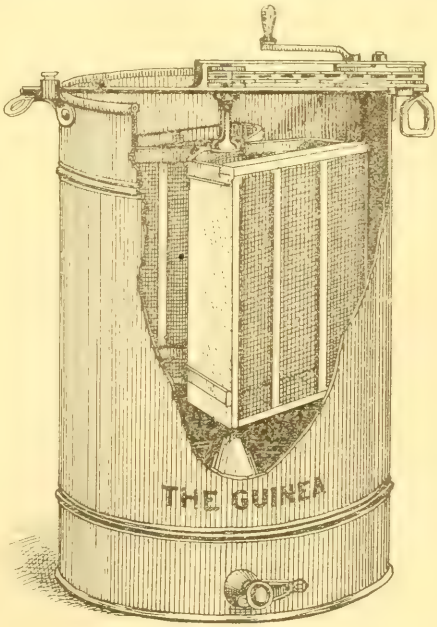
English bee-keepers have no real winter enemies. The bees are fed up about the end of September, and no more attention is paid until the middle of March. By this time the bees have generally consumed all or nearly all of their winter stores; and the bee-keeper, after making an examination on this point, commences to feed them gradually with syrup made from a recipe similar to the one given above, and a small quantity is given to the bees each evening.

This has a stimulating influence on the queen. The amount of syrup is gauged just so that it is sufficient for the bees' requirements, and does not enable them to store any; consequently the queen lays at an enormous rate, and about the middle of April another set of deep combs (10) is given over this brood-nest for the queen to continue her laying. We call this "doubling." Now she has 20 combs to continue her laying, and in another three weeks' time the whole lot will be alive with eggs, larvæ, and pupæ in all stages. The honey-flow commences about the middle of June, and lasts only during portions of the months of June, July, and August, so that, when the flow does arrive, we have the hive teeming with bees. To give an idea of this, our comb averages on both sides about 5000 cells, so that in the 20 combs you have available space for



CANADIAN FEEDER.

100,000 eggs; and, taking off one-tenth for pollen, waste cells, etc., you can thus get an idea of the breeding-ground of the queen. When the flow arrives we often as not have a working force of 80,000 to 120,000. As soon as the honey comes in, the queen is placed in the bottom box, the hatching brood placed in the top, the unsealed larvæ in the bottom, and two or three extra supers given to the colony. The top box, which the brood is still in, is also used as a super as the bees hatch out. Thus Her Majesty is, to a great extent, prevented from egg-laying, and using honey at an important time, because you must take into consideration that every pound of larvæ means many pounds of honey, and you can get larvæ produced by sugar-feeding

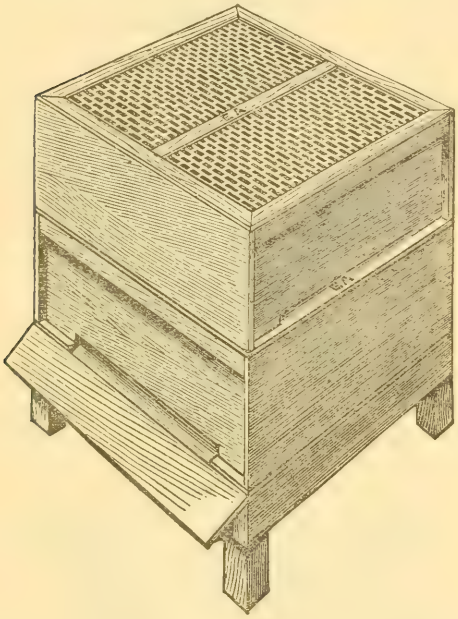



at 2 pence per lb., while the honey would sell at 7 or 8 pence.

Another method is to put two colonies together by making a nucleus of the queen and one bar

of brood. This process gives excellent results, and the little stock will work into a good one by the end of the year. The harvesting and extracting of the honey is done very much as you do it in your country; but of course the quantity per hive is considerably smaller, and a little extractor called the Guinea is the favorite here.

We have three main crops of honey; viz., fruit-blossoms in the spring; white Dutch clover and sainfoin in the summer, and heather in the autumn. The former produces a dark strong-flavored mixture, while the clover produces a flavor and color similar to the sweet clover of America. The heather is the most prized, and seldom if ever

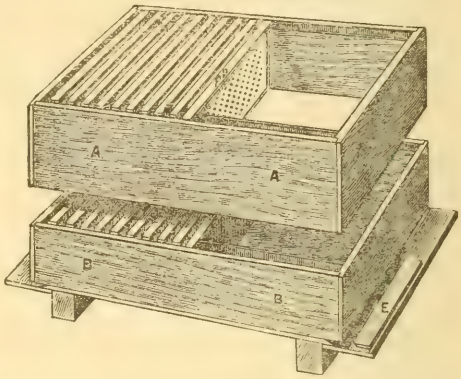


Manner of working two or more queens on the tiering plan, either with one or four entrances. From 1893 edition of *Modern Bee Farm.*

does the price exceed 25 cents per pound. It has a reddish color, and is of a jelly nature. It being impossible to extract the nectar by the aid of an extractor, the combs have to be completely smashed up and the whole lot placed in a press and the juice squeezed out. Very rarely, however, is much of this honey gathered, as the weather is generally unfavorable when the plant is in bloom.

The working of the hive must necessarily be confined to the four seasons. The bees are, of course, wintered on their summer stands, and, with plenty of overhead packing, consisting of carpets, sugar-bags, papers, etc., and with 30 lbs. of honey, they are safely housed against the storms. If the colony has not sufficient of its own honey, then it is fed up to this amount with sugar syrup made as follows: White lump sugar, 10 lbs.; water, 5 pints; ¼ oz. salt; ½ oz. vinegar, and a teaspoonful of napthol beta. The latter is for foul brood. The whole mass is thoroughly boiled, and fed to the bees in a Canadian feeder over the tops of the frames.

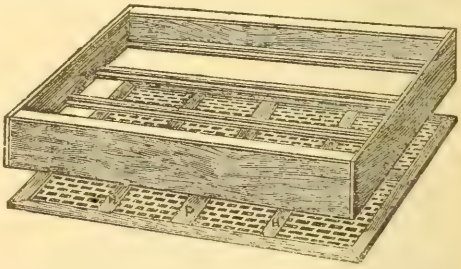
Queen-raising is not practiced to a great extent in England, many believing in allowing Nature to take her course and supersede as required. There are, of course, a few scientific queen-raisers, but nothing as in your country. In the au-




Double two-story stock hive with Wells' perforated divider between. From 1893 edition *Modern Bee Farm.*

tumn many people send wagonloads of hives to the heaths and commons for the heather harvest, and excursions are planned by associations to have a day among them, when useful information is imparted by the experts. The railway companies also have a special rate for the conveyance of such traffic. What we lack is more favorable climatic conditions; and if we had weather similar to yours we could, I have no doubt, hold the first place in the world in the art of bee-keeping.

I should mention, with regard to the dual system, which some of your bee-keepers are advocating, that we practiced that years ago but discarded it. We called it the Wells system, but, of course, the queens were kept apart by means of a perforated dummy.



Queen-excluder, fitted in frame, shown under super crate common to both sides. From 1893 edition *Modern Bee Farm.*

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UNITING WITH SWEETENED WATER.

In uniting two hives of bees did you ever try soaking them with a spray of sweetened water till they were all dosed in good shape?

H. J. WITHERELL.

Glenmary, North Falmouth, Mass.

[This is an old and very common practice. It is no better than a little smoke, and not so convenient. See editorial on uniting, Oct. 1, page 1178.—ED.]

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### A SWARM THAT LEFT THE PARENT COLONY HOPELESSLY QUEENLESS; THE ALFALFA-BLOOM LOUSE.

In Stray Straws, August 15, Dr. Miller questions whether a swarm will leave the parent hive hopelessly queenless, and in a footnote you ask for more evidence on the subject. I had the exception which proves the rule occur in my yard about three years ago. The colony was a strong one, and on finding them queenless, hopelessly so, I gave them a ripe cell from my breeding-queen. This cell hatched all right; and later, when the swarm issued with her, and clustered in an oak-tree, I went on with my work in the yard, being sure they would return to the hive. Imagine my surprise and chagrin to see them, when they broke cluster, depart for the woods.

Recently I noted in GLEANINGS a reference to the damage to alfalfa, or, rather, to the honey-yields from it, by what was termed the alfalfa-bloom louse, and I am wondering if it can be the same insect that seems to be playing the mischief with nectar secretion in the palmetto and other bloom here. This is a very small, brownish-colored louse, which appears in the newly opened bloom, and not only saps the nectar as fast as it forms, but also blights or prematurely dries up the blossoms. It is owing to this pest, I believe, that we have had no really good flows from either saw or cabbage palmetto for the past four or five years. C. S. HARRIS.

Holly Hill, Fla.

### NO DANGER OF BREAKAGE IF STRAW IS USED UNDER CRATES IN WAGON.

Tell Mr. Johnson, page 1139, Sept. 15, that by placing three or four inches of straw under the honey it can be safely hauled on a lumber-wagon. The straw should be three or four inches thick when the full load is on it. I have had lots of experience, and have never lost a section of honey. I. C. BACHTEL.

Cedarville, Cal.

[Straw is cheap, available, and an excellent cushion in the bottom of crates holding shipping-cases, in wagon and car bottoms. It is used very largely in all these places; but its use should be more general yet. The following plan is a good one.—ED.]

### HAULING COMB HONEY SUCCESSFULLY ON A SPRINGLESS WAGON.

On page 1139, Sept. 15, Mr. John H. Johnson asks if comb honey can be hauled safely on a lumber-wagon without springs. Yes, it can if it is crated right. We have shipped thousands of pounds of comb honey to different points, such as Richmond, Va.; Washington, D. C.; Huntington, W. Va.; Ashland, Ky.; Coal Grove, Ohio, and all our adjoining counties, and other places too numerous to mention, and we have never yet heard of a case getting mashed or broken.

Here is the way we pack the honey for shipment. It is first put in the regular 24-lb. shipping-cases, and packed one, two, three, or four cases, according to the size of boxes used. If one has no drygoods-boxes, as many as necessary should be made, each box two or three inches larger on the inside, and three or four inches higher than the cases, to make room for packing material. A box to hold four cases, two tiers high, should be 20 inches wide, 29 long, and 14 high. Pack all around and under the bottom cases with hay, straw, shredded cornhusks, or excelsior—all are good. Have a slatted cover for the box, and strips nailed on ends for handholes. Mark the box-cover "Comb Honey—Handle with Care." Name and address, and it will go safely anywhere on almost any kind of road. I would not advise putting more than four cases (96 lbs.) in one box, and the boxes should never be more than two cases high.

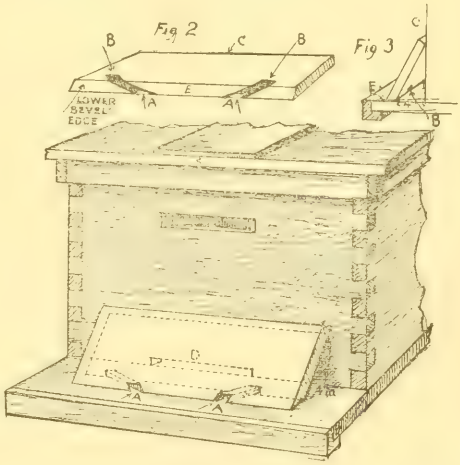
We live 35 miles or more from any railroad, and every thing has to be hauled in or out on wagons, and none of them have springs. We send honey on them to the depot to be sent by express or freight to consumers at different places, and we have always received encouraging reports. Our roads—well, I don't think they could be much worse anywhere, for this is a rough, rocky, and mountainous country.

Grundy, Va. W. J. D. BOOTHE.

[The plan here spoken of excellent. The straw forms a cushion on all sides.—ED.]

### A WINDBREAK FOR SINGLE-WALLED HIVES.

In the last 15 years I have found what I call a windbreak absolutely necessary with single-walled hives, especially in the spring.




The affair is simply a thick piece of wood. The lower edge is beveled, and is provided with slots about 5 inches apart, and cut diagonally across the edge at an angle of 45 degrees. The idea is to direct the air to either side of the entrance rather than straight toward it.

Saltsburg, Pa. G. W. MARTIN.

### A PIT FOR WINTERING BEES.

A year ago I wintered 14 colonies of bees in a pit, and lost only one. The entrance to that one got clogged with dead bees, and they smothered.

I don't know how many colonies were in the cellar; but I did not have as good success with them. Last winter I put 22 colonies in the pit, and all came through finely, and were so strong that I put supers on all of them at the commencement of apple-bloom.

Here is a puzzler to me: One colony that was on the bottom of the pit got the entrance completely covered with dry dirt that got in through a hole in covering them. When I saw them I said to my helper, "Here is a dead one," and I set them down and jerked the cover off. Imagine my surprise. They were alive and all right. I had 79 more colonies in a dry cellar—one that I would call an ideal cellar; but I have lost six, although some of them wintered finely. I intend to put all my coloniesi n the pit next winter. F. W. WALRATH.

Waterloo, Ia.

[Beginners should be cautioned about attempting to winter bees in a pit unless they have a sandy soil or provide good drainage in case of a clay soil. What is more, they should not try the experiment on too large a scale. Pit wintering depends on a good many conditions; and one will have to determine whether the plan is feasible or not for the locality by first testing it on a small scale.—ED.]

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IMPROVING A LOCALITY.

I live in an open pine-woods country, and bees scarcely ever make more than they need for winter use. Could you name some honey plants or trees that would thrive in this climate and soil that I could plant and cultivate so that my bees could get a sufficient amount of nectar so that I could get honey for home consumption?

Simpson, La. ELIJAH WILLIAMSON.

[You would be safe in trying sweet clover in your locality. It does not need cultivation at all, and in time will improve the soil for other crops. It grows very luxuriantly in Louisiana, more especially in the sugar-cane fields. Both in Mississippi and Louisiana it is a valuable forage-crop. Alfalfa grows well in your State. Alfilarella, or pin clover, will probably grow well in your section. You can possibly secure some seed from Arizona of the last-mentioned plant. Buffalo clover is worth trying, as it grows in Texas. If we knew what sort of soil and climate you have we could advise more intelligently.—W. K. M.]

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A FURTHER SUGGESTION IN REGARD TO A HIVE-CONVEYOR.

On page 1119, Sept. 15, Mr. F. G. Marbach's idea of a hive-lifter and conveyor looks pretty good. But wouldn't it be better, instead of using only two posts and a wire csble, to make a track of 2×4 or 2×6 lumber, and have it supported by posts, say every 8 or 10 feet, by means of cross-arms extending 20 or 24 inches from the posts, to give room for a load of supers or hives to pass the posts? Then a traveler similar to a barn-door hanger could be used to run on this track with a tackle or other hive-lifting device attached to it. This would have the advantage over the cable in being more rigid, and could be continued to an indefinite length. It could be run right to the door of the honey-house, so that no wheelbarrow or cart would be needed. If it were necessary to cross a road or driveway a section or two could be made removable, so when not in use it could be taken down out of the way.

Blanket, Texas. A. A. ASHLEY.

[Your plan is perfectly feasible, and perhaps better, but more expensive. It would have the advantage that the track could be curved, and this might be very important in some cases.—ED.]

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PROPOLIS FROM WAX.

A few years ago I had a cake of bright-yellow wax lying out in the yard under some shade-trees. One day I noticed some bees on this wax. I watched them a while, and found that they were gnawing on the wax and putting it in their pollen-baskets. As nearly as I could tell there were only six of them. I looked over the hives in the yard, and found that those bees were daubing up a crack between the cover and hive-body on a certain hive; and, as nearly as I could tell, those few bees were the only ones working on this cake of wax. I watched them perhaps half an hour, and saw that, during their manipulation of the wax, it got darker, and almost resembled, according to my eye, the propolis on the hive in other places. Some time after that, having occasion to open this hive, I noticed that the wax those bees deposited was the genuine stuff called propolis, in color, stickiness, and smell; and ever since that time my belief has been that propolis is manufactured by the bees out of wax mixed with some substance to change it chemically. That the bees never gather any substance to use as propolis I will not claim. During the summer and fall the mesquite exudes great quantities of a gum we call mesquite wax. We gather it and dissolve it, and make a very fine glue. Now, I ask you, why do not the bees gather this glue? I have never seen any bees, nor have I ever heard of any one else seeing a bee, working on this gum. If our chemists hunt for it they may find what the bee deposits and mixes with the wax to cause that change. J. A. RUFF.

Fort McKavett, Tex.

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VERTICAL WIRES AND HALF-INCH-WIDE STARTERS.

Will you please state the objections to wiring frames perpendicularly by driving the right length of staples into top and bottom bars and imbedding half-inch strips of foundation on to the wires? The objections to wiring, unless you use full sheets of foundation (which I consider too expensive), are that the bees often fail to get the wire in the septum. This makes depressions in combs, with the wires in sight. Now, if this is an old idea will you please state the objection? I don't see why it would not be a big improvement over all other methods of securing straight combs. G. E. PHILBROOK.

Lakeside, Cal.

[This plan of wiring is one that has been and is used to a considerable extent. It takes a lot of time to prepare a set of frames in this way, however. We don't quite understand whether your narrow strips of foundation are to run vertically or horizontally. The former would hardly give satisfaction.—ED.]

# OUR HOMES

By A. I. Root

Gather up the fragments that remain, that nothing be lost.—JOHN 6:12.

In Our Homes for October 1 I spoke about the importance of having a place for putting our money where it will be safe, and right at hand when needed. So many kind words have come for that Home paper that I am convinced of the great need of a postal savings bank; and I wish to say something in this present Home Paper about teaching the children the importance of saving their pennies instead of being continually looking out for some way to get rid of them as fast as they are earned. But before going into this I wish to discuss a little the way in which the average child is in the habit of investing his earnings.

In all of our towns and cities—yes, and even in our country stores—there are a good many attractive things to catch the children's nickels, and not only the nickels, but even the pennies. Now, so far as toys and playthings are concerned I have nothing in particular to say against them. Very likely some children, especially where there is but one child in the family, have too many playthings. This one child does not value them, because, before he has exhausted or got tired of any one plaything, he gets another. What I wish to refer to especially here is encouraging a child to waste his pennies (or worse than waste them), in buying things to eat when he is not hungry; and not only that, encouraging him to be constantly eating between meals. T. B. Terry's vigorous teachings are beginning to wake up a good many people. Hundreds if not thousands are finding a great improvement in their health by taking no food of any kind except at the regular mealtime. Confectioners are continually planning and studying up something new to catch the pennies. A while ago it was a ball of candy on the end of a stick. Every child had to have one. The manufacture of chewing-gum has become so great a business that quite a number of gum-makers are millionaires. If the gum contained nothing but what exudes from the spruce-trees, such as may be gathered in the pinery woods, it would not be particularly objectionable, perhaps. In fact, I have heard that chewing gum is an excellent means of cleaning the teeth. But when we find combined with the gum variously flavored candies to tempt the taste and appetite, it becomes, I am sure, a serious meance to health. Ice cream used to be 10 to 15 cents. It is now offered on the fairgrounds for a nickel in little cones; and in various cities it is hawked about the streets in penny packages. And not only ice-cream but various ices. In Havana, Cuba, I used to be quite fond of pineapple ices and banana ices for only a penny. I bought them for curiosity; but when I found they used spoiled pineapples and bananas to make penny ices I cut off that sort of investment. I think that some of the stuff made me sick before I inquired into it. Who can tell how much money is invested at ice-cream and soda fountains? I have not bought any myself for years, because I found out years ago that it did not agree with me. But I often stand near these fountains on a hot day and look at the string of customers, old and young, that sometimes crowd around the vender, and often have to wait their turn. I often see boys and girls who work at our establishment, and who get only small pay, throwing away their nickels at these soda-fountains. Perhaps some of you may say that if we get rid of the saloons we ought to be satisfied without commencing to criticise the use of ice-cream, soda, and soft drinks in general. Some of you may also urge that physicians tell us growing children *need* sugar—that they have a natural craving for it. Granting all this, I am sure it will be better for the child as well as for the adult to get the sugar that is needed when he has his regular meals, and in a shape where it will not cost any thing near the amount of money that it does to buy it of the confectioners and druggists. I feel certain the long list of diseases that afflict our people at the present day are caused largely by using more sugar than we need, and especially taking it between meals, instead of at the regular appointed time. If I should suggest that *honey* is the most wholesome sweet that can be used you would think I am prejudiced because this is a bee-journal. You know, if you remember, that I am starting out to live *a hundred years.* I am not really sure I shall be able to write for GLEANINGS when I get to be 95, but I will try to do so if God lets me live so long. Well, one aid to our living to a good old age is to be by cutting off cane sugar. I have not eaten a spoonful of sugar in a year, and very little for several years. I have lost my taste for it. It makes my food unpleasant to have it sweetened. Mrs. Root makes two kinds of apple-sauce—one with a little sugar in it, and the other with none at all; and so with other kinds of fruit. The sugar does not agree with me. But the sugar in sweet fruits of any sort does not seem to disagree with me at all. Last night I must have eaten toward a dozen Paradise sweet apples. They were not very large, on account of the dry weather. Now, I suppose so many sweet apples just before going to bed would make most people sick—I think mainly because they are not in the habit of eating apples every day as I do. To tell the truth, I ate more than usual last evening just because I wanted to demonstrate how nicely sweet apples agree with my digestion. I felt better than usual, if any thing. There was no bad taste in my mouth in the morning, and I felt unusually well all the forenoon.

Now, dear friends, I have mentioned all this to try to convince you that it is not only wasting money but it is not conducive to health to use candies, ice-creams, etc., and drinks, especially between meals. I use lemonade quite freely, and I greatly enjoy it, but always without any sugar.

Now, with all this preface I wish to tell you something the W. C. T. U. has recently started in the way of encouraging children to save their money, and at the same time save their health. My sister, Mrs. E. J. Gray, of this place, has all her life been connected with the work of the W. C. T. U.; and in regard to this new phase of her work she writes the following:

DOMESTIC DISCORDS.

A very prolific source of domestic trouble is the use of the family pocketbook. If the young wife has not had discipline and

training in the use of money she is likely to imagine that a reasonable weekly allowance will buy almost every thing; and before the week is half gone she will find her funds exhausted and be obliged to ask for more or go in debt, hoping that the next installment will help her out. After getting hopelessly in debt the husband loses confidence in her ability to use money, and so decides to take things in his own hands, doling out twenty-five or fifty cents to her when she *asks* for it. Or, on the other hand, if the man himself is improvident, using this joint means for cigars and other unnecessary things while the absolute necessities of the family are not provided for, a spirit of contention arises, and, not unfrequently, it results in a case in the divorce court. The great lack in both of these cases is in early training in economy and thrift. The system of school savings banks is an ingenious method of instilling into a child's mind correct ideas of the value of money. The exercise of calling the roll Monday morning and receiving the pennies and nickels stimulates the whole school to learn ideas of thrift and economy. Habits of self-denial, and controlling the appetite, are thus formed that will go with children through life. Abundance of testimonials might be given where this work has been in successful operation. It should be introduced in all our public schools, particularly in the primary and intermediate departments.

So many devices are now used to induce children to spend their pennies that there is need of special training. The latest device we have noticed is a slot machine with a glass case containing salted peanuts. A penny in the slot will bring a small handful of peanuts. But a little white bead is mixed with the nuts; and if you are so fortunate as to get a bead with the nuts you can go inside and get five cents' worth of candy by producing the bead. A group of children were eagerly trying their fortune. Not only spendthrifts but gamblers were thus being trained.

For further information regarding the system of school savings banks, send to Mrs. S. L. Oberholser, 3509 North 22d St., Philadelphia, Pa., National and World's Superintendent of this department for the Woman's Christian Temperance Union, or to Mrs. E. J. Gray, Medina, State Superintendent for Ohio.

She has also handed me quite a string of testimonials from different public schools in regard to how the school savings bank is working. I have room for only one of them.

About two years ago I gave you quite an interesting story in these pages in regard to the way in which Mrs. Florence Richards, of Leipsic, O., made their town dry. It was the story of how she, a woman, almost alone, succeeded in getting rid of the saloons in her town. This good woman sends the following report in regard to their own school:

Mrs. Florence Richards, in writing of the system in the Leipsic (Ohio) public schools, says: "The system has worked a revolution in our schools, and our teachers say the scholars are more easily governed, more studious, and that the whole moral tone of the school has been heightened. Our homes have felt its salutary effect. We are having our house painted, and the painter said to me to-day: 'My boys are starting bank accounts, and it is wonderful, since they began, how little gum and candy we have had around the house. One of the boys said to me, as he started to school last Monday with his pennies for deposit, "Papa, if we can get along without our gum and candy, couldn't you get along without your tobacco?" and I said, "Yes, and I will." I have for the last ten days put my tobacco money in a box, and I have saved $2.50 in that time.'"

In another column I have talked to the boys about saving their pennies to buy copper wire and batteries. I can well remember the time when the newsboy Edison began to startle the world with his wonderful experiments. He had had but very little money, and he needed it so badly for chemical apparatus that not a copper was wasted. I have been watching him ever since boyhood (for he lived not far from Medina) much as I have been watching the Wright Brothers in their experiments. At one time Edison happened to be in a strange city, out of a job. He went into a telegraph office and asked them if they could not give him some kind of work. He was plainly clothed, and this, together with his boyish manners, made some of the city clerks think he would be a good victim for a joke. They were just at that time in need of one of the best experts—a man who could handle twice the amount of business that any ordinary operator could. They told Edison that he might sit down to the instrument and see what he could do with it. Then they piled the business on to him faster than any living man, as they supposed, could handle it. When our young scientist caught a glimpse of what was coming he put his hand in his vest pocket. Was it for a piece of tobacco, think you? Not any tobacco for young Edison. He pulled out a piece of *spruce gum.* I suppose he had gotten into the habit of chewing gum; but it was the genuine, right from the spruce-tree, and it was not sugar-coated or flavored. These fellows who put the job on him soon found the "joke" was on themselves instead. This green-looking boy could do the work of any two men that had ever been in their office. Electricity, and especially telegraphy, at that time was his great passion. He was the boy who saved his pennies; and not only that, he saved his precious moments. The world was so full of wonders, especially those that spread themselves out before his eager gaze, that he scarcely took time to sleep. Not an hour ago I picked up a paper that stated he is probably worth at the present time 25 millions of dollars. He has a home at Fort Myers, Fla., not far from our home at Bradentown. The paper further stated that he says he is now going to quit work—that is, he is going to quit working for any thing except "just for the fun of it." One of his latest schemes is to make houses of cement; and when he gets his plans perfected he expects to make an entire house, ready to live in, in about three days, and a better and more durable one than the world has yet seen.

Now, friends, if this new project started by the W. C. T. U. is going to encourage our school-children in starting a bank account instead of wasting their pennies and injuring their health, I think it may prove to be a God-send to the children of the new year now before us—1909.

By way of explanation I clip the following from one of the printed circulars:

A deposit list, copied from the teacher's roll-book, must be sent monthly to the bank in order that the accounts of the scholars may be individualized.

When a child has deposited $1.00 he is given a bank-book, and becomes, through the school, a regular patron of the savings bank. When the deposit reaches $2.00 or $5.00 (as the bank may elect), it draws interest at 3 per cent or more.

The pupils are allowed to take their bank-books home for a day or two at the close of every month. The family interest aroused by the monthly examination of these bank accounts has in many instances, already noted, had telling effect, and older folks have learned lessons in thrift through their children.

Deposits will be received every Monday only, at the morning session, by the teachers of each school. The amount will be delivered to the principal, who will deposit it in the ——— Savings Bank in the name of each depositor.

One cent or upward can be received by the teacher. When a pupil has a deposit of $1.00 or more, a bank-book will be given, free of charge, from the bank.

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## THE WRIGHT BROTHERS AND THEIR FLYING MACHINE UP TO DATE.

A few days ago a prospectus of the *Scientific American* was placed on my desk; and in enumerating the many things that journal has done for the world I was surprised to see the broad claim made that theirs was the *first* publication to announce that the Wright flying-machine was a success. This statement vexed me a little because of the fact that GLEANINGS IN BEE CULTURE announced it to the world a long while before the

*Scientific American* had taken any notice of this wonderful invention. In our issue for March 1, as far back as 1904, p. 241, I gave the first intimation of what was going on here in Ohio in the way of flying; and at frequent intervals during 1904 I visited the Wright Brothers at Dayton, Ohio, to witness their preliminary experiments. In our issue for January 1, 1905, I gave the result in detail, occupying three or four pages of GLEANINGS. Just as soon as an impression was off the press I mailed a copy of it to the *Scientific American*, and sent a letter accompanying it, thinking they would, of course, be glad to give it a wider publicity than we could give in our comparatively little journal. Well, what do you suppose happened? Not a peep, not a word of thanks for the trouble I had taken to give them full particulars of what I had been an eye-witness. Do you suggest that perhaps they did not get my letter with the proof-sheets? They *did* get it, and promptly asked me for *another* copy of our journal. Not a word of thanks then, and no mention of the Wright Brothers until more than a year afterward. If they have any thing to say in defense of their way of announcing inventions as they come up, we shall be glad to be corrected. In our issue for Jan. 15 I gave some further particulars with a cut of the gliding machine. At that stage of proceedings the Wright Brothers would not permit a photo of the complete apparatus to be given in print, for they had not fully secured their patents.

On page 48, Jan. 1, 1905, I gave my reasons for having kept back some news of this wonderful discovery as long as I did. Permit me to mention here that as soon as I had *permission* to give my write-up of the machine I sent the Wright Brothers a check for $100; and, in fact, I would have been willing to send $500 for the privilege of announcing to the world this wonderful invention. They thanked me for the check, but it was promptly returned, thus indicating that those two young men were not working altogether for the almighty dollar, but, rather, that they may benefit humanity.

While I am about it, permit me to say I am also a little surprised to see in the *Technical World* for November the following statement:

> In June, 1906, the *Technical World Magazine* announced the success of the Wright Brothers, of Dayton, O., in the private tests of their wonderful aeroplane. The *Technical World Magazine* was the first publication to accord full credence to the Wright Brothers' claims, now so abundantly made good.

And the *Technical World* admits they did not give it to the world till 1906, while GLEANINGS goes back to March, 1904, with frequent mentions of what the boys accomplished step by step until the present.

At the time I gave my write-up there were several points in regard to the machine that I was not permitted to mention; but since these various features are now being fully discussed through the various periodicals I presume I am at liberty to tell what I know about it.

The first was an apparatus for putting a stronger curve on the tips of the wings when rounding a curve. Second, a device that would enable the machine to spring up into the air as a bird does in starting. When I first visited them they were obliged to run the machine along a single rail for, I think, 60 or 70 feet, in order to get up sufficient speed to "climb into the air." This long track had to be moved so as to face the wind every time the wind changed, making considerable labor for each successive experiment. I suggested wheeling the machine up on to a platform over the little building where it was stored, so as to get up momentum by running down hill. After I left them I figured out in my mind that a derrick from which a weight could be dropped something like a pile-driver in order to get up a good momentum in starting would be a good plan. I was so full of this idea that I made a second trip in a short time, and was astonished as well as pleased to find they had got hold of the same thing and had it in practical operation. They had a lot of iron weights, about the size of a small grindstone, with a rope running up through the hole in the middle. By hitching on more or less iron weights they could get up any desired speed. I think they used fully as much as 1500 lbs. for the experiment at Dayton. This weight dropped 15 to 18 feet, and by a system of pulleys to magnify the *speed* and *distance*, the machine was given a sudden impetus that threw it up into the air a sufficient height and with sufficient speed to start the vehicle for flight. The device was a complete success from the start.* I think the great wide world has had no intimation of this starting-device until the present summer. As I see pictures of it in the various magazines just now I suppose I am at liberty to describe it as I have done above.

I have from the start, perhaps, been more sanguine in regard to the value of their invention than even the Wright Brothers themselves. I may have forgotten; but if I am correct I think it took only little if any more gasoline to go a mile with the flying-machine than it does to run my automobile that distance; and this wonderful advance and achievement over all other methods of locomotion is that they are without any expense for tracks, macadam roads, or bridges. Right in sight of the bicycle-factory where these two men made their flying-machine is a bridge that cost, if I am correct, half a million of dollars. What will it be worth to the world to be able to go in *any* direction and any distance, *independently* of bridges? What do you suppose all the bridges in this world have cost, to make no mention of roadways and railway tracks and gradings?

In our last issue I said I hoped that Wilbur Wright would not be persuaded, *just now*, to attempt to cross the Channel or any other large body of water. I notice by a clipping from the Cleveland *Plain Dealer* of Oct. 19 that my good friend Orville backs me up in what I have said. See this:

> ORVILLE WRIGHT SAYS HE WOULD ATTEMPT NO FLIGHT OVER ANY HIGH OBSTACLES.
>
> The idea of flying over cities in a machine like the one with which he made his successful flights at Fort Meyer does not appeal to Orville Wright. He would not be willing to undertake a trip of that kind. The work he did at Fort Meyer was as hazardous as he is willing to perform.
>
> The doctors attending the aviator are permitting him to see visitors, and the expression of opinion here set down is the first utterance from him by way of criticising the hopes of aerial navigation created by the work done in Paris and Washington.
>
> He is afraid to trust any motor he has ever built or seen to the performance of such a task as has been suggested by the optimists who have expressed the opinion that Wilbur Wright should accept the challenge to cross the English Channel in his machine

* It really reminds one of firing a man into the air out of a cannon when the trigger is pulled to let that big weight drop.

and continue across the country over cities and other obstacles requiring the aviator to go high into the air. The unreliability of the motor is what he fears.

Please notice in the above, he only says he will not just *now* "trust any motor he has ever built or seen;" or, in other words, at the present stage of proceedings it would be exceedingly unwise to fly over any but the most favorable territory on account of the possibility of accidents. Should any thing happen to the motor, we have found by repeated tests that a safe landing has usually been made over any farming territory; and a machine will alight easily and safely on any sort of farm crops without much risk of harm, with the stout runners I have described, gliding along on the surface of the ground without much risk of damage to the machine.

Of course, many more experiments will have to be made while the machine goes through an evolution something similar to that of the automobile.

I noticed this morning the statement made in the morning papers that Wilbur Wright said a flying-machine need not cost more than $300 when a considerable number of them are made at a time with adequate machinery. I think *we* could easily make such a machine for less than $100, aside from the cost of the engine, provided fifty or a hundred are built at a time. Whoever owns the patent, will, as a matter of course, need a pretty good profit in order to recompense him for what he has invested in the patent, and also for the investment in the necessary factory and equipment for building flying-machines.

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SOMETHING ABOUT ELECTRICITY AND THE PROGRESS IT HAS MADE IN THE LAST FIFTY YEARS.

Just a few days ago my life was brightened by meeting an old schoolmate whom I had not seen for toward fifty years. When we were boys a dozen years old we were both greatly taken up with chemistry and electricity. A kind teacher gave me a book entitled "Conversations on Chemistry," and my schoolmate, Corwin Purdy, got out of some old garret a book called "Comstock's Chemistry;" and didn't we two boys have fun with our chemicals! We made gunpowder and fulminating powder, and finally hydrogen gas with which we filled soap bubbles, but they went up so rapidly that we hardly had a chance to touch a match to them. Finally we mixed common air with the gas so as to make an explosive, and this, also, made them go enough slower so we could catch them with a lighted match. When he made a new discovery he would run across the valley over to our house on the hill and tell me to "come quick" and see his new invention. In the same way I used to run for him to come over to our house. When we got on to electricity the matter was rather deep for us. The science was then in its infancy. I made a galvanic battery; but it did not work—that is, it did not produce an electric shock as I expected it would. He tried it on another plan, making a "galvanic pile" of sheets of zinc, copper, and cloth. The cloth was moistened with a weak acid; and, oh how delighted we were when it not only gave a faint shock, but produced sparks that were plainly visible after dark! When I went home I wound some copper wire around a little rod of iron and hitched my wires to my battery; and, lo and behold! it *did* work. The iron picked up nails and let them drop; and after I had spent all of my hoarded pennies for wire I made a little telegraph apparatus.

When I was about fourteen, however, my father moved away from Mogadore, Summit Co., Ohio, and I lost sight of my friend Corwin. When I came to Medina I kept on with my electrical experiments, and soon had a revolving magnet exactly on the principle of the electric motors of to-day. I also succeeded in exploding hydrogen gas with electricity, thus rudely outlining the gas-engines that run automobiles at the present time. When I got my little electric motor so it would run a miniature home-made sawmill I started out "giving lectures" around at country schoolhouses; and my old friend W. P. Root, who is taking down these notes for me, remembers coming, with his father and older brothers, to one of my lectures at Sharon Center, Medina Co. I think that, in that boyish lecture, I predicted that electricity would some time supersede steam as a motive power for travel. I do not know but I told them that steam might be superseded in four or five years. My only mistake was in not multiplying my figures by ten, and saying *forty or fifty years*. Yes, it may take another fifty years yet, to fulfill fully my prediction. At that time of my life I was reading the *Scientific American*, and ransacking the world as well as I could for all the books on electricity. It was not very difficult, as there were only a few at that time.

Now, what prompted this paper was the sight of my old friend Purdy, transformed from a black-eyed, black-haired youngster to a white-haired and white-bearded man of almost seventy. Friend Purdy is still not only alive, but on the alert to know the new things that God is revealing to us through chemistry and electricity. Fifty years ago a galvanic battery, to do any sort of work, even in the way of experiments, cost four or five dollars, and it would run for only a few hours, and then the zinc plates had to be washed off and a new solution prepared. Now we have batteries of considerable strength that cost us only a few cents, and yet they will not only run for months but even for years. The electric clock in our bedroom has been running by batteries that are now over a year old, and I do not know how much longer they will last. After using a set of batteries in my automobile for several months until they were so far run down that they did not give good service, I found one of the exhausted cells would still ring a little doorbell very well; and just to test it I left the bell ringing in my automobile-house. I think that, after it had been running for two days, and was still making a faint jingle, somebody who slept upstairs in our house several rods away was found poking around in my automobile-house. When I came up to question the intruder he said he was trying to see if he could not stop that "everlasting clatter" that kept them awake nights; and I believe this run-down battery kept that little doorbell going for something like *three* whole days and nights.

By the way, in our last issue I spoke about battery-testers; and one of these cheap doorbells makes a very good battery-tester except that it is

almost too large to put in your vest pocket like the one we advertise. Fifty years ago a U-shaped electrical magnet covered with insulated copper wire cost about $2.50; but now you can get a much neater one from dealers in electrical supplies for two *dimes* and a half; and a dry battery to run it costs another two dimes and a half or even less. Insulated copper wire, a few yards of which took all the pennies I could scrape to buy, is now kicked about under foot wherever electrical people are working. I always scold, however, to find it around our premises, because the sight of it reminds me of how badly I wanted just a little in my boyhood days, and yet could not afford to buy it. Even away down in Florida, after the men did the wiring on our cottage for the electric lighting, they threw the remnants out in the dooryard. Of course, when they sent in their bill they charged me for this useless wire that they threw away; and every time I see one of these little dry batteries, that can now be had for fifteen or twenty cents, I am lost in wonder to think of the energy that is stored up in that little metallic can, and which will be given out at the bid of man to do important work, not only announcing that somebody wants to see or talk with you, but to carry your message miles away, or light the gas to push your automobile, when there is an emergency call that demands your presence somewhere, at the rate of almost a mile a minute. It is the developments of chemistry that have given us this wonderful power. The fables in the Arabian Nights that Corwin and I used to read and laugh over have come to pass; but *truth* is *greater* than fiction. The author of the Arabian Nights thought he was telling a tremendous yarn. But he did not make his yarn big enough. He did not know what was coming fifty years ahead.

And now I hope, dear friends, that there may be other boys (or may be *girls*) who are as crazy as Corwin and I were in olden times to know more about the wonders of chemistry and electricity. Such a boy is more likely to be found in a home where there is not much money; and I want to whisper to him to gather up those scraps of copper wire that men throw away, and then go around to the automobile-shops and ask for some of the discarded batteries. I wrote to the factory where these batteries are made, and asked them what they would give for the old cells. They said they were hardly worth the cost of transportation and pulling to pieces; so now they are kicked around under foot like the copper wire.

A few days ago one of our men had a wheelbarrowful, and was going to dump them into the pond. I stopped him, and found, by using a battery-tester, that some of them had recuperated so that they would do very good service. You let a dry battery rest a while and it will rest up, like an old man. The reason why they last so long in ringing doorbells is because they have a chance to rest up between the calls. After this boy has gotten a wheelbarrowful of dry batteries or cells, let him hitch them up with some of these bits of copper wire. If he manages it right, this series of batteries will not only ring bells and run machinery, but it will light electric globes and give a very good light if it is rested often enough. The amount of light or work you get from such a system of batteries will depend on the number you have and how good they are. The batteries can be put down cellar or in any out-of-the-way place, and you can carry the wires wherever you wish. I can not begin to tell you, dear friends, how much this knowledge of electricity and chemistry has been worth to me through a busy life. I told you, a little time back (see page 1025, Aug. 15), about a man who had canvassed our town of Medina, and sold a carload of gasoline-cans. He said that gasoline put into those cans, and kept there for twenty minutes, would become non-explosive in consequence of the electrical action of the apparatus in the can. I was able to tell him at once, from my knowledge of electricity and chemistry, that he was undertaking to rob the people. The carload of cans came here to Medina; but before our people had handed over their honest money we exposed him in our county paper. If you have a boy who is interested in studying up these things, by all means encourage him; for God alone knows how much he may be benefited by this knowledge when he gets to be fifty or sixty years old.

# HEALTH NOTES

### ROLLED WHEAT—CAN IT BE MADE AT HOME?

I am very much interested in the use of wheat, in the raw state, for human food. I wish you would let me know, if possible, how the wheat grain can be made, by domestic means, like the rolled wheat which is sold at the groceries. Or are there any simple devices in the market for this preparation so that any one would be able to make the rolled wheat from the grain at home? Any advice regarding this matter will be welcome.

San Francisco, Cal., Oct. 8. J. FINBURD.

Friend F., I have experimented somewhat in regard to this matter. Any of the various coffee or spice mills will crush and grind the wheat so it can be masticated almost as well as the rolled wheat, and perhaps quite as well. In regard to having the wheat perfectly clean, perhaps it had better be hand-picked, and it might be well to have it washed or scoured. Your wife can doubtless manage this. For a small amount, grind it in any kind of coffee-mill, but I would not try to grind it very fine. If some of the particles are too coarse to chew up readily, sift them out with a flour-sifter, such as women ordinarily use. Eat the dry ground wheat food with a spoon, using butter enough so that it will masticate nicely, and you will get the full benefit of the rolled wheat and save all the price of the middleman, the expense of fancy pasteboard packages, printing, etc. It does seem to me as if the average farmer ought to be able to make a short cut from the grain that grows in the home fields to the ground wheat placed right on his table. Of course, we want the very best quality of wheat; and I do believe that poor people with a little land could grow a little patch of wheat in their own garden; and when it is just right to use, say about the age of green corn, it is one of the most delicious and nourishing foods I ever tasted. It is some trouble to rub the grain out of the heads and blow off the chaff. If we had some cheap machine for doing the work I do think "green wheat," just out of the milk, might be as great a dish for the whole human family as "green *corn*," that is always in the market at the proper time, and afterward put up in cans.

GRINDING WHEAT IN A COFFEE-MILL — MORE ABOUT IT.

A year or so ago I was out roaming through the woods picking up some chestnuts and walnuts—something I always delighted to do. Getting the smell of autumn leaves and crisp autumn air, gives life and vigor to a shop or store creature. Well, as I was strolling along, not noticing that I was quite near a barn, the owner seeing me came down to order me off the place; but seeming to recognize me he asked me up to the house. We sat on the veranda for some time, and talked. Somehow our conversation turned to this subject of wheat. The lady said she and her brother lived on this almost entirely—cracked wheat and cream. She insisted on my trying it, so she brought out a bowl of cracked wheat and cream. Talk about your patent breakfast foods! I never tasted any thing like that for fine flavor. On inquiry, they said they bought a bag of wheat from their grocer, and just ground it, when they wanted to use it, in a common coffee-mill, pouring cold water on it and letting it stand on the stove, so as not to burn, for from three to four hours. If you want to eat a royal dish, just try it. Take your coffee-mill and get all the coffee out of it. Rinse it out with warm water, and have it dry, otherwise you will find it hard work to grind the wheat. Use nice clean wheat, cracked as we used to crack corn, and cook it a good long time. In fact, you can not cook it too much. Now serve it with nice cream and a nice baked sweet apple cut up with it. I don't believe there is any thing a weak stomach will digest any better; and as for cathartic pills, you will never need them. This seems to be the most natural food man can eat—simple to prepare, and satisfying to appetite.

I immediately ordered half a bushel of wheat and used up the lot.

I find I don't care for a meat diet as much as I did in my younger days. E. VANDERWERKEN.

Stamford, Conn., Oct. 29.

The above little story illustrates some recent experience of my own. While in Detroit attending the convention I went into a dairy lunch to get my breakfast. When I found some of my shredded biscuit and a bowl of nice milk I felt glad; and when I saw a large luscious baked apple right beside them, with some nice fresh cream, I felt gladder still. I made an excellent breakfast, and what do you think the bill was? A nickel for the shredded biscuit and the little bowl of milk, and another nickel for the baked apple and cream. It was all the breakfast I wanted, and I held out until noon very nicely.

In regard to grinding wheat in a coffee-mill, a friend suggests that a large coffee-mill, such as may be found in most of the city groceries, will grind a pound of wheat in a very few minutes; and he says the pound of wheat ground in this way is not only equal to any of the wheat preparations put up by the millionaire manufacturers, with a lot of fancy pasteboard and pretty pictures on it, but it is really fresher and more wholesome. If you use the wheat grown on your own farm (or your neighbor's farm) it costs you less than two cents a pound. If you patronize the poor millionaire because you are sorry for him, it will cost you fifteen cents a pound, including a pasteboard package, which is usually weighed up at the same price as wheat.

In regard to cooking the wheat, I prefer it Terry's fashion—uncooked; but if you must have it cooked a long while, as our friend states, the fireless cooker will do it to perfection. Put it into the cooker boiling hot, just as you go to bed, and the next morning it will be hot enough for breakfast.

Just after the above was dictated, *Good Health* for November was put into my hands; and on the front cover we have a very nice picture of Wu Ting Fang sitting in a crowd of men and women in the Battle Creek sanitarium. It is an excellent picture; and as Mr. Wu sits there in the foreground he is spreading out his hands and saying, "I am going to live 200 years." You see he has thrown friend Terry and myself into the background. Is it not funny to see how "great minds (?) run in parallel channels?" Well, to get right down to it, where can the whole wide world show us a more praiseworthy undertaking? You can all join, and be right in the crowd "as long as you live," especially if you manage not only to *live* but to keep *well*. It makes me think of the old-fashioned spelling-school, and the way in which they let the best spellers go to the head of the class. The man or woman who demonstrates the truthfulness of her theories by living *long* and keeping the full use of her powers, both mental and physical, stands at the head of the class. It is refreshing to note that Mr. Wu so fully agrees with Terry and your humble servant—see page 1145, Sept. 15; and one of the grand and glorious things about this battle for good health and long life is that it is right in the line of "overcoming." The conditions of success depend upon pure, clean, temperate lives. "To him that overcometh will I grant to sit with me in my throne, even as I also overcame, and am set down with my Father in his throne."

A kind word has just come from an old friend. I think it will be a good closing for this health talk.

*Friend Root:*—If you are going to increase for the coming forty years in catholicity as you have in the past decade your usefulness will be very great; and that we may keep tab on you, continue your department in GLEANINGS. R. A. BURNETT.

Chicago, Nov. 4.

By the way, I think it would pay every reader of GLEANINGS to send for the November number, at least, of *Good Health*. The account of Wu Ting Fang's visit to the sanitarium is alone worth the price of the journal for a year.

Since the above was in print I have ground some wheat in a coffee-mill, and compared it with the Pettijohn rolled wheat. There is no trouble in mastication; but the wheat that we find here in the market is evidently of poor quality compared with the Pettijohn. In our groceries the latter sells at 13 cts. a package; and the clean wheat, without the pasteboard box, weighed 1 lb. 6 oz.; so the cost here is only about 8 cts. per lb. for the finest quality of rolled wheat ready to be eaten.* but it does seem too bad to pay even 8 cts. per lb. for wheat that is worth at home less than 2 cts. A good many people will doubtless find it less trouble to get their supplies at the nearest grocery than to prepare them at home. And even at 8 cts. per lb. the expense of good wholesome food is ever so much less than paying 50, 40, or even 25 cts. for a meal at a restaurant or boardinghouse. This same number of *Good Health* has quite an article on the importance of a certain amount, at least, of raw or uncooked food right along with your cooked meals —if you *must* have them cooked.

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We clip the following from the *Budget*, of Sugar Creek, Ohio:

SALOONS OUT: POLICE FOLLOW.

Goldengate, the third largest town in Wayne Co., Ill., has found it does not need a police force since the saloons are closed. On April 7, Goldengate voted out the saloons; and since then the office of marshal has been abolished as being a useless expenditure; and the town is now entirely without police protection.

---

* Shredded-wheat biscuit costs us 13 cts. per lb., or 2 lbs. for 25 cts. Each package contains a dozen biscuits, so they cost about a cent apiece. This, I think, is partially cooked, and so far I give it the preference over any other cereal.

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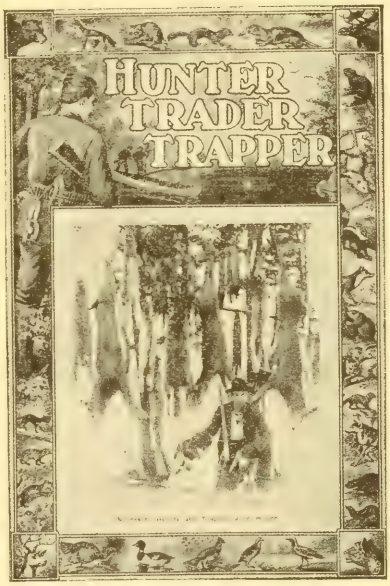


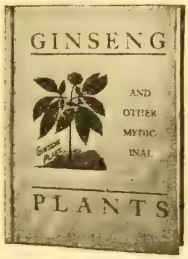


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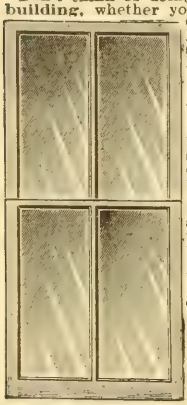

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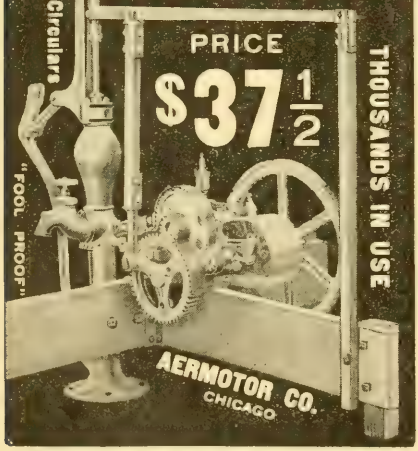




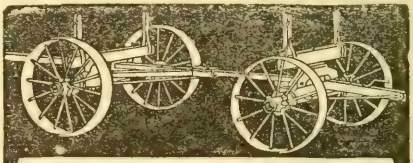

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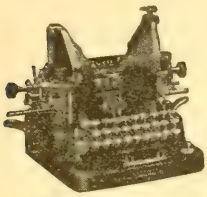

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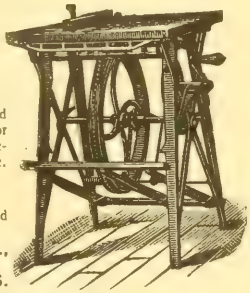

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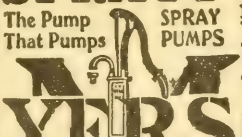

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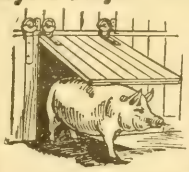

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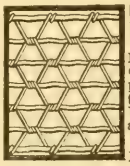

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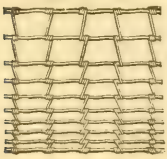

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Best high carbon coiled steel wire. Easy to stretch over hills and hollows. **FREE** Catalog—fences, tools. Buy from factory at wholesale prices. Write today to Box 88

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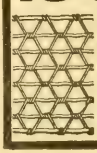

For a 22-inch Hog Fence; 16c for 26-inch; 19c for 31-inch; 22 1-2c for 34-inch; 27c for a 47-inch Farm Fence. 50-inch Poultry Fence 37c. Lowest prices ever made. **Sold on 30 days trial.** Catalog free. Write for it today.

**KITSELMAN BROS.,**
**Box 21, MUNCIE, IND.**

# CALIFORNIA CHRISTMAS BOX

**Something Worth While Direct to You**

or to any point in the country on your order, with holly berry label with Merry Christmas and your name.

**THIS BOX COSTS $7.50,** and contains **DRIED FRUIT,** 25 lbs., fine quality, put up in 2-lb. cartons—Figs, Prunes, Peaches, Apricots, Pears, Muscatel, also Seedless and Seeded Raisins, Plums, Grapes. **CANNED FRUIT,** 12 cans, Peaches, Pears, Plums, Grapes, Apricots, put up in heavy cane syrup. **NUTS,** 8 lbs., Almonds and Walnuts. **ORANGE-SAGE HONEY,** 1-2 gal. All guaranteed first-class and this year's crop.

## WE PAY THE FREIGHT

*Our Reference:*
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**Two of Our Regular Assortments**

50-lbs. Dried Fruit, 6 kinds, packed in 2-lb. cartons, $6 box.
Canned Fruit Assortment—Fancy Fruit, put up in heavy cane syrup, 24 cans, 5 kinds, $4.75.
Combination—50 lbs. Dried Fruit, 24 cans Canned Fruit, all for $10.50.

**WE PAY THE FREIGHT**

Write for price list and full particulars of all assortments; also **three Colored Souvenir Post-cards Free.**

**CALIFORNIA FRUIT PRODUCTS COMPANY**
**Avenue I COLTON, CAL.**

# This is The New Hired Man

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will do more work and do it faster and better and cheaper than the best farm hand and takes up considerable less room in the farm house.

When there's sudden, serious illness in the family—when quick action of any sort is demanded—you can't estimate its value in dollars.

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equipments can be secured by you and your neighbor at most reasonable prices and our directions are so simple that you can put up the line yourselves, without any trouble.

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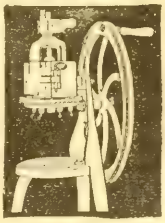
# You Can Get More Eggs

**And Save Feed Bills.**



**GREEN BONE fed raw gives fowls the food they need to take the place of bugs and worms. It has more than four times the egg making value of grain: is rich in protein and other elements that make more eggs, fertile eggs, livelier chicks, earlier broilers, heavier fowls. Cut it with**

**MANN'S Latest Model Bone Cutter**

**Turns easily; cuts rapidly; never clogs: automatically adjusts itself to any one's strength. Cuts all bone with all adhering meat and gristle.**

**Ten Days Free Trial** We ask no money until you try the machine. If not satisfied, return at our expense. Write for catalogue.

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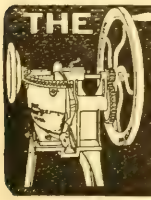

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**GREEN BONE and VEGETABLE CUTTER**

will save half your feed bills and double egg yield. Guaranteed to cut more bone, in less time, with less labor, than any other. Send for Special Trial Offer and handsome catalogue.

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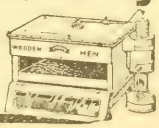
Stahl "Wood-en Hen" and "Excelsior" **Incubators** assure big hatches. Well-built, reliable, practical—thousands in use. Catalogue free.




**GEO. H. STAHL, Box 36A QUINCY, ILL.**

# Hammer Free!

With Every Order of Supplies of $5.00 or Over.

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

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**Root Quality**
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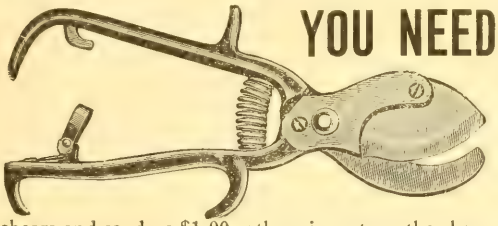

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Fill out the coupon below and send it to us, and we will send you a copy of The Southern Fruit-Grower and a pair of these steel pruning-shears on approval. If you think it a splendid offer, keep the shears and send us $1.00, otherwise return the shears to us. (Sample copy free.)

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**or, How to Control Swarming with Any Hive, Either for the Production of Comb or Extracted Honey. By G. M. DOOLITTLE.**

Price 50 cts. postpaid.

This is the long-promised volume, just issued from the press of The A. I. Root Company. It contains 60 pages the size of this journal, describing Doolittle's system of comb-honey production, and how he managed to control swarming in particular. He has been writing on the subject of bees for over forty years. During all of that time he has made his bees pay, and pay handsomely. Just how he has been doing this is fully explained in this work.

The regular price of this work is 50 cents; but to introduce it among our readers we offer it in combination with one year's subscription to GLEANINGS for the regular price of the journal; namely, $1.00, providing all arrearages are paid, if any; and $1.00 for one year in advance. Those whose subscriptions are about to expire should renew at once, for the condition of our offer is that the subscription money, $1.00, *must* be received before the expiration of your subscription. As there have been only a limited number of copies of the book printed, if you desire to secure one you had better renew at once, even if your subscription has some time to run, so as to be sure to get one.

**GLEANINGS IN BEE CULTURE, MEDINA, O.**

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Here are 12 as handsome Post Cards as you have ever seen. The flower cards are all embossed—raised flowers. There are six of these. The other six are scenes like the one above—all beautiful and grand—nothing cheap or small about any of them. These twelve cards will be sent to anyone FREE. Just send a dime—stamps or coin—for a three months' trial subscription to Farm and Stock, the One Best Farm Paper. This paper will delight you. It is the best on following subjects: Corn Growing, Stock Raising, Farm Veterinary, Farm Women, Dairying, Poultry Raising, Fruit and Bees, etc. Write at once.

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I publish the **FARMER'S CALL, a weekly** paper for every member of the family. An especially interesting feature each week are the children's letters: and the Woman's Department is unusually strong and instructive. Among the special features for Women folks, is its fashions in which I show the **5c patterns.** Let me help you to save money.

## MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week** (over 1000 pages) **for one year** and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts because I buy them by the thousand and don't make any profit. I don't want the profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY!

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# Flower Language Post Cards

**A series of 12 beautiful cards**

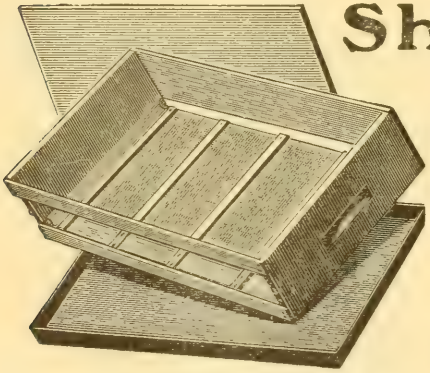
# FREE TO YOU

DO you know the language the flowers talk? Here is a wonderful series of twelve beautiful Flower Language Post Cards that I will send to you absolutely free. Only send me ten cents for a six month's trial subscription to my big 24-page journal, THE GLEANER, which is of interest to every member of the family, and I will send you all twelve of these beautiful cards absolutely free as a present. Each card portrays a different cluster of life colored flowers arranged in artistic designs reproduced from paintings by J. Leslie Melville. Each card has a beautiful poem written by C. Prest n Wynne, revealing the language of the flowers in verse. Think of it,

## 12 Beautiful Post Cards

and THE GLEANER for six months on trial for only 10 cents and REMEMBER that if you will write me at once I have a *surprise for you.* Don't forget to ask about it. Don't lay this down and say "I'll send for these tomorrow;" WRITE RIGHT NOW.

**G. H. SLOCUM, Publisher**
**904 Majestic Bldg. Detroit, Mich.**



# Shipping-cases

for any number or size of sections desired. These cases are made of fine white basswood, and the workmanship is first class. Owing to the shortage in the honey crop last year we have a good stock on hand and can make immediate shipment.

Twelve-inch case, with follower, to hold 24; or eight-inch case, with follower, to hold twelve beeway sections, shipped when no size is mentioned. All cases single tier unless otherwise ordered.

## Honey-packages in Tin.

Standard packages for storing and shipping extracted honey. Less chance for leakage or taint from wood; being square they economize space. Five-gallon cans boxed two or one in a box; gallon cans 10, ½-gallon cans 12 to box. Five, one, or ½ gallon cans not boxed if desired. Prices on application for any quantity.

Place your order now; prices and prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY COMPANY**
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TWO BEE-PAPERS FOR ABOUT THE PRICE OF ONE.

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New subscribers at same rate. Sample copy of Bee Journal free. Send all orders to—

**THE AMERICAN BEE JOURNAL, .. 118 W. Jackson, .. CHICAGO, ILL.**

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

FOR SALE.—To reduce stock I offer for sale as follows; 26 cases of stock No. 40, and 40 cases of stock No. 44 at $10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries; being extracted from select all-sealed upper stories. A third of a century's experience in the production of fine extracted honey. Ask for my little circular "A Word about Extracted Honey;" this will explain why it pays to buy this delicious stock.
E. D. TOWNSEND, Remus, Mich.

LISTEN!—The two cases of honey are received, and I am greatly pleased with it. I don't think I ever saw finer honey in my life. E. W. PEIRCE, Zanesville, Ohio.

You will be just as well pleased with your honey as Mr. Peirce if you send your order to JAY NORTH, of North Adams, Mich. One 60-lb. can, 8½ cts.; two 60-lb. cans, 8¼ cts. For larger orders write for prices. Sample free.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 8c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

RASPBERRY HONEY, left on the hives until thoroughly ripened; thick, rich, delicious; put up in new 60-lb. tin cans; $6.25 for one can; two or more cans at $6.00 per can. A few cans left of the "off color" raspberry honey at $5.50 per can. Sample of either kind, ten cents, and the ten cents may apply on the first order. W. Z. HUTCHINSON, Flint, Mich.

FOR SALE.—Comb honey, amber, buckwheat, and No. 2 white, at $2.75 per case of 24 sections; in 25-case lots, 5 per cent off; light amber extracted (three-fourths clover), in 60-lb. cans, two to case, at 8 cts. QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

FOR SALE.—Write for prices on clover, basswood, and buckwheat honey in 60-lb. cans and kegs; also comb honey and beeswax, all guaranteed to be pure.
W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. MOORE, Queen-breeder, Morgan, Ky.

FOR SALE.—I have some extracted honey, well-ripened, fine, clover and basswood, in new five-gallon round cans, at $5.50 a can; sample free; delivered f. o. b. cars here; ought to suit anybody. MATHILDE CANDLER, Cassville, Wis.

FOR SALE.—Three thousand pounds of fine buckwheat honey in new cans. Send for sample and prices.
EARL RULISON, Rt. 1, Amsterdam, N. Y.

FOR SALE.—Clover, amber, and buckwheat extracted honey. Table quality. Write for prices, stating your needs.
C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Honey, clover, or buckwheat, comb or extracted. Write for price. Sample of clover extracted free. State quantity and quality desired. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Choice white-clover extracted honey, in new 60-lb. cans, or any shape desired. Ripened on the hives and guaranteed strictly pure. Sample free J. F. MOORE, Tiffin, O.

FOR SALE.—Fancy comb honey shipped in no-drip shipping-cases at $3.15 per case of 24 sections. Address
HENRY CABLE, Reynoldsville, Pa. Rt. 1.

FOR SALE.—3000 lbs. clover extracted honey in 60-lb. cans. Fully ripened on hives; 9 cts. per lb., f. o. b. here. Sample free.
E. S. MILLER, Valparaiso, Ind.

FOR SALE.—Well-ripened white-clover honey in 60-lb. cans, at $5.40 per can. Fall honey same price.
ARTHUR SCHULTZ, Ripon, Wis.

FOR SALE.—Fancy and No. 1 white-clover comb honey,
ANTON G. ANDERSON, Holden, Mo.

## Honey and Wax Wanted

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—Buckwheat or dark grades of extracted honey in 60-lb. cans, or packages of similar amount, immediately.
H. R. WRIGHT, Albany, N. Y.

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

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FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. RAILS, Orange, Cal.

FOR SALE.—160 colonies of bees; extractor, extracting-supers, heavy with honey, at $4.00 per colony, or $550.00 for the outfit. No disease. JULIUS HAPPEL, 2809 Fulton Ave., Evansville, Ind.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

FOR SALE.—Italian bees. Write for bargains in bee-supplies. Barred P. Rock, White Wyandotte cockerels, each, $1.00
H. S. DUBY, St. Anne, Illinois.

## For Sale

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.
W. P. SMITH, Penn, Miss.

FOR SALE.—One 2 H. P. Eli gasoline-engine in first-class condition, $50.00; one Victor talking-machine and 48 records, $35.00; cost new $62.00. M. A. JONES, Atwater, Ill.

FOR SALE.—Barnes' foot-power saw, in good condition. Price $20.00, if taken immediately.
H. J. AVERY, Katonah, N. Y.

FOR SALE.—Shipping-cases, the no-drip kind; overstocked, get our special prices. A. G. WOODMAN CO., Grand Rapids, Mich.

FOR SALE.—Nearly new Oliver typewriter; No. 5, latest model. L. H. RANDALL, Medina, Ohio.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Young English ring-neck pheasants. Cheap. Am overcrowded. Also old stock.
RIVERSIDE PHEASANTRY, Dorchester, Wis.

## Post Cards.

Let me reproduce your apiarian views, photographs, etc., on genuine post-cards. Six cents each for six or more.
E. M. FRAME, Blue Rock, Ohio.

## Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

FOR SALE.—Delaware farm, public road; good buildings, good water; fruit, wood; rural delivery; school, churches, stores, mills, railroad depot, canneries, blacksmith shops, all convenient; an ideal place for bees, poultry, fruit, and trucking.
L. A. LUDWIG, Marydel, Md.

FOR SALE.—Fine poultry and bee farm of twelve acres. Fine home, close to good town. No matter what you have looked at, investigate this. Address Box 106, West Alexandria, Ohio.

FOR SALE.—Salt River lands ie Arizona, under Roosevelt dam. C. F. PULSIFER, Alhambra, Arizona.

## Wants and Exchanges

WANTED.—To buy a good location with bees; must have good buildings, good strain of bees, good bee pasture near stream or lake, good roads the year round. If you have the article, sing it out, with the lowest cash price. Must be within 200 miles of Illinois. JOHN H. KOONTZ, Stewardson, Illinois.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER,
301 Huntington Ave., Buffalo, N. Y.

WANTED.—Bees. Spot cash prices. All letters answered
F. B. CAVANAGH, Springport, Mich.

WANTED.—Bees on shares or lease for season of 1909; Pacific States preferred. C. A. WURTH, 640 Leverette St.,
Fayetteville, Arkansas.

WANTED.—To exchange one male Angora goat, two years old. What have you to swap?
W. S. BRILLHART, Oakwood, Ohio.

WANTED.—To buy or rent bees on shares. I prefer a location in Central or Northern Wisconsin. Address
BEEMAN, 915 W. Dayton St., Madison, Wis.

WANTED.—To get in touch with a consumer of honey in the United States. PETER J. HURST,
Nelson, St. Ann's Bay, Jamaica, B. W. I.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Indian Runner ducks, great layers, cheaper than ever, $2.00 each; $3.50 per pair, $5.00 per trio. Circular free.
KENT JENNINGS, Mt. Gilead, Ohio.

## Help Wanted

WANTED.—Capable man 30 to 40 years of age, married, to take charge of small farm in Ohio. State experience, salary wanted, date could begin, and give names of references. Address JOHN SMITH, Gleanings in Bee Culture, Medina, O.

WANTED.—Two experienced bee-men who know they are alive, for the season of 1909. Address
J. W. GEORGE, Imperial, Imperial Co., Calif.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall.
A. W. YATES, 3 Chapman St., Hartford, Ct.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready.
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

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### BY OUR BUSINESS MANAGER

LINCOLN FARM ALMANAC.

Your attention is especially desired in the case of the Lincoln Farm Almanac now advertised on the inside front cover page, It is one of the best offers we ever made.

A BARGAIN IN SQUARE JARS.

In order to reduce a surplus stock we are prepared to offer a special bargain in square jars of small size. These are put up 100 to the crate, and, including corks, we offer them as follows: 5-oz. square Pouder jars, including corks, $2.00 per 100; ½-lb. square Pouder jars, including corks, $2 25 per 100. In 500 lots you may deduct 5 per cent, and in 1000 lots 10 per cent from above prices. To make a really neat and attractive finish, tinfoil caps should be added. We will include these at 25 cents per 100 extra, either size. This is a much handsomer package than a tumbler or jelly-glass, and at these prices it costs little if any more. Our stock offered at this price is limited, and the price holds only while the stock lasts. Shipments can be made only while the stock lasts. Shipments can be made only from Medina, at which point only are these jars in stock.

# TEMPERANCE

THE ANTI-SALOON LEAGUE, AND WHAT IT PROPOSES TO DO.

I have been much impressed by a little sentence that I found in the *Missouri Issue* for Oct. 30. In speaking of the Anti-saloon League and its mission it uses the following words:

*It proposes that we shall all unite to do something that we are all agreed upon, without reference to what any of us think about any thing else. It refuses to quarrel with its natural friends.*

I have put them in italics because I want you to read it over carefully and thoughtfully. In fact, I think it will pay to read it over a good many times.

What I have in mind just now is the relation of the Anti-saloon League to the Prohibition party. To tell the truth, I have just sent them ten dollars to make me a life-long subscriber to the *National Prohibitionist.* I explained to them that I was one of the charter members of the Anti-saloon League, and had been contributing pretty heavily toward it ever since it was started; and I suggested to them that, while these two great organizations are both working for temperance and for abolishing the saloon, and in the end bring about *prohibition* throughout the whole wide world, we certainly did not need to be hitting at each other, even if we do not think just alike. Then I asked the editor if some of his people could not vote for Governor Harris while he was coming out so vehemently for our county local-option work which is making such progress here in Ohio; but they seemed to think that I was, in so doing, "building up with one hand and tearing down with the other." Of course, this was in a private letter; but since then some unkind flings, that looked to me like *unnecessary* criticisms, have appeared in print in regard to our good Governor; and just because of the lack of a little help from our zealous friends of the Prohibition party we are turned over to the mercies of one who, at least, does not think best to come out so strongly for temperance. As I want to be loyal to the Governor who has been chosen by the majority of our people, I hope and pray he may not do any thing that will hinder the wave of reform that is still blessing our State of Ohio.

THE WRIGHT BROTHERS UP TO DATE.

While the French Senate was is session Wilbur Wright was called on to make a speech. Now, from what I know of Wilbur I do not imagine he would make a very *long* speech, but that when he did make one it would be right to the point, and I think you will agree with me when you read it. Here it is:

I sometimes think that this indescribable desire to fly through space after the manner of birds is an inherited longing transmitted to us from our ancestors, who, in their toilsome journeys through the wilderness in primeval times, looked up and saw the birds shooting at almost lightning speed wherever they willed in the unobstructed pathways of the heavens.

Mr. Wright concluded by saying that he told his brother Orville in 1901 that men would not fly in fifty years, and yet he said *they* flew in 1902.

JUST ONE OF MY BLUNDERS.

On page 1334, Nov. 1, in speaking of *Wilbur* Wright's "accident" I meant his brother, Orville Wright. I am very sorry indeed if any blunder of mine has conveyed the idea that any thing has marred Wilbur's very successful flights at Le Mans.

WILBUR WRIGHT INSTRUCTING PUPILS IN THE ART OF FLYING.

Several times I have remarked that if any accident should happen to the Wright Brothers it might be a difficult matter to find anybody on the face of our great round globe who could run the machine without some previous practice or experience with the Wrights as teachers. In view of this it rejoices my heart to know that the work of teaching is already under way, and that our good friend Wilbur has at least one pupil. See the following, which I clip from the Cleveland *Plain Dealer*, dated at Le Mans, France, Nov. 10:

Captain Lucas Girardville, of the French army, made a flight of 15 minutes with Wilbur Wright, the American aeroplanist, today, receiving his first lesson in piloting.

I suppose most of our readers are aware that Wilbur *has received* the *$100,000* for the right to make and use his flying-machine in France.

Orville returned to his home in Dayton, O., in time to vote, and is able to get aronnd, at least after a fashion, by the aid of crutches.

WU TING FANG IS NOW INVESTIGATING UNCOOKED FOODS.

Wu Ting Fang, the Chinese minister, who is now investigating American customs and inventions, is looking up the matter of uncooked foods—see page 1394; also the following which I clip from the *Woman's National Daily:*

UNCOOKED DINNER SERVED.

LAKEWOOD, N. J., Nov. 8.—Mr. and Mrs. Eugene Christian had as their guests Minister Wu Ting Fang, of China, and Vice-Consul L. Wing at a dinner at which every thing in the way of food was served uncooked. A large number of dishes were seeved in courses.

Perhaps I should explain to our friends that Mr. and Mrs. Eugene Christian are prominent exponents and venders of uncooked foods.

"TAKING STOCK" IN NEW ENTERPRISES THAT ARE JUST COMING UP, ETC.

Be careful how you invest your money with anybody or any company who would persuade you through the papers that they have got a "big thing," and are making money so fast that, out of the kindness of their heart (?), they would like to divide this good thing with *other* "good people" who have money to invest. Perhaps there is some sarcasm in the above, but I can not help it; and it vexes me more because of late some people and some institutions that have had a good reputation in times past are begging the public through their advertisements "to get in on the ground floor" and "get rich" with them. A good praiseworthy institution does not have to go out begging in order to get people to invest.

DAN WHITE AND HIS DANDY STRAWBERRIES.

I marketed 500 bushels of berries this season. I now have six acres for next season in good shape considering the long drouth. I will soon write an article as you request. DAN WHITE.
New London, Ohio, Nov. 10.

Before buying your Comb Foundation, or disposing of your beeswax, be sure to get our prices on wax and foundation, or our prices on working wax into foundation.

We are also in a position to quote you prices on hives, sections, and all other supplies. We give LIBERAL DISCOUNTS during the months of November, December, January, and February.

**Remember that**

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## IN HANDSOME SINGLE BOXES MAKE USEFUL GIFTS

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**A gift of these useful, handsome, inexpensive suspenders in attractive, single-pair boxes, will be remembered by every man and boy, long after the occasion is forgot**

Made in light weight for the gentleman and in heavy weight for the strenuous user
Extra long in either weights, if desired

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**Packed in handsome single-pair boxes, they are the most useful, satisfying gift you can buy anywhere for 50 cents**

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**HEWES & POTTER, Makers**

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## November 24th

The lowest rate ever offered for the benefit of prospectors and homeseekers will be in effect from certain points on Nov. 24th. Let us help you take advantage of this opportunity to make a trip of investigation at very little cost. Write for full particulars.

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**General Industrial Agent**
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**Portsmouth, Va.**
**Dept. F**



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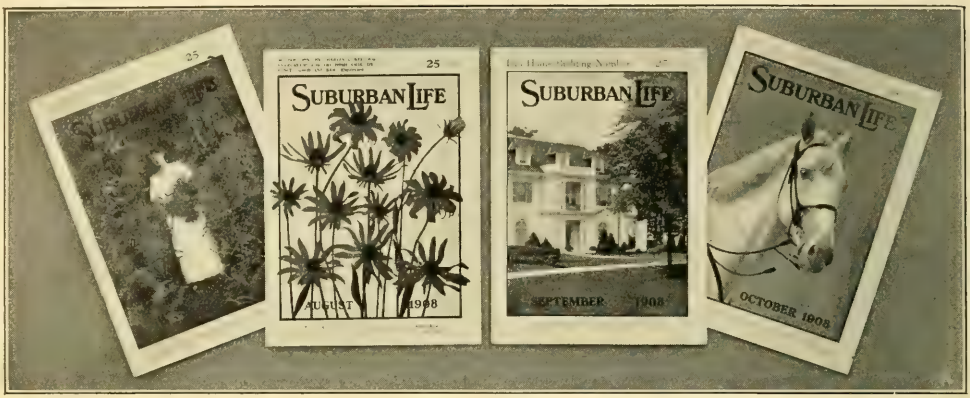


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*Published by The A. I. Root Company, Medina, Ohio, U. S. A*

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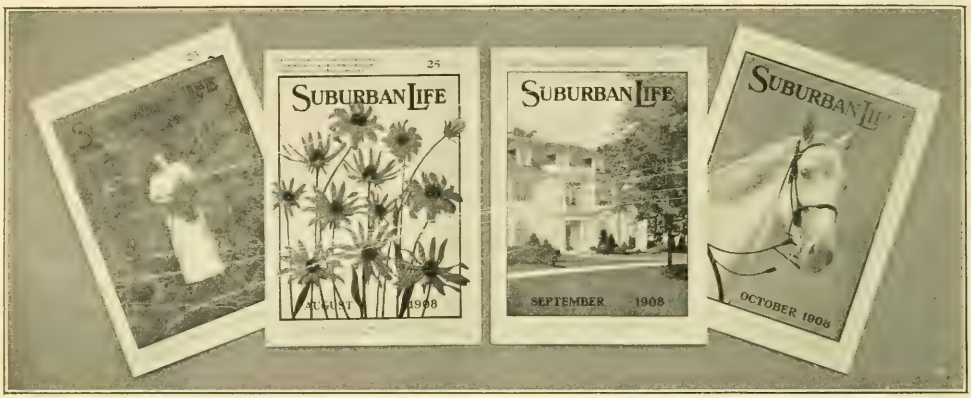
Vol. XXXVI December 1, 1908 No. 23

# Suburban Life

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# Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

For grading rules, both Eastern and Colorado, see previous issues.

Cincinnati.—The market on comb honey is more active, and there are some large lots moving. There will be no big prices, due to the fact that there is considerable old honey left over from last year. No. 1 white comb honey is selling at 14 to 15 in small lots; dark or off grades are not selling at any price, as there is no demand for them. Amber honey is in good demand at 6½ to 7. White-clover honey is selling at 8 cts. in 60-lb. cans; water-white sage, fancy, 9. Beeswax is in fair demand at 30. The above quotations are what we are selling at.

C. H. W. Weber,
Nov. 21. Cincinnati, O.

Zanesville.—The generally quiet condition of business continues to affect the demand for honey. Both comb and extracted are moving slowly, though some revival is anticipated between now and the holidays. Most of the honey now on this market is of very good quality. The jobbing trade is offering producers 12½ to 13 for fancy white comb, and 12 to 12½ cts. for No. 1, and for best clover extracted, 7 to 8 — no demand for off grades, and practically no change in the wholesale market since the last report. I offer for good yellow beeswax 29 to 30, according to quality; 30 to 31 in exchange for bee-supplies.

E. W. Peirce,
Nov. 21. Zanesville, O.

Indianapolis.—While prices are not high, the demand for honey has never been better—a fact that can be attributed to the quality of goods now on our market. This is a white-clover district, and our market is almost free from honey from other sources. Producers are offering fancy white comb at 12½; No. 1 white, 12; white clover, extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is not sufficient to establish a price. Beeswax is steady at 28 cts. cash, or 30 cts in exchange fot merchandise.

Nov. 19. Walter S. Pouder, Indianapolis.

Chicago.—The volume of business is not normal, yet there is some honey selling all the time. It looks as though the people were going to use more of it through the winter than has been the case for the last few years; but they are going to buy it as they want it, reasoning that they can get it as needed. Prices are steady at 13 to 14 for A No. 1 to fancy, other grades ranging from 1 to 3 cts. per lb. less. Extracted white ranges from 7 to 8 according to quality, flavor, and style of package. The amber grades from 6 to 7. Beeswax is steady, and sells upon arrival at 30 if free from impurities.

R. A. Burnett & Co.,
Nov. 18. Chicago.

Schenectady.—There has been quite a demand for extracted honey from the wholesale trade during the past week, but comb stock is moving very slowly, while receipts are in excess of sales. We look for some improvement this week on account of the stimulating effect of Thanksgiving holiday on trade generally. We quote fancy clover, white, 15 to 16; No. 1, 14 to 15; fair to good, 12 to 13; buckwheat, fancy, 12 to 12½; fair to good, 10 to 11. Extracted, dark, in 60-lb. cans and 160-lb. kegs, 6½ to 7½; light, 7 to 8. Beeswax, without demand.

Chas. McCulloch,
Nov. 18. Schenectady, N. Y.

San Francisco.—Comparatively little honey is arriving at present, and stocks in this market are light. Trading, however, is quiet, and sales are made at the former figures. Water-white comb, per lb., 16 to 17; white, 15; water-white extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5¾; candied, 5¼ to 5¾.—*Pacific Rural Press*, Nov. 14.

St. Paul.—Receipts of honey are very light; demand moderate, and prices steady. The prices below represent those obtained for shipment in small lots: Fancy white-clover and basswood, new, 13 to 14; buckwheat, 10 to 12½; extracted in 60-lb. cans, 7 to 8.—*Board of Trade Bulletin*, Nov. 9.

Liverpool.—There is no change in prices, and stocks are small. Chilian, 4¼ to 6⅓; Peruvian, 3⅓ to 4¼; California, 8½ to 10½; Jamaican, 4 to 5; Haiti, 5 to 7. Beeswax, firm. African, 26¼ to 28; American, 30 to 33; West Indian, 29 to 32; Chilian, 30 to 35; Peruvian, 33; Jamaican, 34 to 35.

Taylor & Co.,
Nov. 9. 7 Tithebarn St.

Albany.—The honey market is easier under heavier receipts. While we do not change the asking price, we make concessions rather than lose sales. The crop in this vicinity is less than usual, but there are more people unemployed now than a year ago. We quote fancy clover, 15; No. 1, 14; mixed, 13; buckwheat, 12 to 13; extracted white, 7½ to 8; amber, 7; buckwheat, 7. Beeswax, 30 to 32.

Nov. 17. H. R. Wright, Albany.

Kansas City.—Market is well supplied with comb honey. Demand fairly good. Prices are as follows: Fancy comb in 24-section cases, at $2.90 to $3.00 per case; No. 1 at $2.75; No. 2, $2.50. Extracted, 7 to 8 cts. per lb. Beeswax, 28 cts.

Nov. 21. C. C. Clemons Produce Co.,
Kansas City, Mo.

Boston.—White fancy comb honey, 15 to 16, No 1 ditto, 13 to 14; extracted white, 9 to 10; extracted amber, 7 to 8; amber in barrels, 6 to 7. Beeswax, 30. Blake-Lee Co.,

Nov 6. 4 Chatham Row, Boston, Mass.

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SAVE FREIGHT!
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FINEST Water-white Mountain-sage Honey (extracted).
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All in crates of two 60-lb. cans.

Also Fancy Comb Honey. WRITE US FOR PRICES.

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We are always in the market.

If you have any to sell, mail small average sample to

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WE WILL BUY AND SELL

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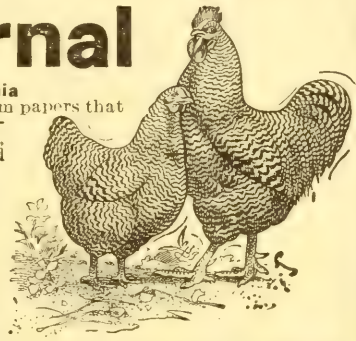
**Notice is hereby given to the 3,000,000 readers of**

# Farm Journal

**Philadelphia**



and to the 3,000,000 readers of this and other farm papers that the subscription rate of this paper is to be advanced on February 1, 1909. Until that date, new and renewal subscriptions will be accepted at the present low rates of

**$1.00 for 10 Years**
**60 Cents for 5 Years**
**(Club Rate)**

**What Forces Us to Do This** The advancing price of paper and of labor, and the yearly increase in number of pages printed, the larger sums paid for editorial knowledge and skill, and the conviction that we have been giving too much for the money. All have been strong arguments. In all human probability, the price of this paper will never again be so low. It is

**Now or Never** if you want to subscribe at the old rates. Send a dollar bill, and protect yourself for ten years against this increase and any future ones. It is perfectly safe—we'll change your address as often as you please, and get the paper to you if you are on this planet. Ask any subscriber, or your bank, whether or not we carry out our promises. You have often thought of taking the FARM JOURNAL; sooner or later you are sure to need it. One dollar 10 years, 60 cents 5 years, until January 30.

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A free copy of the 1909 Lincoln Farm Almanac if your order reaches us by January 4. The Lincoln Almanac contains new and old Lincoln stories, sayings, the Gettysburg speech, calenders for the year, of course; and 24 pages of valuable farm information—curing meats, spraying and planting tables, household recipes, grafting, good roads, etc., etc. All free if you are prompt.

**NOTICE** We still sell any BIGGLE BOOK with Farm Journal 5 years for $1.00, as advertised last month, and send the book on 10 days' approval. The books are: POULTRY, HORSE, Garden, Orchard, Cow, Swine, Sheep, Berry, Pet and Health. Per Volume, 50c Postpaid

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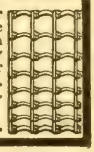

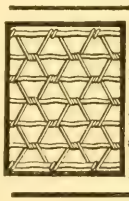

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# GLEANINGS IN BEE CULTURE

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### GREAT OPPORTUNITES IN THE WEST.

Many Eastern people labor under the misapprehension that the great West is pretty well filled up, and, consequently, golden opportunities are no more, and conditions are very little if any better than where they are. No greater fallacy could be entertained. For example, the Chicago, Milwaukee & St. Paul Railway, which is now advertising in these pages, is laying rails at the rate of two miles a day through a virgin country where "great empires to be" are mere babies. There are no finer countries under the sun, either as to climate or resources. All they need is a population of plucky, intelligent, hard-working thrifty people. Nature will do the rest. As to bee-keeping, there are many opportunities. Last summer one settlement (the Yakima Valley) produced over 100 tons of the finest honey. Doubtless there are and will be many more just such places. Bees seldom fail to return a crop. Fruit-bloom in the spring and great crops of alfalfa in summer insure certain returns because the summer weather is always favorable—no rain to interrupt. There are also at certain times great masses of wild flowers. The people are of the best possible class, with fine schools and plenty of church accommodations. It is an ideal country. Take the chance and go and see.

### SAVING THE HEAT.

Everybody who has to do with house-heating by means of stoves, knows that an enormous proportion of the heat generated is wasted altogether by passing out at the chimney-top. Many inventors have tried their hand at devising something to arrest this great waste of fuel. Perhaps the best invention of this kind is the radiator made by the Rochester Radiator Co. This consists of a series of cross-tubes which arrest a considerable amount of the heat and throw the same into the room. The invention is simple and practical, easily understood and fitted up. Like all good inventions it has been copied by other manufacturers who make a somewhat inferior article, as is usually the case with those who copy. We advise our readers who want the best thing of the kind to go to the fountain head, The Rochester Radiator Co. We believe they are perfectly honorable and straightforward business men, anxious to give complete satisfaction to all purchasers of their radiators. They will do their best to furnish a radiator suitable to your heater if you will carefully describe your arrangement for heating. Write them.


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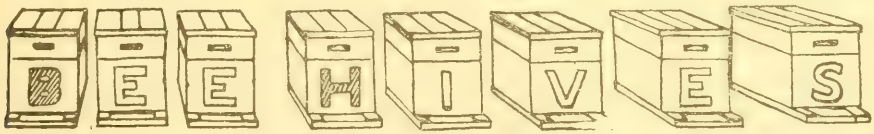


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**MONTGOMERY COUNTY .. .. .. HIGH HILL, MO.**

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### MR. RICE, THE "PAINT MAN."

It is with pleasure we announce the fact that Mr. Rice "The Paint Man" is again a user of these columns. We are always glad to see an old friend return to the fold, and in this case we are peculiarly gratified because it shows our readers are users of paint. It indicates tidiness and general neatness, and also care to be a user of paint. The kind of paint sold by Mr. Rice is such that almost any one can afford to be liberal with it, and that is a great point. It requires no oil, and therefore effects a great saving. Thousands of customers have used it with satisfaction, so it is no experiment whatever. There are many who insist that oil in a paint is entirely unnecessary, and it begins to look like it when one reads the testimonials submitted by Mr. Rice. If you are a user of paint, large or small, we believe it will pay you to get in touch with Mr. Rice. We think that on careful and mature investigation, backed up by a careful trial, you will decide that oilless paint has real merit and is worthy of extended use for many purposes around the farm home.

### A SPLENDID CHRISTMAS PRESENT.

Very few articles are more appropriate for Christmas presents than fountain pens of good quality. Such a pen in one's pocket is always handy and is a constant reminder of the one who gave it. Good fountain pens can now be obtained for the sum of $1.00 from the Laughlin Fountain Pen Co. who advertise in this journal. Formerly as good a pen sold for $2.50 or thereabouts. Now they are within the reach of all at a dollar each. The Red Gem is particularly desirable as it may be slipped into the vest pocket unlike the ordinary pen. It will be a hard matter to find a nicer Christmas present. It writes just like an ordinary pencil and requires no special attention to keep it in order. The lead pencil has an awkward way of breaking just when one wants it most, but the Red Gem writes a long time before it requires a fresh supply of ink. The Laughlin Co. are so sure they have a good thing that they make an extremely liberal offer to those who find they do not want the pens after trying them. It is the "square-deal" principle carried clear out to the end. Nothing could be fairer.

### A WOODEN SITTING HEN.

Mr. George H. Stahl, the celebrated maker of wooden hens, is again using these columns to make known their merits to the whole world. Mr. Stahl is one of the pioneer makers of incubators in America. It does not seem necessary for us to enlarge on the merits of his manufactures, as he must be well known to many of our older readers, for he has periodically used these columns for a number of years. If you are in want of an incubator this season we would suggest that you write Mr. Stahl, stating your desires.

### WINDBREAKS FOR THE FARM.

In the Central States and the Mississippi Valley there exists an absolute necessity for good windbreaks to protect from the chily blasts all kinds of farm stock and crops. In many sections windbreaks are very necessary for the protection of fruit-trees, vegetables, and farm crops. Many farmhouses could be rendered far pleasanter by the addition of good strong windbreaks. They take the sting out of the wind, and rob the "norther" of its terrors. It is not a difficult proposition to get a windbreak. If you will write to The Gardner Nursery Co., box 26, Osage, Iowa, they will tell you just what you ought to plant, how to plant, and the cost of the trees. They have trees on purpose to resist blizzards. In a few short years you will be proud of your windbreak if you go to work and plant it now. It will be an improvement which will add much to the selling value of the farm — far more than it costs you. The same concern also sells fruit-trees suitable for the blizzard belt. They have also a line of hardy ornamentals so that they are in position to supply all the trees a farmer needs for the adornment and protection of his home.

### THE "IDEAL" INCUBATOR.

Nowadays there are a great many makers of incubators in the world, and more particularly in the United States. One of the most reliable firms of incubator-manufacturers is the J. W. Miller Co., box 48, Freeport, Ill. They make a nice line of medium-priced chick-machines which will compare very favorably with those made anywhere, quality and price being both considered in the deal. They have been in that business for a quarter of a century, hence their reputation is made, and they are not under the necessity of making big statements to draw attention to their wares. Their advertisement, which is inserted elsewhere in this paper, is quite modest, but they do a large trade nevertheless, because they are widely and favorably known among poultry-breeders all over America and across the ocean as well. They issue a very fine catalog which is sure to interest every lover of poultry, no matter how small his place may be. Write for it right now.

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| Gleanings in Bee Culture | $1.00 | Our Price |
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| Gleanings in Bee Culture | $1.00 | |
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| Ladies' World | .50 | |
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|---|---|---|
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Address

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As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice that you can judge of the size of the books very well by the amount required for postage on each.

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In this book the Spanish is given in one column, and the English right opposite in another column. Every verse is opposite the corresponding one in the column adjoining, so that it affords the reader the very readiest means of comparing the language of the two. The writer has found this book to be a great help in the learning of Spanish, and he has also received spiritual benefit by getting a glimpse of the word of God in another language. The book is published by the American Bible Society, and we hope and trust it may have a good sale.

6 | Christian's Secret of a Happy Life. Cloth..... 25

For several years we have been unable to get a nice substantial copy of this book at a reasonable price. We are glad to tell our friends now, however, that we have a very pretty edition, bound in cloth, at the very reasonable price of 25 cents. If wanted by mail, add 6 cents for postage. This book has had a very large sale for more than 20 years, and when I tell you that quite a number of people have been converted to the Lord Jesus Christ simply by reading it you will no longer wonder why it sells. At one time it was carried and sold by the newsboys on our railways. It not only contains a wonderful "secret" for unbelievers, but for many who have been church-members all their lives, but not the "happy" church-members that God intended we should be.

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10—Advanced Bee Culture.....1 00

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10 | How to Keep Bees..... 90

3 | Merrybanks and His Neighbor, by A. I. Root... 12

10 | Forty Years Among the Bees. By Dr. C. C. Miller, Marengo, Ill..... 90

15 | Modern Bee-farm. By S. Simmins. New edition; cloth bound.....1 85

MISCELLANEOUS HAND-BOOKS.

Postage.] [Price without postage.

5 | A B C of Carp Culture, by Geo. Finley..... 25

5 | A B C of Strawberry Culture,** by T. B. Terry.. New edition, revised and enlarged; paper, 45c; cloth, 68c; by mail, 75c.

5 | A B C of Potato Culture, Terry** New edition, revised & enlarged; paper, 45c; cloth, 68c, mail 75c. This is T. B. Terry's first and most masterly work.

6 | Asparagus Culture..... 40

6 | Alfalfa Culture..... 40

8 | Barn Plans and Out-buildings*..... 90

2 | Celery for Profit, by T. Greiner** ..... 25

The first really full and complete book on celery culture, at a moderate price, that we have had. It is full of pictures, and the whole thing is made so plain that a schoolboy ought to be able to grow paying crops at once without any assistance except from the book.

10 | Draining for Profit and Health, Warring..... 90

8 | Domestic Economy, by I. H. Mayer, M. D.** ... 30

This book ought to save at least the money it costs, each year, in every household. It was written by a doctor, and one who has made the matter of domestic economy a life study. The regular price of the book is $1.00, but by taking a large lot of them we are enabled to make the price only 30 cents.

10 | Fruit Harvesting, Storing, Marketing, etc..... 75

It has been well said that it is an easier matter to grow stuff than to sell it at a proper price after it is grown; and many men fail, not because they are inexpert in getting a crop, but because they do not know how to sell their crops to the best advantage. This is the first book of the kind we have had as an aid in selling. It not only tells all about picking, sorting, and packing, but gives all the best methods for storing for one or two days or a longer time. It also tells about evaporating and canning when there is a glut in the market. It discusses fruit packages and commission dealers, and even takes in cold storage. It is a new book of 250 pages, full of illustrations. Publisher's price, $1.00.

| Farming with Green Manures, postpaid**..... 90

This book was written several years ago; but since competent labor has got to be so expensive, and hard to get, many farmers are beginning to find they can turn under various green crops cheaper than to buy stable manure, and haul and spread it—cheaper, in fact, than they can buy fertilizers. This book mentions almost all plants used for plowing under, and gives the value compared with stable manure. Some of the claims seem extravagant, but we are at present getting good crops, and keeping up the fertility, by a similar treatment, on our ten-acre farm.

7 | Farm, Gardening, and Seed-growing** ..... 90

10 | Fuller's Grape Culturist**.....1 15

5 | Garden and Farm Topics, Henderson**..... 0

12 | Gardening for Pleasure, Henderson*.....1 10

While "Gardening for Profit" is written with a view of making gardening PAY, it touches a good deal on the pleasure part, and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations. (Retail price $2.00.)

12 | Gardening for Profit**.....1 10

This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts (Retail price $2.00.)

8 | Gardening for Young and Old, Harris**..... 90

This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

3 | Grasses and Clovers, with Notes on Forage Plants..... 20

This is by Henry A. Dreer, author of the book "Vegetables Under Glass" that has had such a large sale of late. This little book tells how six tons of grass has been grown to the acre, and gives much other valuable matter.

Postage.] [Price without postage.

10 | Greenhouse Construction, by Prof. Taft** 1 15

This book is of recent publication, and is as full and complete in regard to the building of all glass structures as is the next book in regard to their management. Any one who builds even a small structure for plant-growing under glass will save the value of the book by reading it carefully.

12 | Greenhouse Management, by Prof. Taft**.....1 15

This book is a companion to Greenhouse Construction. It is clear up to the times, contains 400 pages and a great lot of beautiful half-tone engravings. A large part of it is devoted to growing vegetables under glass, especially Grand Rapids lettuce, as well as fruits and flowers. The publisher's price is $1.50; but as we bought quite a lot of them we can make a special price as above.

5 | Gregory on Cabbages, paper* ..... 20

5 | Gregory on Squashes, paper*..... 20

5 | Gregory on Onions, paper*..... 20

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

| Handbook for Lumbermen..... 05

5 | Home Pork-making; 125 pages, illustrated..... 40

I think it will pay well for everybody who keeps a pig to have this book. It tells all about the care of the pig, with lots of pictures describing cheap pens, appliances, all about butchering, the latest and most approved short cuts; all about making the pickle, barreling the meat, fixing a smoke-house (from the cheapest barrel up to the most approved arrangement); all about pig-troughs; how to keep them clean with little labor; recipes for cooking pork in every imaginable way, etc. Publisher's price is 50 cents, ours as above.

15 | How to Make the Garden Pay**.....1 35

By T. Greiner. Those who are interested in hot-beds, cold-frames, cold green-houses, hothouses, or glass structures of any kind for the growth of plants, can not afford to be without the book. Publisher's price $2.00.

| How we Made the Old Farm Pay—A Fruit-book, Green ..... 10

10 | Irrigation for the Farm, Garden, and Orchard* 85

By Stewart. This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills to take the place of rain, during our great drouths, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

3 | Maple Sugar and the Sugar-bush**..... 25

5 | Manures; How to Make and How to Use Them; in paper covers..... 30

6 | The same in cloth covers..... 65

| Nut Culturist, postpaid.....1 25

3 | Onions for Profit**..... 40

Fully up to the times, and includes both the old onion culture and the new method. The book is fully illustrated, and written with all the enthusiasm and Even if one is not particularly interested in the business, almost any person who picks up Greiner's books will like to read them through.

10 | Our Farming, by T. B. Terry**..... 75

| Same, paper cover, postpaid..... 50

In which he tells "how we have made a run-down farm bring both profit and pleasure."

If ordered by express or freight with other goods, 10c less.

8 | Practical Floriculture, Henderson.*..... ..... 1 10

10 | Profits in Poultry.* .....1 00

10 | Small-Fruit Culturist, Fuller ..... 75

2 | Experiments in Farming. By Waldo F. Brown. 08

This little book ought to be worth its cost for what is said on each of the four different subjects; and the chapter on cement floors may be worth many dollars to anybody who has to use cement for floors, walks, or any thing else. In fact, if you follow the exceedingly plain directions you may save several dollars on one single job; and not only that, get a better cement floor than the average mason will make.

2 | Sweet Potatoes; Forty Years' Experience with. By Waldo F. Brown **..... ..... ..... 08

This little book, by a veteran teacher at our farmers' institutes, ought to be worth many times the price to everybody who grows even a few sweet potatoes in the garden. It also gives full particulars in regard to handling and keeping this potato, which is difficult to keep unless you know just how.

10 | Talks on Manures* .....1 35

By Joseph Harris. Written conversational style, which makes it very interesting reading. It covers the subject very completely; contains numerous analyses of manures and comparative tables. The use of technical language is avoided, which makes the book of greatest value to the practical farmer. A book of 366 pages, nicely bound in cloth.

5 | The New Rhubarb Culture**..... 40

Whenever apples are worth a dollar a bushel or more, winter-grown rhubarb should pay big. It does not require an expensive house nor costly appliances. Any sort of cellar where it will not freeze is all right for it; and the small amount of heat necessary to force the rhubarb costs very little. The book is nicely bound in cloth, full of illustrations, mostly photos from real work, 130 pages. Every market-gardener should have this book, for the lessons taught indirectly, in regard to forcing other crops besides rhubarb. Publisher's price 50c.

5 | Tile Drainage, by W. I. Chamberlain..... 35

Fully illustrated, containing every thing of importance clear up to the present date.

The single chapter on digging ditches, with the illustrations given by Prof. Chamberlain, should alone make the book worth what it costs, to every one who has occasion to lay ten rods or more of tile. There is as much science in digging as in doing almost any thing else; and by following the plan directed in the book, one man will often do as much as two men without this knowledge.

5 | Tomato Culture ..... 35

In three parts. Part first.—By J. W. Day, of Crystal Springs, Miss., treats of tomato culture in the South, with some remarks by A. I. Root, adapting it to the North. Part second.—By D. Cummins, of Conneaut, O., treats of tomato culture especially for canning-factories. Part third.—By A. I. Root, treats of plant-growing for market, and high-pressure gardening in general.

3 | Vegetables under Glass, by H. A. Dreer**..... 20

3 | Vegetables in the Open Air*..... 20

This is a sort of companion book to the one above. Both books are most fully illustrated, and are exceedingly valuable, especially at the very low price at which they are sold. The author, H. A. Dreer, has a greenhouse of his own that covers one solid acre, and he is pretty well conversant with all the arrangements and plans for protecting stuff from the weather, and afterward handling to the best advantage when the weather will permit out of doors.

3 | Winter Care of Horses and Cattle..... 25

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in a book. It has 44 pages and 4 cuts.

3 | Wood's Common Objects for the Microscope**.. 47

8 | What to Do, and How to be Happy while Doing It ..... 65

The above book, by A. I. Root, is a compilation of papers published in *Gleanings in Bee Culture*, in 1886, '7, and '8. It is intended to solve the problem of finding occupation for those scattered over our land out of employment The suggestions are principally about finding employment about your own homes. The book is mainly upon market-gardening, fruit-culture, poultry-raising, etc. Illustrated, 188 pages, cloth.

8 | Same, paper covers..... 40

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# RAISING THE WIND, AND SOME STRAWS THAT SHOW ITS DIRECTION.

*By the Bee Crank*

When the crop of honey is coming into the hive very freely, it happens that there is not time for the surplus moisture to evaporate down to the consistency required by the little bee-chemists before sealing. At such times the bees have a way of supplementing the natural evaporation by forming a file extending from the entrance far back into the hive, and then by rapidly moving their wings set up a current of air that acts as an artificial ventilator and carries off the surplus moisture at a more rapid rate.

There are certain seasons of the year when orders for supplies do not come in to me as freely as at other times. My method of "raising the wind" to start something at such times is to allow a special discount on all cash orders. For December I will allow four per cent on all cash business received during that month. This allowance is well worth your while, and it helps equalize my business and to keep things moving now, and relieve the conditions during the rush times of spring. Aside from the saving of money to you, think what it means to have your supplies ready and waiting for you when you want them.

At our last Indiana State Fair we were awarded five first premiums out of the possible eight: First on Bee-supplies; first on Beeswax; first on Comb Honey; first on Hoosier-Italian Bees; first on Carniolan Bees. All this with very spirited competition, and all exhibits very creditable. Our Hoosier-Italian bees were also awarded first premium at the Illinois State Fair. A catalog of these prize-winning goods free for the asking.

I am now paying 28 cents spot cash or 30 cents in trade for good average beeswax delivered here.

**Walter S. Pouder,**
**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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## STRAY STRAWS

DR. C. C. MILLER

MR. EDITOR, I quite agree with what you say, p. 1366, about melting up combs where there is any question of foul brood. I am exceedingly thankful to say that, so far, I have no personal interest in foul brood. A few years ago it was within 12 miles of here, but I think it was not allowed to spread.

I THOUGHT I was somewhat ultra in having a space of 2 inches under bottom-bars. That's shallow compared with what John Silver has. He says, *Irish Bee Journal*, 63, "Nearly all my bottom-boards are of the reversible type, a flat floor one side, when turned upside down; this gives a three or four inch space below."

SOMETHING must be done to stop the man who edits the *Irish Bee Journal* from getting in his "digs" at every thing and everybody. Here's an item he publishes:

The *British Bee Journal* of Oct. 8 announced, for that date, a conversazione of members of the B. B. K. A., at which one of the attractions would be "'Stings,' introduced by Colonel H. J. O. Walker."

And then what does that wild Irishman do but head the item, "The Human Sting"!

A NEWSPAPER statement was that the forest fires cost a million dollars a day. [The statement is possibly exaggerated, but nevertheless it is plain to any candid mind that millions of feet of valuable timber were burned, the loss of which can not do other than enhance the price of lumber in general, and, of course, all that is made from it, including hives. Probably this advance will not take place this year.—ED.]

A. I. ROOT, among your experiments with cereals you might try wheat *whole*. I used it by the peck in my college days as the cheapest fodder I could live on. I didn't grind it or do any thing with it except to boil it a long time. Then when cold there would be a sort of jelly between the grains. Take it with rich milk, and chew, chew, chew it, and it makes a very satisfying meal. [See Our Homes in this issue.—A. I. R.]

LEST BEGINNERS should think, upon reading page 1363, that either by the mouth or by the sting bees inject formic acid into the cell just before capping, I will say that authorities tell us that the acid gets into the honey through the circulation of the bee. [The reader is not to understand that we affirmed that the formic acid was introduced in the manner here explained, but only desired to show that the bulletin in question did not necessarily imply that it was introduced through the sting, *a la* Clarke. That the formic acid gets into the honey through the process of inversion, or as some prefer to call it digestion, is probably true.—ED.]

"THEN YOU believe in the general principle of killing queens every two years, notwithstanding your 'exceptions that prove the rule,'" says ye editor, page 1364. Hardly that. Fact is, it isn't easy to tell what I do believe. Most emphatically I don't believe it would be wise for me to kill off all queens for no other reason than their being two years old. If I did that there would be no exceptional queens doing fine work in their old age, and they are just the ones I like to breed from, other things being equal. While I think Mr. Chapman's plan of requeening every year is good for him, I don't think my conditions favor it. In actual practice I let a queen live so long as she does good work. Not often do my bees allow a queen to live after that. I suspect the strain of bees may have a little to do with it.

BEESWAX WOOD POLISH.—The editor of GLEANINGS recommends beeswax and turpentine in a thin paste, page 1194. We think that he will find our recipe better for furniture polish, viz. —4 oz. each of beeswax, white wax, and Castile soap. Cut very fine and dissolve in three pints of boiling water. Then add 1½ pints of best turpentine. Rub on with one cloth; rub off with another; polish with a third. If found lumpy, stand the jar of polish in boiling water before using it.—*Irish Bee Journal.* ["White wax" is here mentioned as an ingredient. We do not know whether this refers to a bleached beeswax or to some of the mineral waxes. Our painter, who has tested paraffines and ceresines, says they have a tendency to make a greasy finish, while a pure beeswax and turpentine made into a paste makes a hard, smooth, and semi-glossy surface. We shall be glad to test this matter, and report, using paraffine for the white wax referred to.—ED.]

YEARS AGO I stood alone in advocating legislation that would give a bee-keeper legal control of a given territory. Indeed, I stood practically alone in advocating that a man had a moral right to his own territory. A distinct change of view as to the latter has taken place. Conventions have passed resolutions condemning intrusion upon another man's territory, and many are in accord with the views of the editor of the *Bee-keepers' Review*, who says, p. 339, "The man who will crowd in upon the territory of another should be looked upon as little better than a thief." It may be a long time, as he says, before a man can legally control a territory without owning the land also; but legal control is pretty sure to come. Granted that a man has a moral control, the

righteousness of legal control follows as day follows the night. If encroachment is in the nature of stealing, why should there not be a law against it just as against any other kind of stealing?

For fear there will be no one to say a word against a tariff on honey, I arise to remark that the danger from introducing foul brood with imported honey might be greater. Not many buy honey to feed, and the up-to-date bee-keeper would not think of feeding *any* honey unless he were sure as to its source. The only danger comes from some ignoramus who doesn't take a bee-journal, and he is likely to let his bees starve before buying honey to feed them. [We do not quite know whether you are for or against a tariff on honey; but we infer that you believe no good would arise from it. But foul brood, it should be remembered, is not transmitted necessarily through the feeding of infected honey, but from the fact that it may be on sale where the bees can get at it. If it is true that foul brood is spreading very rapidly throughout the United States, it may be wise to put a tariff on honey to prevent its importation from localities where there is foul brood.—Ed.]

One of the things I've wanted to know is how deep a space there can be under bottom-bars without having the bees build comb in it. John Silver says, *Irish Bee Journal*, 63, that he has a hive with a one-inch space under the frames, "and the bees keep the floor board of this hive as clean as a new pin. These frames have had an inch under for three years, and no comb is built underneath." If bees refrain from building in such a space, is it advisable to give them any thing less? [The danger of bees building comb under the bottom-bars when there is a space of more than 3/8 inch, has been very greatly overestimated. It is agreed that, between the upper story and the lower story, there should not be more than 5/16 inch. But between the bottom-bars and floor of the bottom-board the space can be anywhere from 1 to 3 inches—at least, various reports that have come in show that the bees will not build comb in this space except during an exceptionally heavy honey-flow. The building of such comb adds to one's supply of wax, and, what is quite important, causes the combs above the bars to be built clear down in contact with them. We have advocated for several years, as a happy medium between the extremes, a one-inch space under the frames; but we have always believed that two inches could be used to better advantage. We observe that the field bees in their return flight seem to like a large open space to fly into. When there is two inches under the frames, or even one inch, there will be a cluster of bees hanging down on which the fielders may alight. This affords the heavily loaded bees the finest kind of cushion against which to bump. Given their choice, the average bee will alight quicker on a bunch of bees than on a wooden alighting-board, no matter how favorable its slant. Mr. Vernon Burt and the editor made this a special point of observation some two years ago, when the bees were working heavily in the field. We lay prone on the ground and watched the fielders come in; and nine out of ten of them, where the entrance was from one to two inches deep, would fly clear through and alight on the other bees.—Ed.]

J. J. Wilder, *American Bee Journal*, 338, has tested Caucasians for three years, the past season in seven or eight apiaries. They are great drone-rearers, bad at gathering glue near the close of the season, build too much burr and brace-comb, and the first cross with Italians is cross. But their good qualities overbalance their bad ones. They are superior gatherers, building up stronger than Italians in spring, at the same time being less inclined to swarm. [J. J. Wilder's experience is the same as ours, except Caucasians were inferior gatherers of honey, and very much more inclined to swarm. The general testimony has been that Caucasians and Carniolans alike swarm far more than Italians, and we therefore conclude that Mr. Wilder's experience on this point is rather unusual. We have had reports to the effect that Caucasians were the equal of Italians as honey-gatherers, and somewhat ahead. But the reason they failed so much at our yard was because they swarmed and swarmed and swarmed. This could have been held in check if a man had been kept on hand to watch. The fact that the Italians, in the *same yard*, with the same treatment and environment, did not swarm, would seem to show that for out-apiary work, especially Caucasians, for us, at least, would not be very desirable.

We should be glad to get further reports, and in the mean time we wish to draw attention again to something to which all are agreed, that this black race runs excessively to the rearing of drones. This one fact would tend, wherever they are introduced, unless checked, to run out Italians in very short order. Should it subsequently develop that they are inferior to the yellow bee, the unhappy possessor of the Caucasians would be in a bad plight. The late J. B. Hall, of Canada, for example, found this out to his sorrow, and, as he said, it took years to run out the taint of this black race.—Ed.]

# Editorial

By E. R. Root.

When putting colonies in the cellar it would be a good time to unite any that may be weak.

A trip through the southern part of Ohio indicated that there has been a very severe drouth—much more severe, in fact, than in the regions immediately surrounding the big lakes. In some quarters there is a feeling that this drouth will affect the clover market for another season. As to this, see editorial elsewhere on this subject.

If you are desirous of moving your apiary a few rods, it is comparatively easy to do it during winter or the following spring If the bees are wintered indoors, next spring set the hives out anywhere you please. If they are wintered outdoors, move the yard after the bees have been confined to the hives for a month or six weeks; but do the moving after it begins to warm up, and before the bees have had a flight.

### UNCAPPING BY MACHINERY.

SCHEMES for uncapping combs are still receiving more or less attention. In the *American Bee Journal* for November is shown a machine that works on a principle somewhat similar to some described heretofore. But these machines have never gone beyond the experimental stage. Possibly the application of steam heat to the knives may go a long way toward solving the problem.

### MILKING HONEY OUT OF EXTRACTING-SUPERS.

STRANGE as it may seem, a subscriber has a scheme for "milking" the honey out of a hive without the removal of a comb or uncapping the same; and, stranger still, he has actually sucked the honey out of several supers by means of a strong suction-pipe. We are not at liberty to give the details just now, but we expect to do so when the inventor has perfected his invention.

### SHOULD DRONE COMB BE USED IN EXTRACTING-SUPERS IN PLACE OF WORKER?

IN the *American Bee Journal*, Mr. M. H. Reed, secretary of the Irish Bee-keepers' Association, is said to urge that, for extracting purposes, drone comb should be used, for the reason that honey will flow more readily from the larger than from the smaller cells during the operation of extracting, and for the further reason that "bees naturally draw out drone-cells more readily than worker-cells."

We should be glad to hear from some of our subscribers on this point. Unless perforated zinc zinc is used, the queen would be quite sure to occupy this drone comb, and the result would be a lot of waste in the rearing of useless drones. This is a good theme for discussion, and we should be glad to hear from some of our subscribers.

### IT PAYS TO MELT OLD COMBS.

ON p. 1366, last issue, we promised to give figures showing the results of rendering the very old combs mentioned. There were 225 combs, Langstroth size, and the total amount of wax secured was 69 pounds, which is a little over 3 pounds to each 10 combs. The total time of rendering was 9 hours. The combs were melted in two wash-boilers, and run through the press twice, yielding 63 lbs. of wax the first time, and 6 the second.

At 30 cts. per lb., 69 lbs. of wax will bring $20.70. From this we must deduct the cost of the labor, $1.80, leaving $18.90.

Medium brood foundation, to fill 225 Langstroth frames, at 51 cts. per lb., amounts to about $16.32, so that we get our full sheets of foundation for nothing, and have considerable left. The work could usually be done when the labor would not be worth 20 cts. an hour. But even if this is not possible, there is nothing lost.

### ALEXANDER'S ARTICLES IN BOOK FORM.

WE have had so many requests of late to put Alexander's articles in book form that we are now arranging to publish a collection of his best papers. The little volume will be ready for distribution probably some time in January, and will be sold for 50 cts. In the mean time we shall be glad to club it with GLEANINGS one year both for $1.00. We will enter subscriptions immediately, and will send the book as soon as it is published.

The new volume will contain the cream of Mr. Alexander's writings; and when it is remembered that his career as a bee-keeper covered over forty years, and that during that time he managed hundreds of colonies in one yard, producing carloads of honey in a single season, his book should have a ready demand, especially when it is clubbed with the journal for $1.00, for this is the only way in which it will be sold for the present. All arrears, if any, must be paid before advantage can be taken of this offer.

### SPECIAL OFFERS ON RENEWALS.

AT this season of the year, many subscriptions for this journal will expire. Owing to the recent ruling of the Postoffice Department we are not permitted to send the journal but for a short time after the period for which the subscription has been paid; and we desire to remind those in arrears that, if they wish the journal without a break, it will be necessary to renew at once. In view of the fact that we can not continue the journal very long after the time paid for, we are making exceptionally low offers. If our friends will take advantage of them at once they will not miss a single issue. For example, we are making a special low offer on GLEANINGS one year, and Doolittle's 50-cent book, both for the price of the journal alone—$1.00; but all subscriptions must be paid for one year in advance before advantage can be taken of this offer.

### 1908 CROP OF HONEY NOT AS LARGE AS FIRST REPORTED.

EVIDENCE is beginning to come that indicates that the crop of honey the past season, outside of the central-northern States, was not as large as earlier reports showed. One large buyer of honey is reporting that, in some sections at least, the crop is much lighter than it was last year, and that offers he has made have failed to secure honey. Another buyer went so far as to state that, even in the central-northern States, the crop was not as large as was first reported, as he finds some difficulty in getting all he requires for his trade.

Apparently our advice to sell honey around home has had some effect, as we have been informed that the local trade all over the country has been developed this year as it never was before. If, on top of this, the aggregate amount of honey in the United States was lighter than was reported early in the season, it is evident that prices ought now to stiffen. But it is now getting late, and *comb* honey, at least, ought to be disposed of before the general stagnation in price takes place that is apt to follow after the holidays. On the other hand, it may be advisable, in some cases at least, to hold over good extracted, awaiting a better market for another year.

### WILL THE DROUTH THIS FALL AFFECT THE CLOVERS FOR NEXT SEASON?

ON page 1365, November 15, we quoted the editor of the *Review* as fearing that the long drouth had so far killed out the clovers that next year would be a light one for honey. Over

against this we introduced the testimony of a practical farmer of our acquaintance who was very certain that the drouth, at least in clay soils, had not affected the clovers. Since then we have had another talk with the same party, and he went on to explain his position in this wise: "Mr. Root, the clovers have roots that run down deep into the ground. If there is a good catch, and the roots get fully started, the clovers will stand a fall drouth very nicely. What kills the clovers is not *drouth*, but too much water in the ground, and hard freezing, resulting in what we farmers generally call *winter-killing*. It would take six weeks of hard rain to wet the ground so that a severe winter would do very much damage to the clovers, and I do not expect it now. If we get a reasonable amount of snow and rain between now and next spring, I predict that we shall see one of the biggest years for clover honey that we have had for years. Of course, I admit that the young clovers may be killed out by fall drouth—that is, before the roots have got very much of a hold. But you must remember, Mr. Root, that we have just had a splendid season for clover, and the roots of the last season's plants have been pretty well extended down into the soil. No, sir; I do not think the conditions this fall have been unfavorable, but quite to the contrary."

We have been taking pains to make inquiries among several farmers. One in particular, and a bee-keeper as well, we approached somewhat after this fashion:

"What do you think is going to be the effect of this drouth on clovers?"

Said he, "Why, it is not going to hurt them at all. I am looking for one hundred extra colonies that I should like to buy, because I am expecting a big year, and I want *more bees*."

"But suppose the clovers winter-kill?" we interposed.

"Of course, that is possible," said he, "but not probable under the conditions."

And then, without knowing the opinion of our other farmer friend, he went on to state that a dry soil is less likely to kill the clovers by reason of cold than a very wet one.

We have approached other farmers, with practically the same result. While they are located in Northern Ohio, they gave it as their opinion that a fall drouth is not necessarily hurtful to clover.

Whether a sandy soil during a period of fall drouth would be more hurtful than a clay soil on clovers, we can not say; but we should be inclined to think that way. If so, this would go to confirm, in part, the fears of Mr. Hutchinson, whose bees are all located on a sandy soil.

We should be pleased to get reports from all over the country, as this is a vital and important question. It is possible and even probable that locality has very much to do with it; but as most bee-keepers are located on a clay soil, we hope the outlook may be more favorable than the editor of the *Review* has feared.

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### HAS THE SAN FRANCISCO HONEY MARKET BEEN QUOTED TOO HIGH?

In the *American Bee Journal* for November, p. 327, is a letter to editor York, which we here reproduce:

*Editor York:*—In the *American Bee Journal* for October, on the first editorial page, is a comment entitled, "The Honey Market Unusual," wherein it is claimed that comb honey stands firmly in San Francisco at 17 cents. By the way, I see GLEANINGS makes the same claim.

Now, the above quotation is very far from the truth, in proof of which I enclose two letters, one from a commission firm in Sacramento, and the other from a bee-keeper in Nevada. Note the commission man informs me that Mono County and Nevada have had big crops of honey. Well, I know that Mono County had less than 400 cases of comb honey; and Mr. J. W. Carter, of Nevada, informed me in September that this was the poorest honey season he had known in his bee-keeping experience of 17 years. So far as my own experience goes, this is my first season in this part of the country. H. CHRISTENSEN.

Coleville, Mono Co., Cal., Oct. 26.

We do not see any thing in this letter that really *proves* that the market has been quoted too high. While it is true that Mr. Christensen introduced the name of a commission firm as authority for the statement that there is a large supply of honey in Nevada and in Mono and Inyo counties, Cal., it is proper to remark that some commission firms biased by selfish interests make statements going to show that there are large supplies in sight when there are not.

Then Mr. C. introduces another statement, to the effect that a Nevada bee-keeper says all he can get is 9½ for the first grade of comb, and 8½ for the second, as tending to show that our quotations run too high. Over against these two statements Mr. Christensen states *on his own positive knowledge* that Mono Co. had less than 400 cases of comb honey, and that J. W. Carter, of Nevada, informed him that this was the poorest honey season he had known in a bee-keeping experience of 17 years. We can not understand why Mr. Christensen should discredit his own knowledge by introducing a claim from a party who may have an "ax to grind." Then it would seem to us that the statement from Mr. Carter ought to have as much weight as that of the other bee-keeper who said he could not get more than 9½ cents for the reason that the supply was large.

It is a rather significant fact in this connection that prices on California sage honey are relatively high in Liverpool, England. If there is so much honey available as the commission man in question would have us believe, why is it quoted high in Liverpool? and why does he not make a "big scoop" by buying up all the honey in sight and shipping it to England?

Another significant fact worthy of note is that the market in New York seems to be rather bare of California sage honey of any kind, and prices there are pretty well up. If there was an oversupply at Sacramento, or even San Francisco, it would naturally gravitate to the Eastern markets as it always has done. But the fact is, California honey in the East is not very much in evidence this season.

Our quotations for San Francisco were furnished us by the *Pacific Rural Press*—a journal which has no interest in quoting the market either high or low. We have heretofore found their quotations quite reliable; and with all the evidence in hand we are yet to be convinced, even on Mr. Christensen's letter, that the San Francisco market is quoted too high.

We shall be glad to hear from local bee-keepers in and about San Francisco, or, in fact, from all over California, for that matter. While we admit that we desire to keep prices up, we do not wish to do so if the facts do not warrant it.

# CONVERSATIONS WITH DOOLITTLE

SOME QUESTIONS ANSWERED.

A correspondent asks me if I will answer some questions through GLEANINGS. He says he is a novice in bee-keeping, and wishes me to simplify my answers so that even a novice can understand, taking it for granted that GLEANINGS has many readers who are little if any further advanced than he is. I think it best to answer his questions by number rather than in the usual conversational style.

1. I have been thinking of putting my 32 colonies all together for wintering, setting the hives so close together that the hives will all touch one another except the entrance part, which will face outward, packing underneath, on top and around the whole with chaff or old carpet, so that the heat of the whole will keep all warm and at an even temperature. What do you think of the plan?

*Answer.*—My fear would be that, during some warm spell in winter, they would become too warm, go to breeding, and eventually die of diarrhea and exhausted vitality. Some years ago one of our leading apiarists took fifty colonies out of their original hives and placed them in boxes made to contain four frames of sealed honey. On either side of these boxes wire cloth was nailed, and the whole fifty placed in one large box, which box was set on a car and run into his underground bee-cellar. The idea was the same as yours, that each would help maintain a mutual warmth for the whole, and thus save honey and promote good wintering. After all were in the box, old carpeting to the depth of four or five inches was placed over them, and they were left undisturbed for four or five weeks. The normal temperature inside of the cluster of bees during winter, when they are in really good condition, is from sixty to seventy degrees. At the end of five weeks the temperature inside the box was found to be above 90°, with the bees all in commotion, trying to get out to escape such a degree of heat. The car was run out the first mild day thereafter, and thousands of bees came out and died. The result was that two-thirds of the colonies were dead before the first of March, while on April 15 not one of the fifty colonies was living. This would go against your proposed experiment; but if you so desired you could try eight or ten colonies, as they might do better this way outdoors than in the cellar. It is always well, when trying new experiments, to use only a small part of our stock for the trial, and thus not make a serious failure by putting all our eggs in one basket.

2. Is early pollen necessary to successful bee-keeping?

*Answer.*—From my point of view I should say yes. The first pollen in spring in this locality comes from skunk-cabbage, followed by pussy willow, soft maple, and elm. This pollen stimulates the bees to brood-rearing and great activity, upon which much of the profit of the season depends. The next source of pollen comes from the hard maple, this coming into bloom a few days before the fruit-trees. This source gives an abundant yield of pollen; but I have noticed many times that, where the first mentioned are killed by frosts, the bees are not in nearly as good shape at time of fruit-blooming, no matter how favorable the weather between blooms may be, as is the case where any one or all of the four first named give the bees a chance to store from them. In selecting a location a person should know that some one of the early-pollen producers are present if they are to expect the best possible success. Artificial pollen, such as rye or oat meal, can be substituted, but none of them can ever take the place of natural pollen as a stimulant for bees. In years when the early pollen was killed by frost I have fed the bees meal; and, while it was a pretty sight to see thousands of bees at work in the meal, and hovering over it while it was being packed in the pollen-baskets, yet a much smaller amount of brood would be reared under precisely the same weather conditions than when the bees had access to natural pollen.

3. The past summer I saw a bee dragging out a dead drone, and when she came to the edge of the alighting-board she flew some ten or twelve feet, carrying the dead drone with her. Does this not show that a bee has strength greater in proportion than man?

*Answer.*—Yes. Bees have a most marvelous power when that power is compared with man or even a horse. If the apiarist had even half the strength in proportion to that which the bee has, none of us would complain about lifting heavy hives, or be experimenting with hive-lifting devices. But, after all, man is much superior to the bee in that he brings and makes all the forces of nature subject to him.

4. I wish you would tell the readers of GLEANINGS how to avoid being stung. A man who once met you at a convention said you told him that you did not now receive one sting to where you did twenty when you first commenced to keep bees. Is it the kind of bees you keep?

*Answer.*—Bees are cross sometimes, and cross bees often sting. Some classes of stings are unavoidable. A bee may become so infuriated as to strike without warning, and sting as it strikes. However, bees must be badly provoked to do this, and *never* do so except as the object of their disturbance is near their hive or home. The novice in apiculture is generally quite inclined to think bees are roaming around, bent only on stinging every thing far and near. This is not so, for a bee seldom ventures an attack ten rods from its hive, and very seldom then unless its hive has been molested. Besides the unavoidable class of stings caused as above, the novice, by his way of provoking the bee, is apt to get many more. If a bee having an inquiring mind comes looking around the face or hands of such a person, the first thing he does is to begin striking at it, which only tends to irritate the bee. Every move makes the matter worse. Shrieking, beating the air, and tearing insanely about, as very many are apt to do, are only so many steps leading to a melancholy and almost certain result. When such a bee comes near, instead of doing as above, gently incline the rim of the hat toward it; and if it still persists in buzzing about the head, put the hands or arms up before the face and walk quietly away from near the hive, when the bee will soon leave you. If several attack

you, use this same way; and as soon as you are a little way from the hive, put your head (protected by the arms at the face) in some leafy bushes which may be near by. Or in the absence of the bushes, go prone, face down, on the ground, when in a few minutes all the bees will leave you, and you can walk quietly away. Of course, when you are at work with the bees it is best to wear a veil, which is all the protection you need if you are careful with your work with the hives. Be careful about jarring the hive before you tell the bees you are there by giving them a puff or two of smoke at the entrance, and, above all, avoid the killing of bees, as the poisonous smell that fills the air where bees are crushed is one of the quickest ways to irritate them.

# NOTES FROM CANADA

By R. F. Holtermann.

### ROBBING.

I found by accident that, for covering supers of honey in the apiary at robbing time, the best material is a felt cloth loosely put together. The bees appear to be afraid to alight on it. I suppose it looks to them about as inviting as a loose brush-heap looks to a man for strolling through.

### FINDING QUEENS IN POPULOUS STOCKS.

At the last Norfolk County Bee-keepers' convention held recently at Simcoe, F. J. Miller, President of the Ontario Bee-keepers' Association, gave his method of finding a queen in a populous colony, mentioning the method specially in connection with finding queens for clipping. He instructed the bee-keepers to give the colony a fairly sharp smoke at the entrance of the hive. The bees will roar, and the sound is to be noted. In about 2½ minutes the bees should be given a *few* more sharp puffs at the entrance so they will again roar. The moment the roar changes from the sharp to the lower note, the queen, in a hive not deeper than the Langstroth, will be found in the bee-space below the cover. Mr. Miller stated that the colony must be strong if this method is to be a success, but that such colonies were the very ones in which it is difficult to find the queen.

### REQUEENING.

I made the statement at the same convention that there is less need for bee-keepers to requeen the colonies where there is a fall flow. The bees, in a locality having a fall flow, are much more apt to supersede defective or failing queens themselves during this flow. The first time I saw an apiary during a good buckwheat flow was when visiting Mr. C. W. Post. He at that time showed me in one apiary eight colonies in which mother and daughter were laying in the same hive.

### BASSWOOD POLLEN.

Some time ago a highly valued friend and well-known contributor to Gleanings made the statement that basswood has no pollen. I tried to point out that, according to nature's laws, this would be impossible. The United States Department of Agriculture has issued a Bulletin (No. 110) which Dr. Wiley has been kind enough to send to me. This includes "A Microscopical Study of Honey Pollen," by W. J. Young, assistant, Microchemical Laboratory. On page 79 (Fig. 6) we find illustrated the pollen grains of basswood. This surely settles the matter. It might be instructive for Gleanings to reproduce illustrations of some of the pollens in which bee-keepers are most interested.

### STOPPING UP LEAKS IN HIVES.

When moving bees I always carry about me an assortment of nails, crate-staples, and a hammer. I formerly had convenient strips of wood to stop up leaks; but for over a year I have used for this last purpose cotton-batting. For this purpose it is superior to any thing else I ever used. In a moment it can be broken into any size; it can be made to fit any opening; it sticks well where put, and it is so loose in texture that the bees prefer to leave it alone. I also have the smoker going, especially in the early part of the trip. I am giving this information because the idea has been of value to me. Some readers of Gleanings think I have a lot of rough uneven hives; but this is not the case. Accidents will happen in the best-regulated houses, and it is well to be prepared for them.

### TURNING LOSSES INTO PROFIT.

W. S. Manley, at the National convention at Detroit, stated that it seemed to be a rather difficult matter to turn losses into profit; but that a loss can be turned into profit whenever one has to go through an experience in which the first loss prevents him from making the same mistake again. Friend Manley lost his bees, and his neighbors lost theirs because the stores gathered in the fall were not good. Of course, he wisely decided that there was no use in losing the wax and combs as well as the bees, and he therefore melted them up for wax. However, he concluded that this was a rather expensive way of getting wax, and he now feeds sugar syrup to the bees for winter stores. He either has combs filled earlier with sugar syrup, and shakes the bees upon them after the frost has stopped the honey-flow, or he shakes the bees upon empty combs, and in an empty super or body underneath he puts an open feeder with warm syrup. Even in pretty cold weather the bees, feeling the heat from the warm feeder underneath, will store the syrup for winter.

This fall I fed syrup made by stirring 2½ parts by measure of sugar into one of boiling water, adding a teaspoonful of tartaric acid to every 13 lbs. of sugar. Such sugar does not require much evaporation; and if the brood-chamber is contracted so the bees will cover their combs and stores they will be in the very best condition for winter.

Of course, we should all have an ideal. Circumstances, such as lack of time, may prevent us from doing what we know to be best. All we can do is to aim at the ideal we have set before us.

# GLEANINGS FROM OUR EXCHANGES

By W. K. Morrison

### THE CONSUMPTION OF BEESWAX IN FRANCE.

According to the *Revue Eclectique d'Apiculture*, of Paris, there is a large production and consumption of beeswax in France. In round numbers the annual production is about 2,000,000 kilos, or 4,400,000 lbs. The importation is over 250,000 kilos, or 550,000 lbs. The imports are contributed by Spain, Dominican Republic, Turkey, Low Countries, Japan, Haiti, Cuba, Madagascar, Algeria, Tunis, Morocco, French Indo-China, French Protectorates, and various foreign countries. The maximum tariff is $2.40 on 220 lbs., and the minimum $1.60 per 220 lbs., or less than one cent a pound on the average.

### MORE ADULTERATION.

Not long ago the national pure-food inspectors seized 1656 cans of adulterated molasses at Memphis, Tenn. It was marked "Early Bird Brand Sugar House Molasses," put up for W. C. Early & Co., Memphis, Tenn. On analysis by the Bureau of Chemistry it was found to be nearly 50 per cent glucose, and therefore misbranded. An action was commenced in the western district United States Court for Tennessee; but the defendants decided to waive a trial, and allowed the goods confiscated by the Department of Agriculture. A curious feature of this case is that Early & Co. could have escaped the law by labeling their syrup "corn syrup," though it is composed of equal parts of molasses and glucose, and never saw "corn." If bee-keepers will look around the grocery stores in their neighborhood they will probably discover more cases of this kind. Of all offenders against the law, glucose is probably the worst. A kindly warning would put the grocer on his guard.

### THE TARIFF ON HONEY AND BEESWAX.

The tariff is a two-edged sword—it cuts both ways. We now have a tariff on honey coming into this country, yet the price is lower in the United States than it is in England, which has no tariff. France also has a tariff, and the price is lower than it is in England. Beeswax is higher in price all over Europe than it is here. In England I should say the price (on an average), judging by the market quotations, is about 5 cents higher than here. Why is this so? I think it is due to the higher esteem in which these products are held on the other side of the herring-pond.

Large amounts of paraffine, ozokerite, Japan wax, and other substitutes for real beeswax, are used in this country, and this has a tendency to make lower prices. It therefore strikes me very forcibly that no tariff on beeswax will be effective unless there is an equal or greater duty on substitutes for beeswax. Personally I should like to see a heavy duty levied on these substitutes. In most instances they are used to keep the price of beeswax down. Let us not launch a boomerang by asking for a tariff before the substitutes are dealt with.

### THE PURE-FOOD LAW.

Dr. Wiley recently stated to the Sphinx Club, of New York, that obtaining purchasers for adulterated food came within the purview of the officers charged with the enforcement of the pure-food law. It is presumed the matter of misleading advertisements will be taken into consideration in making out a case against a violater of the law. This will to some extent prevent quibbling about the label. For example, some dealers in groceries still advertise "California Honey Drips," conveying the impression to the unsophisticated buyer that he is buying strained honey from California, when, as a matter of fact, it is neither more nor less than our old enemy glucose masquerading under another name. It is to be hoped every reader who sees this will call the attention of the pure-food authorities to all violations of this nature that in any way affect the honey business. A little missionary work of this kind will help up the price of honey all over this broad land. The word "honey" is the property of bee-keepers and no others.

### A CONTESTED DECISION.

They have legal squabbles in France as well as in this country over runaway swarms. In the August issue of *L'Apiculteur* a Miss Brunet criticises the opinion rendered by a justice of the peace in the third canton of Brest. However, in the November issue the editor, after a careful study of the case, comes to the conclusion that the judge was peculiarly fit for his work, and his verdict unattackable. Briefly this was his decision:

1. To maintain his property rights the owner of a swarm must pursue it very closely if it leaves.
2. The rightful claimant is the one who saves it.

Most Americans will agree that this is good sense if not good law. This seems to be the essence of the judge's opinion, who took the law of 1889 as his guide in the matter. The editor thinks it would be a good thing to have the opinion of the Court of Cassation on a case of this kind. The latter is similar to our Court of Appeals or the Supreme Court.

### THE VALUE OF CERTAIN FOODS.

Some wonder why honey prices are higher in Europe than in America. The reason is not far to seek. The inhabitants of nearly all European countries value honey higher than we do, and are, consequently, willing to pay better prices. Fine grades are strongly competed for, especially by the well-to-do and rich. It is not so in this country to the same degree. One seldom sees honey on the tables of the best hotels and restaurants in the great cities, even when the proprietors send to Europe for all kinds of dainties. Some foods are overestimated. Oysters are thought by many to be very nourishing, when, as a matter of fact, they are poor in nutrition. Eggs are often overestimated. Cheese is usually underestimated. Milk is underestimated by most people in America, and Europe too. Meat extracts may not be nutritious, though many persons think these things must be extremely valuable as food. Honey has the merit of being very

nourishing, and at the same time very palatable, causing it to be well received by the digestive system. It is not spoiled in cooking as many good foods are.

### SWEET CLOVER COMPARED WITH OTHER CLOVERS FOR FEEDING STOCK.

That great journal, *Hoard's Dairyman*, of Ft. Atkinson, Wis., in its issue for Nov. 13, contains a striking editorial on sweet clover. Briefly, it is a *resume* of what had formerly appeared in that journal by Prof. Ira M. Buell, of Beloit College, Wisconsin.

The editors say there is a close connection between clover, alfalfa, and sweet clover, not only botanically but chemically, as an analysis taken from the "International Encyclopdia" will show. Here it is:

| | CLOVER. | SWEET CLOVER. | ALFALFA. |
|---|---|---|---|
| | | In the green growth. | |
| Water | 70.8 | 76.5 | 71.8 |
| Protein | 4.4 | 2.8 | 4.8 |
| Fat | 1.1 | 0.4 | 1.0 |
| Nitrogen, free extract | 13.06 | 12.1 | 12.8 |
| Crude fiber | 8.1 | 6.6 | 1.4 |
| Ash | 2.1 | 1.6 | 2.7 |
| | | In the dried state. | |
| Protein | 14.9 | 12.0 | 13.7 |
| Fat | 3.8 | 1.7 | 3.6 |
| Nitrogen, free extract | 44.3 | 51.4 | 46.2 |
| Crude fiber | 27.1 | 28.9 | 26.7 |
| Ash | 7.1 | 6.8 | 9.7 |

In these tables the sweet clover comes off as slightly better than either clover or alfalfa as to food value. As a matter of fact, its rank taste is largely due to an excess of nitrogen as compared with its fat and ash content.

#### RELISHED BY STOCK.

*Hoard's Dairyman* is fair, however, and says that the young growth is quite palatable, and resembles asparagus. The taste depends largely on condition and seasonableness; that is to say, it must be cut at the proper season—a rule which applies to other crops as well. It also says, however, that sweet clover is somewhat repellent at first, especially to cows, but is usually easily overcome, so that it is greatly relished. Horses are said to be especially fond of it.

#### ITS DISTRIBUTION AND HISTORY.

As to its distribution and history, the *Dairyman's* knowledge is very full. Its native home is Central Asia, so that its cradle is the same as that of the human race. Homer, the great poet, noted it growing on the plains of Greece and Asia Minor, and he tells us that the horses of the Greeks were fed on it at the siege of Troy. It is said to be still raised in the East, being grown in the same manner as alfalfa—by irrigation—and used for the same purposes. The name, "melilotus," means "honey-blossom," and is common to both the Latin and Greek languages. Pliny wrote very accurate accounts of it, telling of its uses and distribution, and gave a more extended description of it than most of our botanies. In his day it was highly esteemed as a honey-plant and as a medicine, and even now it is highly valued as such by Europeans.

#### OTHER SPECIES.

Other species of melilot are also prized in Central and Southern Europe. In Switzerland the fine flavor of the dairy products is largely due to the presence of sweet clover in their pastures. Long ago Asa Gray showed that, in its new home, sweet clover showed a striking increase in strength and vigor. This shows its adaptability to new conditions.

As regards its use as a fertilizer, the editor closes with this significant paragraph:

> The use of the bacteria-supporting legumes for the maintenance of the fertility of our farms is one of the most promising fields for agricultural experiment. It is well to know that we have right at our own doors the most hardy, rank-growing members of this class, and one that promises the largest increment of fertilizing matter from its growth.

Now where are the people who say sweet clover is a *weed?*

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# BEE-KEEPING AMONG THE ROCKIES.

By Wesley Foster.

Mr. Scholl, you say in the Oct. 15th issue that comb honey goes at double-first-class freight rate. Comb honey takes the first-class rate when the glass is protected. Tack a separator over the glass.

### LOCATING AN APIARY.

A dry knoll covered with buffalo grass, and above irrigating-ditches, is my favorite choice for a bee-yard. There are no weeds to cut, nor is there any danger of being drowned out by some careless irrigator. The swarms usually alight on one of the fence-posts, and are quickly seen. There is one serious objection to a knoll; it gets all the wind, and we have *wind* out here in the winter. When the farmers burn the grass along the ditches the fire often gets away from them, but there is little danger if the apiary is on a buffalo-grass plot, for there isn't enough grass to set a hive on fire, ordinarily.

### RETAIL PRICES OF HONEY IN COLORADO, ESPECIALLY DENVER.

No. 1 white comb honey retails at 20 cts. per section, or 2 for 35 cts.; No. 2 and poorly graded goods bring 15 cts. Some cull honey sells at 12½. Extracted honey in glasses holding from 5 to 8 oz. sells at 10 cts.; ½-pint jars bring 15 to 20; pint jars retail at 25 to 30. There is considerable honey in 1-lb. jars (some with a piece of comb inserted in the honey), selling at 25. Seven or eight carloads of comb and extracted have been brought into Denver, and I think the market here is very well supplied.

### COLORADO STATE BEE CONVENTION.

The Colorado State Bee-keepers' Association is to hold a convention, "a round-up," and a lot of new honey-money-making ideas are to be roped, tied, branded, and taken home to be put into practical operation by any who can fall into the fellowship feeling of a round-up, and can tell a young unbroken well-bred bee idea when they see one. We will meet at the American House, Denver, Dec. 8, 9. This convention will not be quite as long as usual, but there will be less chance for good ideas to take to tall timber between sessions. All are asked to send in

questions on which light is wanted; and, as one of the program committee, I will try to find some "live wire" bee-man to furnish the power.

LECTURES AT FARMERS' INSTITUTES.

Pres. Collins, of the State Association, has been engaged to lecture before the Farmers' Institutes conducted throughout the State by the Agricultural College located at Fort Collins. Mr. Collins' subject is "Bee-keeping for Profit." He will do a great deal to raise the standard of bee culture in the State and the West. The bee-keepers certainly appreciate the work the College is doing for their benefit; and Prof. Gillette, who initiated the work, is to be thanked for his interest along this line. Mr. Collins is well fitted for the work. He is a forceful public speaker, arousing interest quickly, and he has made a success of bee culture.

COMB-HONEY GRADING, EASTERN AND WESTERN.

I agree with the editor that the illustration of comb-honey grading on page 1316 is interesting. Now, according to the rules adopted by the Colorado State Bee-keepers' Association last year, the top case and section would be in the No. 1 grades, either white or light amber. The middle section is not evenly capped. The unevenness was likely caused by a lull in the honey-flow while the section was being filled. This unevenness would place the middle case in the No. 2 grade. I have not mentioned weight here, for I can not tell weight from a picture. The lower section is not sufficiently capped to be put in any grade, and would be called cull honey. There are over one hundred unsealed cells on the visible side of this section, exclusive of the outside row. I infer that the sections represent the contents of each case beside which they stand.

CROWDING BEES TO SECURE ENTIRE CAPPING OF SECTION HONEY.

I would not say it is practicable, that it pays, or that it is very necessary to crowd the bees to secure better capping of honey. Tiering up supers, if understood, will result in much of the honey being capped as is the top case in the illustration on page 1316, Nov. 1.

The editor says the tendency is to boost the gradings, putting them a little higher than they deserve. Conscientiously following the rules, and when in doubt putting the doubtful section in the lower grade, will start the tendency toward the other and better way.

DROUTH INCREASING THE FLOW OF NECTAR.

I notice occasional reports of short crops on account of drouth. The season of 1908 is the dryest I have ever known, and yet I averaged 133 4x5 sections to the colony, which is the best yield I ever had. At the beginning of the season I had given up all hope of much surplus; but as the weather continued dry the bees kept working until the aster and goldenrod ceased to blossom. I can't see that the drouth had any effect except to increase the flow.

Ashtabula, O. THOMAS CLARK.

# GENERAL CORRESPONDENCE

## WHAT HIVE TO ADOPT.

### A Discussion of the Merits of Different-Sized Hives, Taking into Consideration the Man, the Methods, and the Locality.

BY E. D. TOWNSEND.

*Continued from last issue, page 1372.*

The size of a hive is much more important than the shape. A well-shaped hive is important only because it is more convenient for the apiarist. In outyards every hive should be the same, for a variety of sizes and shapes is an abomination. I have had experience with different sizes; but every one of my extracted-honey colonies is now in a ten-frame factory-made Dovetailed hive, and every super is the same as the lower story or body, so that all are interchangeable. I use ten Hoffman frames in the bodies, and eight loose hanging frames in the upper stories, the eight frames in the ten-frame super making 1¾-inch spacing, so that all combs are bulged.

Mr. J. N. Harris, of St. Louis, Mich., has two or three outyards in the northern part of the State. A part of the colonies are in eight-frame hives, and the rest in twelve-frame, these twelve-frame hives being the only ones I know of in the locality. Mr. Harris is an old veteran at the business, and he is very thorough in his work with his bees. For instance, every comb that he has is built from wired foundation; and if it happens there are too many drone-cells in any one comb, that comb is replaced with a full sheet of worker foundation. Now, if he goes to this trouble to keep his combs in good condition, it is evident that all the other work around the bees must be done in the same thorough manner. Since he winters the eight and twelve frame colonies in the same cellar, and manages them through the season as nearly alike as possible, Mr. Harris is in position to tell which hive is the best to adopt with his system of management in his locality, especially as he has only one object in view—the securing of the most extracted honey with the least expenditure of labor and expense.

Mr. Harris says that colonies in the twelve-frame hives go into winter quarters with more bees than those in the eight-frame hives, and also that they come out much stronger in the spring. He has found that he can count on having about eight combs of brood in the twelve-frame hives, and only six in the eight-frame; so that the twelve-frame colonies have about 25 per cent more brood than the eight-frame. I wish Mr. Harris could have tested the ten-frame hive in connection with the eight and twelve frame, for it would seem to me that if he got 25 per cent more brood in the twelve-frame colonies than in the eight-frame, then the ten-frame hive with the same management should give him only one comb of brood less than the twelve-frame, and one more than the eight-frame. The best point in favor of the twelve-frame hive is that it is so large that he does not need to do so much "fussing" with them as with those in the smaller hive, and he is

able to attend to more colonies, getting more honey per colony. He keeps all the colonies he can attend to himself, instead of depending on any help to care for a larger number. Mr. Harris has used fifteen and sixteen frame hives; but he could not see that they offered any advantage over the twelve-frame size, while they had many disadvantages.

Twenty-four combs filled with honey and brood will cost the same, whether coming from two twelve-frame hives or from three eight-frame hives; and there is not very much difference between the cost of the two twelve-frame hives and the three eight-frame hives. Mr. Harris says that he secures the same amount of surplus honey from three eight-frame colonies, which, at a given time previous to the honey-flow, have five combs of brood each, that he secures from two twelve-frame colonies each having eight combs of brood at the same time before the honey-flow. Now, as he has said that he can produce six combs of brood in the eight-frame hive to eight in the twelve-frame hive, it will be seen that the eight-frame hive is still ahead, taking into consideration the number of frames in the hive. In other words, it would take fewer bees to gather the honey in a given locality in the eight-frame hive than in a twelve-frame. If I were selling bees I would ask about the same money for 60 or 65 colonies in twelve-frame hives that I would for 90 colonies in eight-frame hives; and the surplus-receptacles for each lot would probably sell for about the same.

The Langstroth frame being the standard, I think that eight Langstroth frames make a small hive; twelve make a large hive, and ten a medium one. Other things being equal, a two-frame nucleus in proportion to the number of combs it contains will store just as much honey as a colony in an eight-frame hive, and considerably more honey than a colony in a ten-frame hive, and, of course, much more yet than a colony in a twelve-frame hive. This comparison is based on the ability of the queen to keep the different sizes of hives stocked with eggs, and on the disposition of the workers to take care of the eggs and brood afterward. An ordinary queen will fill a ten-frame hive with brood; but it is rare that a queen will use all of the room in a twelve-frame hive. Bees on ten frames of brood will store the same amount of honey whether the brood is all in one hive or divided into two parts and in two hives. It will be seen by this that the number of combs of brood and bees we have at the beginning of the surplus-honey flow determines the amount of honey that will be brought in, regardless of the size of the hive. Generally speaking, the smaller the hive the more honey will be placed in the super.

After satisfying myself that the eight-frame hive was large enough for the average queen, I made up my mind to use the ten-frame hive, the two additional frames being principally for honey. Although these two extra frames may contain brood in some cases, they were usually filled with honey and comb—a reserve fund, so to speak; and with this reserve on hand our colonies will not have to be watched as closely in regard to stores, and are thus better equipped for outyard service, where they may be left by themselves at quite long intervals at times.

It is possible for the expert honey-producer to make a fair success with almost any size or shape of hive, and in almost any location; but it is very convenient to have the hive conform to the system that is best for the special location.

Remus, Mich.

## THE ARGENTINE ANT.

### A Possible Pest of the Apiary.

BY RALPH BENTON.
*Assistant Entomologist, University of California.*

What we have to say in regard to the Argentine ant as a possible pest of the apiary is necessarily somewhat in the nature of a conjecture, since we have not yet been able to locate within the infested areas of the State any apiaries of commercial size upon which to make observations. There are upon record, so far as we know, no extended observations upon the effects of the inroads of this pest in Louisiana and Mississippi upon the bee-keeping industry of that region. Knowing of his interest in bee-keeping matters, we have written to Professor Newell upon this subject, but have not yet heard from him in reply.*

Meanwhile we have had under observation for several weeks past in the infested area in East Oakland two small apiaries, both of them not far from the seat of the University investigations, the Oakland formicary. The first of these apiaries consists simply of two colonies of bees in frame hives located in a vacant lot, and placed some two feet off the ground on a bench. There are at the present time no traces of ants in or about the hives, and the only clue that we have that ants have troubled them is that one of the colonies is quite weak, coupled with the fact that the legs of the bench have been placed at some time in cans filled with water or oil. The second apiary consists of some half-dozen hives ranged out on a bench some 18 inches off the ground beneath several spreading and low-hanging lemon-trees. Upon examining the citrus trees it was found that they were well infested with yellow scale, and that myriads of Argentine ants were passing to and fro upon the trunks and limbs of the trees. The apple-trees in the immediate vicinity were also examined with similar results — myriads of ants colonizing and caring for an extended infestation of woolly aphis.

On approaching the colonies of bees, and examing them more closely, we found numbers of ants busily going and coming, as is usual with

*Since the preparation of this paper, Professor Newell has been heard from. He writes that he has not had any experience with the pest in question in large commercial apiaries; but further that, to his knowledge, several parties keeping bees in a small way in New Orleans have entirely given it up, finding it impracticable to protect the bees successfully from the ants. His own personal experience is significant, of which he writes as follows: "I have six colonies of bees here at Baton Rouge, and have had occasion to notice the vigorous manner in which the ants attack the larvæ in the hives and carry away the stored honey. Thus far I have protected the colonies by placing each colony upon a stand having four legs, each leg being placed in a dish of water. This water has to be renewed every few days unless there are continuous rains, for the ants will cross it as soon as any scum or dust film appears upon its surface." This experience of Professor Newell's, if any thing, puts a more serious face upon the Argentine ant as a possible pest in California, for here we have commercial apiaries that will be inevitably invaded unless heroic measures are taken by the State, looking toward restriction or eradication.—R B.

them, in regularly established ways. They were seen to be patroling all crevices, and were quite active about the entrances to the colonies. Wherever the ants and bees came in contact the latter appeared very excited. This excitement was manifested by an incessant buzzing of the wings, emitting a peculiar note on the part of the bee indicative of her irritated yet helpless condition. The ants boldly approach the bees as the latter seek to patrol the entrance or other opening, and, catching the bees by the legs, wage an assault. The bees, enraged, frantically keeping up their buzzing, helplessly run about in an effort to release themselves, frequently being forced to take to their wings before being able to ward off the attacks of their little adversaries. So far as I was able to observe, the general appearance being to the contrary notwithstanding, the bees in all cases were holding their own, the judicious caution of the ants leading them to refrain from actually entering and invading to any great extent the colony. Subsequent examinations of the interiors of the colonies have confirmed this observation. In one colony the ants had established a regular runway across the bottom-board of the hive, but in only one instance were ants to be seen crawling on the combs of one of the colonies of bees, and then only two ants were observed making their way along the lower edge of a comb.

One of the colonies, perhaps unfortunately for itself, but certainly fortunately for the purpose of my observations, contained several extended crevices half an inch or so in width across the corner. As might be expected, the bees had tried to fill these crevices with propolis and wax quite as likely in defense against robber bees as perhaps against the ants. There were, however, a sufficient number of openings to permit of the egress of bees which were continually passing out and irritatedly buzzing as previously described. On removing a wedge from one of these crevices, thus enlarging the opening, the colony immediately threw out an extra force of police bees in defense against the ants; but, to my surprise, these bees did not seem angered toward me. In fact, I used every reasonable means to anger them individually, going so far as to pin them down to the hive-cover with my finger, all of which only apparently contributed to their antagonism against the ants. This, I say, was surprising to me, for it was somewhat contrary to my previous experience with bees when antagonized by ants.

When in charge of the experimental work in apiculture at the Montana Agricultural Station during the years 1901 to 1905, on several occasions the apiary became troubled with ants. One summer this was particularly true, and we observed the ants, which, of course, were much larger than the Argentine ant, catch and literally cut up live bees about the entrances and carry them away to their nests. This so enraged the bees that it was almost impossible to work with them, and for this reason rather than from any particular fear that the ants might overcome the bees, we resorted to the use of carbon bisulphide in the nests, which had been steadily growing until the entire apiary, which was, of course, a small one (less than fifty colonies), was encircled. This proved itself an effective remedy against the ants in question; but in the case of the Argentine ant the lack of a centralized nest or colony, coupled with its migratory habits, of course makes such a remedy hard of effective application.

From the data here presented, which, of course, is not very extended, and so can not be regarded as conclusive, it would seem that the danger of the Argentine ant as a pest in the apiary would in most instances lie in their interference with the work of the bees rather than in actually overcoming and destroying strong colonies. Fortunately it is the habit of the bees to store their honey as remotely as possible from the entrance of the colony; and if the bees are kept in well-made hives in which there are no crevices for entrance on the part of the ants, a strong colony can undoubtedly defend itself, there being an ample number of bees for the patrol of the entrance. It may be true that, in the case of very weak colonies, incapable of defense, the ants might be able to gain an entrance, and thus destroy, starve, or force the bees to vacate. Indeed, there is one and perhaps two empty hives in the apiary, under our observation, which might lead one to this supposition. The apiary, on the other hand, is a neglected one, and there may be other causes for the loss of the colonies in question. On examining these empty hives we were somewhat surprised to find in one of them sealed honey alike undisturbed by the ants or robber bees. This condition of affairs might be due, however, to the fact that the honey cited was granulated, and so in a measure inaccessible. In any event, from present evidences we can not feel entirely safe in attributing the loss of these colonies to the Argentine ants, although the ants may have been a factor. We believe that the ants might and do become troublesome enough to the bees of an apiary to interfere seriously with the field work of the bees, and so prove themselves the cause of almost inestimable loss to the bees and apiarist alike. A fact readily appreciated must also be borne in mind —that the annoyance and even injury so persistent a pest as the Argentine ant would accomplish about the honey-house and shop of an apiary would be considerable. This would be especially manifest in the handling and storage of honey, particularly in the event of the production and care of comb honey. We have known of apiaries in this State where the common black ants have been very troublesome about solar wax-extractors, necessitating the placing of the legs of the extractor in cans of oil. It is needless to conjecture what the Argentine ant might do or become under similar conditions. In any event it must be remembered that our California infestation of the Argentine ant is as yet largely in the stage of simply a household pest, and that, when the acute stage of the infestation of orchard and field, found now in Louisiana and Mississippi, is reached on this coast, our attitude toward the Argentine ant as a possible pest of the commercial apiary may be changed. The development and growth of our ant problem is one which every apiarist in common with the orchardist and agronomist ought to and will watch with interest.

[These ants have been described in GLEANINGS before by Mr. O. O. Poppleton aud myself. The remedy is to put the hives on benches, the supports of which are set in a pot of tar. There are only a few places in this country where these ants will prosper — that is to say, in sub-tropical sec-

tions. I doubt if they will do any real harm. They will kill off all wild bees, and apiaries poorly attended to will suffer. They are carnivorous ants to a great degree, preferring a meat diet, but will eat sugar, honey, grain, etc. They like a larva in preference to an old bee, hence they make desperate onslaughts on the bees till they get at the brood. Possibly they are a blessing in disguise.—W. K. M.]

## BEE-KEEPING IN RIO GRANDE DO SUL, BRAZIL.

### Much Loss, Probably Caused by the Honey from the Herva Lanceta; Some of the Enemies of Bees.

BY A. L. GREGORY.

The last season here was hard on bee-keepers, at least in many places. The writer, for example, secured some pure Italians and got them off to one side and began raising queens. All went well until near the middle of our summer when dry weather set in. We did not fear that, however, as the catclaw gives bloom right along; but there is a plant here called *Herva lanceta* which we have nicknamed "Brazilian goldenrod." This soon began to bloom; then we noticed that our bees began to die. Soon we found some dead queens; then more disappeared, until the hives became weak from loss of bees and queens; then our hopes went down to the zero-mark. When a queen died, the bees would try to raise another; but finally they all had to die. Each hive was left with more or less honey in it, so we extracted this, which tastes excellent, and does not make us sick. We noted that there was no disease in the brood; but when young bees hatched they soon died, or got so weak they could not walk straight, then died.

In our vicinity (near Santa Maria) all bee-men fared badly. One old German who had 39 hives now has 3; another, with movable frames also, had 62 hives and lost 57. We could cite case after case where bees died leaving hives full of honey.

When a hive got to be sufficiently weak, then the little black wasps and small black bees which we call *irapua* (described below) would come by thousands and attack the hive, actually laying hold on Miss Apis Mellifica and dancing her out of her home.

Bee-keepers have noticed for some years that, when the *Herva lanceta* blooms, there have been some losses in the apiary; but they have never experienced as much loss before. Where the writer had his Italians there was much of this *Herva lanceta* in some thrown-out land, hence the loss in his case of all he had. There remains much to be studied in this thing; and as the average Brazilian is too much at his ease to exercise himself about such small matters, it remains for foreigners to put themselves to the task.

There are other theories for this year's loss. One is that the locusts, which ate every thing in the spring, left a poison behind. Another is that the red bee-louse killed them; but these were very few, so could not be the cause. Some of the best bee-men are free to confess they do not know the cause. The writer thinks it was the *Herva lanceta* that caused the loss in his case.

Bee-keeping is at a low tide in Brazil, though now the governing powers are trying to interest the common people in this marvelous industry in which there are not only dollars and cents but pleasure every day of the year.

The climate in this most southern State is about like that of South Texas. Seldom do we have more than half a dozen frosts a winter, and these are usually in July and August, the latter of which is our most disagreeable month. The poor Brazilian women have a saying that they would like to be dead during this month. We suppose they mean they would like to hibernate during this month as does Mr. Bear.

#### THE IRAPUA* BEES OF BRAZIL.

These small, black, long-legged bees mentioned above are not provided with a sting as are bees in general; yet they are not without a means of defense, being given by the Creator a strong jaw. They catch hold of the enemy like the ant, for example. They carry on their hind legs a sticky secretion which, coming on the wings and legs of the insect antagonist impedes locomotion and prevents fight. The irapuá makes its nest usually in a small bush near the ground. The shape is somewhat like a big gourd inverted. The composition is the same as a wasp-nest, but has compartments and several entrances. The honey is stored in round cells the size of a hen's egg. The writer has not much love for the honey, as the bees will visit any carcass; and from the hundreds which go there it is clear they carry something away with them. This bee is one of the enemies of our honey-bee when the hive becomes weakened. When they decide to attack a hive they come by thousands and boldly enter, catch the honey-bees by the leg or wing, and drag or chase them out of their hive, take possession, station sentinels, and begin carrying out the honey. They even stay in the hive over night, so sure are they that "might makes right." One of these little insects is more than a match for Miss Apis Mellifica in a knock-and-scramble combat. Many times has the writer seen a honey-bee pulled out of its hive, glad to fly away from the intruder and victor. Sometimes one may see a dead irapuá hanging to a shy apis.

There is also another enemy to our bees in the small black wasps. These, however, are not so bold as the bees we have described. They also build a paper nest resembling that of the hornet, divided into many parts, and store honey in the same cells in which they raise their young. We have other bee-enemies, such as the dragon-fly, and many kinds of birds and ants.

The bee business can, notwithstanding all these enemies of our little pets, be made profitable by the painstaking bee-man, of whom we need a host in our big Brazil.

Taquary, Rio Grande do Sul, Brazil.

[South Brazil can do big things in the bee line when conditions favor. As to tropical Brazil, that's another matter. *Apis mellifica* is subject to too many enemies to be a great success. The stingless bees have the American tropics preempted.—W. K. M.]

* Accent on the last *a*.

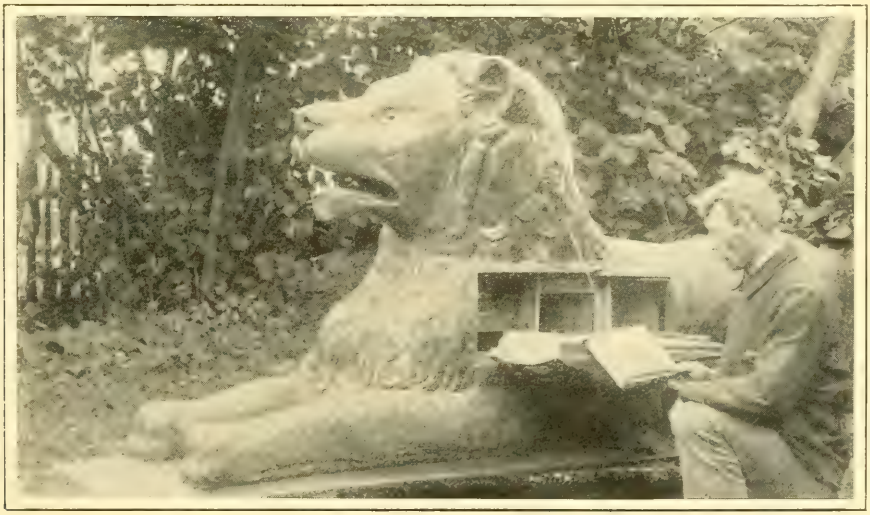
CURIOUS HIVES MADE BY A GERMAN SCHOOLTEACHER.
—*Courtesy of the Independent.*

## NOVEL BEE-HIVES.

BY MAX A. R. BRUNNER.

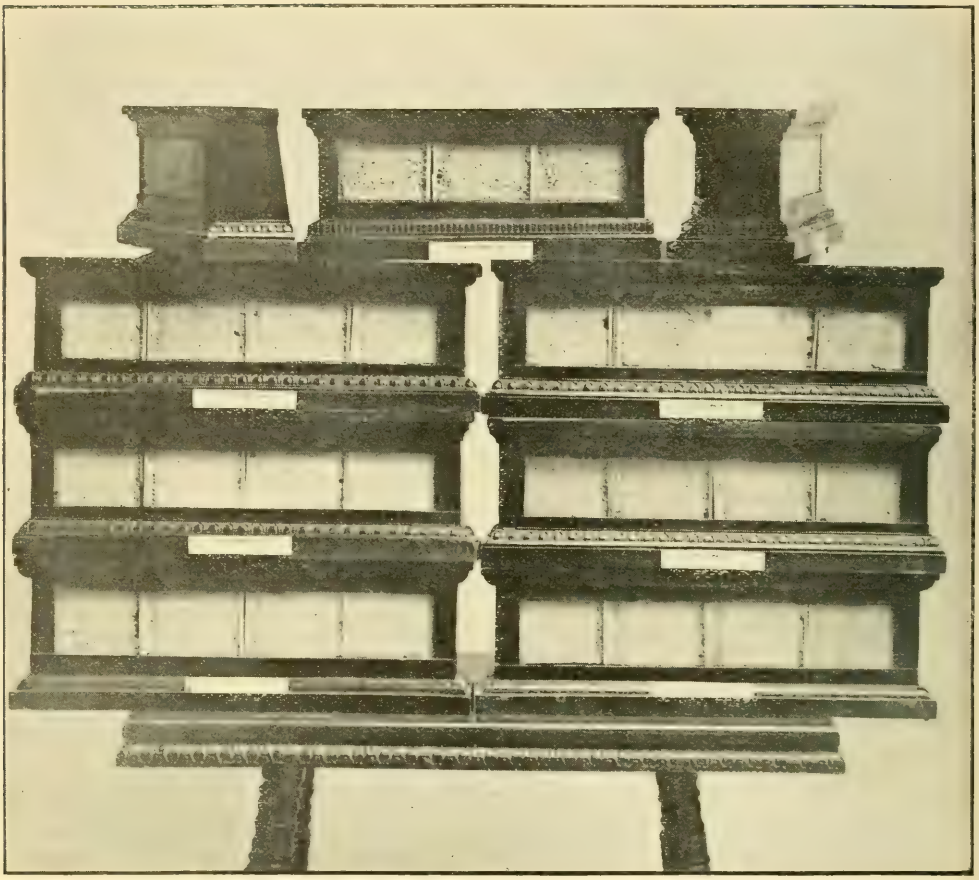
Germany is known for the numerous beer-gardens found in every city; but one little place contains a bee-garden instead of a beer-garden. It is entirely the idea of its owner, a schoolteacher, who has also executed the many houses in it, although he has not, of course, any experience in it through his profession. As can be seen, the bees do not live in the ordinary hives; but in finely modeled houses, each representing a different type.

It is a fact that bees always return to the same hive, which they recognize by the color, form, or shape of opening. To facilitate this searching for their residence the hives are often of different color and size. In this garden this has been carried on to the extreme, for every hive represents a different shape. Among the buildings are a fine castle, with sentry, a dwelling-house, an inn, and a windmill. There are also men and animals, carved in wood, all in the service of the bees. There is, of course, an opening in all these models, to give access to the interior for taking out the honey.—*The Independent.*



A COLONY IN THE BODY OF A WOODEN LION.
—*Courtesy of the Independent.*

Out of the eater came forth meat, and out of the strong came forth sweetness.—JUDGES 14:14.



EXHIBITION CASES FOR DISPLAYING COMB HONEY IN STORES.

## SELLING COMB HONEY.

### Some Inducements to Help the Merchant Dispose of his Stock; a Simple and Neat Exhibition Case.

BY D. R. WAGGONER.

In considering this subject it is assumed, of course, that the bee-keeper has carefully cleaned his sections from propolis and burr-combs; has graded them as to color, weight, and quality, and has them all cased in regular shipping-cases ready for market. The neighbors who come to the apiary to buy can be shown into the honey-house, where the crop is piled on shelves in cases, to select what they want themselves; but only a small part is sold in this way. We must go around and take orders for our product from merchants and others, and sell by sample.

In order to do this I take along with me a small shipping-case, holding not over twelve sections, to show customers in what style it is put up for sale. A smaller case will do just as well, and is lighter to carry. I also have a small box, or case, holding six sections, showing three on a side, through three-inch glass. I put the lightest-colored honey to show through one glass, and a darker grade, if I have it to sell, to show through the other glass. This little box is made perfectly plain, without any fancy molding, like a shipping-case, of thin stuff, and is stained a dark oak color, and varnished. The honey looks better and whiter in a stained and varnished case than in the regular shipping-case. It is better to have the light and the darker honey show through glass on opposite sides of the little case than to have the two sorts show through the same glass side by side. Also the dark honey will sell better by having it arranged in your sample case so that, when you hold it up between yourself and the window, the light will shine clear through the case, and your customers will see that even dark honey is not as dark as they imagine.

When I sell to merchants in my home town to retail again by the single section I have small showcases, each holding from four to six sections, to let their patrons know they have it to sell. The large shipping-cases can then be kept back on the shelf, covered up out of the reach of flies and dust. I generally supply the merchant with a showcase holding and showing four sections

through three-inch glass. Every season I furnish each of my home-town merchants, who sell my honey, with one of these show-cases; fill it for him out of one of the shipping-cases, and let him use it as long as he has any honey of my production to sell. At the end of the season, when the honey is all sold, I take the case home and keep it safe until the next season. The style of the showcase is to be seen in the accompanying picture. A label is pasted on each case, showing that the honey is from my apiary, etc.

When I sell to a merchant further away I furnish him a showcase free, provided he buys five 24-lb. shipping-cases of honey, and I let him retain the case permanently. These cases are more ornamental than the little sample box or case which I carry around with me when I solicit orders for honey. They are heavier, and have molding next the top and base, above and below the glass. The base is somewhat wider than the top, to lessen the danger of knocking the case over sidewise. The case is filled from the rear. A board fits into the back of the case behind the honey, and can be wedged in, or otherwise fastened, so as to hold the honey firmly in place. Small drip-sticks and paper are used as in the regular shipping-cases.

Cases to hold six sections, showing three on a side, through three-inch glass, are furnished merchants when they prefer them to those holding four sections each. Two cases of the latter style appear in the top row in the picture. The honey is put into the six-section cases from the top instead of from behind. The top board is loose, and small cleats are nailed on the under side of it to keep it in place so it will not slide off endwise or sidewise. Both styles of showcases are stained dark oak, and varnished.

The picture shows a county-fair exhibit containing samples from the crop of 1908, and an end view is given of one case of each style in the top row.

I have found that these little cases are an advantage, both to myself and to my merchant customers in selling honey. The merchants like them very much indeed. I have made all those I have used myself, though I am not a mechanic, and they have cost 25 to 30 cents each. I think it would be well for supply houses to furnish something of this sort to their customers, and keep them in stock, as comparatively few would care to purchase a showcase as expensive as the Sturwold, made by The A. I. Root Co.

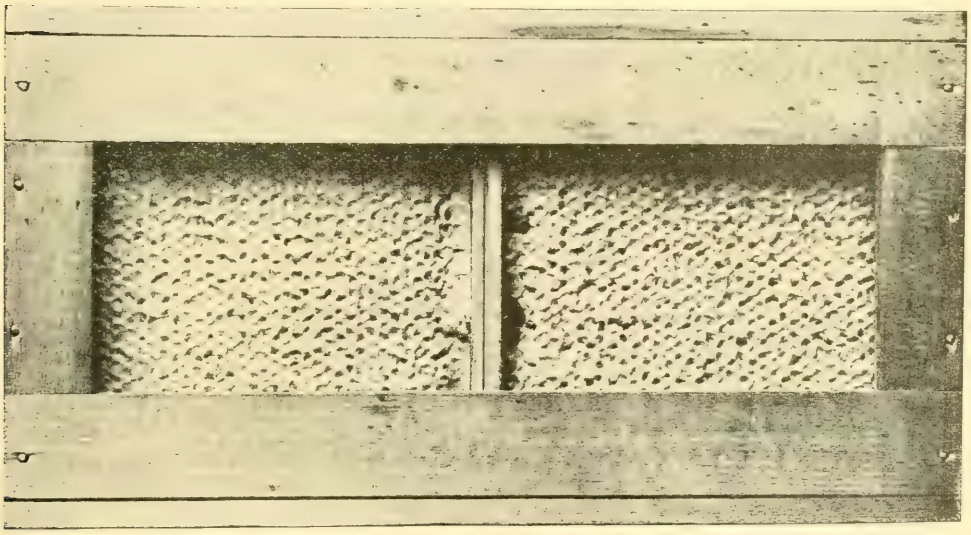
Stamford, Neb.

## COMB HONEY TWELVE YEARS OLD.

BY E. R. ROOT.

The honey in the case here shown is said to be twelve years old. It is in a very remarkable state of preservation, to say the least. The cappings appear to be perfect, without break or drip. We can hardly think it possible for any honey to go this length of time without candying. Whether this did or not does not show. Granulated comb honey is likely to have breaks in the cappings; but a careful scrutiny of the engraving, taken directly from the photo, shows no such defect. Usually comb honey two years old is very inferior-looking, and a poor seller. For that reason we always advise disposing of it in the year in which it is produced, even at a low price if necessary; for after it has once candied it will not bring even as much as extracted per pound, for the reason that the average person does not know how to render such honey without spoiling the flavor of the honey at least, although we shall show in a future article how this *can* be done.

Some honeys will remain in a liquid condition much longer than others—notably Rocky Mountain sage. Any honey kept in a hot room of *uniform* temperature will remain clear much longer than that which is subjected to a temperature of



THIS HONEY IS TWELVE YEARS OLD; THERE IS NO CHANGE IN IT, AND, SO FAR AS APPEARANCES SHOW, IT IS NOT CANDIED.

BRITTON'S SHED FOR WINTER PROTECTION.

from 80 degrees down to nearly the freezing-point. We can only *guess* that this honey was kept in a favorable temperature, and that it is of a kind that does not candy readily.

## WINTERING BEES IN A SHED.

### Home-made Winter Cases.

BY E. C. BRITTON.

The illustration shows my colonies in their winter home, where they will need no further care until next spring. I have been feeding those that were short of stores, until all have food enough to carry them through the winter. I used one part of the best fine granulated sugar and one part water to make the syrup. Here in this part of the country the bees gathered no surplus honey last season in July or August, but gathered some in June and September.

The hives are the regular eight-frame dovetailed style. I made the winter cases just for the pleasure of doing it, and because I could try different kinds. The bottom-boards are 17×23. The outer cases are 16¾×22¾, and 18½ inches high, so I can put on a super in summer and have both hive and super enclosed. The roofs are of different kinds — some hip, some common, four-sided, and shed, and are fastened on to the outside case with a small hook at each end. These cases give a half-inch air-space all around the hives, and on the top there is a super-cover; then a super filled with chaff, and finally an air-space under the roof. The entrances to the hives I reduced to ⅜×3 before putting on the winter cases. I have put them all in a shed, closed on three sides and open to the south. There are two rows, one back of the other, and a little higher up, so the bees get a better flight space.

To examine any of these hives I just push back the hooks at each end and take off the roof, then lift up the outside case, and the hive is exposed to view. They can each be taken apart in a moment. On warm days the bees can all take a flight, but I shall place a board in front of each entrance in the front row, so the sun will not call them out when it is too cold to fly.

Canton, Mass.

[This shed, or, in fact, any open shed, serves only as an excellent windbreak. If the back and sides be closed it will cut off the wind in front, just the same as a buggy-top facing the wind stops the force of the blast against the face of the driver; but if the back curtain be up the wind will shoot right through. In all open sheds the back and sides must be closed. This is a very old idea of wintering, but a good one.—Ed.]

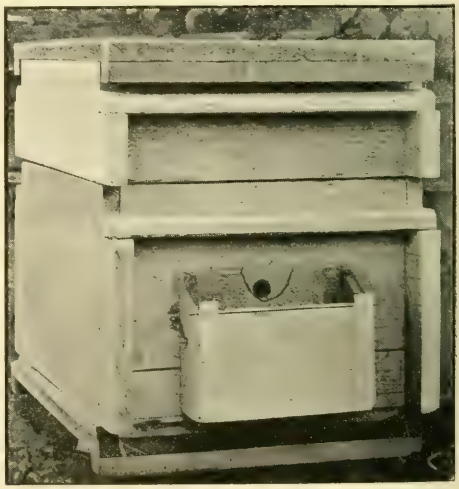
## A FEEDER FOR THE BACK OF A HIVE.

BY ARENT BRUHN.

The photo shows my way of feeding bees. The box holds one quart, and is hung on the back of the hive. I can fill it any time, day or night. By means of the glass cover I can always see how much the bees have taken, and I then feed more if needed, or stop the hole and take off the feeder for another hive.

Enumclaw, Wash.

[Such feeders are used to some extent, a similar one, with the exception of the glass cover, being illustrated last year in our Sept. 15th issue, page 1212. The glass cover would be convenient but more expensive.—Ed.]



BRUHN'S GLASS-COVERED FEEDER FOR THE BACK OF A HIVE.

## A CONVENIENT EXTRACTING-ROOM.

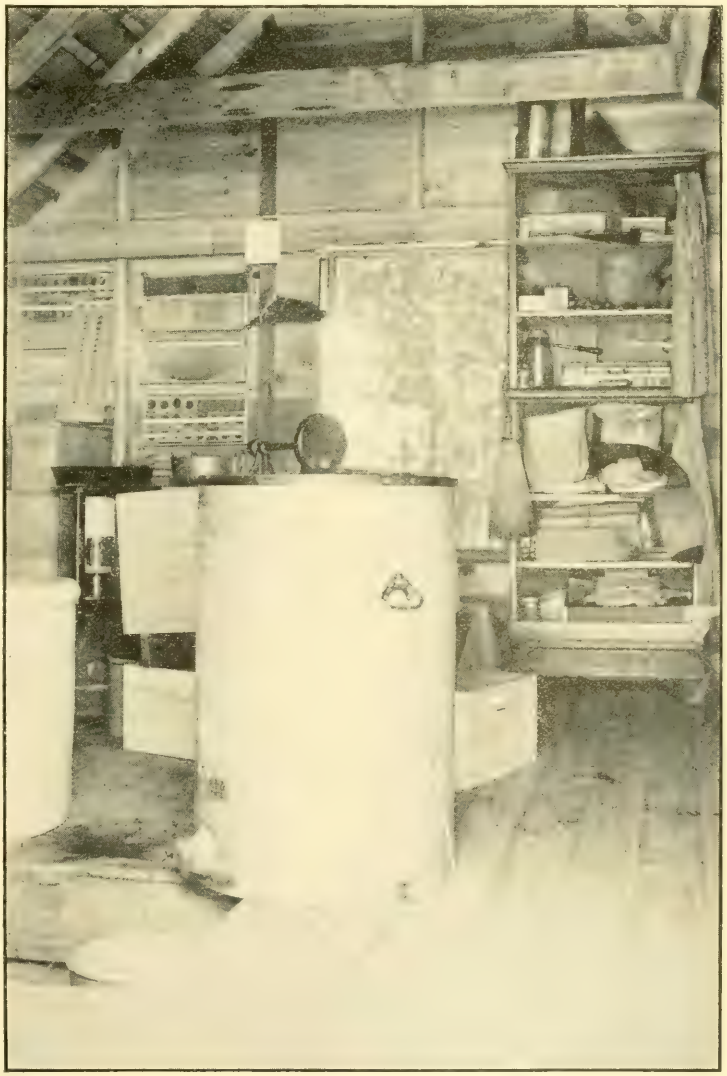
BY CARL H. HANSEN.

The arrangement of the extracting-room shown in the engraving is the most satisfactory that I have ever used. The extractor is more stable than I have been able to have it when placed on a box; furthermore, I find it easier to turn the machine when it is low down. The position of the honey-pail is a disadvantage; but if next season's crop warrants the expense I shall arrange to have the honey conveyed through a pipe directly to vats in the cellar.

The extractor is placed at the edge of the trap-door opening into the cellar. The honey, after being drawn, is emptied into large earthenware jars or into tin pails. The extracting completed, we wash the extractor, place a large piece of cheese-cloth over the top of the extractor-can, and fasten the cloth with a heavy cord. The honey is skimmed, and then strained into the extractor-can. After the bubbles of air have risen to the surface we run the honey directly into pint Mason jars, and finally put on the labels. We do not heat the honey, as our trade does not demand it. In fact, many prefer it in the candied state.

Madison, Wis.

[The arrangement here shown is good—much better than an extractor set up on a box. One can better afford to cut a hole in the floor in which to put the pail, and, when the extracting season is over, cover it with a trap-door. A better arrangement, as suggested, is to run a tin pipe to convey the honey to a tank on a lower level. The trouble with running the honey direct into a pail is that one is likely to forget and let the honey run over and waste. Enough is lost in this way to pay for a tin pipe in a short time.—ED.]



INTERIOR OF HANSEN'S EXTRACTING-HOUSE.

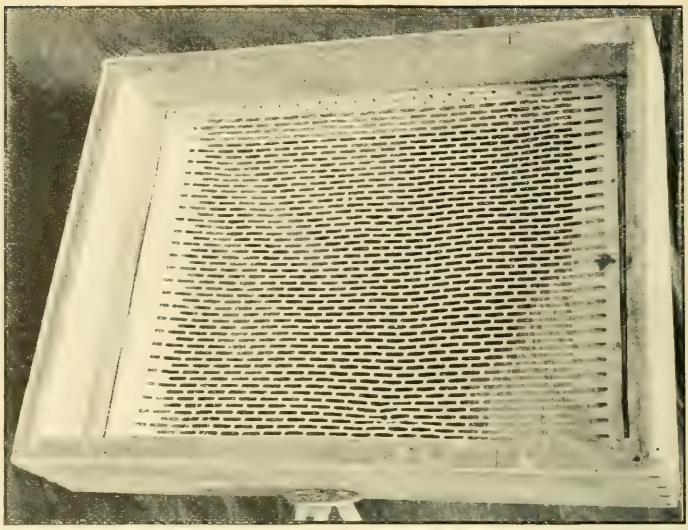
## ATWATER'S QUEEN-FINDER.

### How to Use them with Sectional Hives.

BY E. F. ATWATER.

Years ago, when I was greatly interested in the divisible-brood-chamber (or sectional) hive, I gave a great deal of study to the methods best adapted to its management. From the late S. P. Cully, of Higginsville, Mo., I obtained the idea of the queen-finder, as shown in the engraving. It is simply a light box, about 7 inches deep, 20 long, 18 wide, having a rim of ⅞-inch sticks, nailed about two inches from the bottom, all around the inside. On this rim is nailed a large sheet of queen-excluding metal. Around the upper edge is nailed a strip of tin, projecting in-

ward ½ inch all around. To use with the divisible-brood-chamber hive, after removing the cover from the hive drive a few puffs of smoke over and into the upper brood-case, which will usually drive the queen and the bulk of the bees into the lower case. Quickly lift off the upper case and set it aside. Pick up the lower case and place it on the queen-finder. Smoke the bees down, when a quick jar will send them into the finder. Many of the bees will at once pass down through the zinc, while the others will spread out over it and climb the sides of the box, where their progress is interrupted by the strip of tin.



ATWATER'S QUEEN-FINDER.

Keep a sharp lookout, and jar or shake the finder to prevent the bees from passing over the upper edges, and to keep them from moving down through the zinc. The queen is usually seen in a moment.

With standard frames I prefer to find the queen by looking over the combs for her; but if she is not readily found, all the bees may be shaken into the finder, where the well-known "stride" of the queen makes her easily seen.

Meridian, Idaho.

[This is a very serviceable device. It has been described in these columns before, and we wonder that it is not more generally used by the shallow-hive men. This is one of the handy things that can be made up during the winter for next season's use.—Ed.]

## COMB FOUNDATION.

### A Discussion of its Use in Frames; the Cause of Buckling; Thinner Top-bars and Vertical Wiring Preferred.

BY R. S. PENNELL.

We have always been dissatisfied with the top-bars of the frames. On account of the groove-and-wedge plan, they have to be made too thick, or at least this is the reason we assign. In our opinion the theory that this extra thickness hinders the formation of burr and brace combs is a fallacy; for as soon as the bees get the bars stained and propolized, they are no better than the thinner and narrower top-bars. The wedge and groove is the biggest nuisance that we have to contend with. It is not reliable if the frames are hauled to an outyard, in this climate at least, unless the wedge is secured with at least three nails. In forcing in the wedge the foundation is flattened so that all traces of the cell-base are pressed out. Now, the effects of this flattening on the foundation are just the same as if one edge of a piece of tin were drawn out with a hammer—the drawn part is wavy, thereby causing a strain on the tin that is undrawn.

The effects of the wedge on the foundation are just the same as the hammering on the edge of the tin; and the tighter the wedge fits, and the hotter the foundation, the greater the damage.

Then if the spur-imbedder is run across this three or four times, and if the foundation is hot and soft, it is necessary to get the frames in a hive containing a good strong colony of bees immediately, or a slight change in the temperature will make the foundation look like the bent and twisted irons of a burned building.

We have taken particular notice of the effects of working hot or cool foundation, and we find that we get better results from the latter as to buckling and sagging in this climate. During the summer we have found that the foundation is generally just right the first thing in the morning.

We don't want our foundation cut when imbedding. We want the wire forced into the cell wall with as little damage to the cell base as possible, and with an even pressure. If the foundation is too warm and soft, and the pressure too great, the foundation is flattened, and the effects are the same as those from the wedge, but on both sides.

The frame which suits us best is one with a ½-inch top-bar, with or without a saw-kerf as a guide for the foundation in waxing. The frame is wired vertically with a splint of wood or a piece of wire or tin in the center, parallel with the wires, to support the top-bar. By using such a splint a much thinner top-bar can be used, like those in the old Simplicity frames, which are only $\frac{5}{16}$ inch thick. With this plan of wiring and fastening the foundation we think there will be scarcely any sagging or buckling.

We are indebted to the old Simplicity frames we have for some of these ideas, as we always noticed that these frames are invariably extra fine on account of the vertical wiring, tin splints in

the center, and the $\frac{5}{16}$ top-bar. This latter gives ½ inch more comb per frame or 4 inches extra, amounting to half a frame in every eight frames.

Fort Collins, Col.

## BEE-KEEPING IN CUBA.

### Moving Three Apiaries 350 Miles on a Schooner; a Venture which Proved Disastrous.

BY FRANK REIMAN.

After keeping bees for several years in the southern part of the province of Havana, and being terribly annoyed by thieves, revolutions, and half-civilized people who hate the Americans, I decided to look for a more agreeable place. In the insurrection a year ago I suffered about $1000 damages. The claims commission gave me $500, and reminded me that this is what I could expect in a half-civilized country. Last May seven armed men entered the apiary and stole what they wanted; and after that set fire to the bee-yard and burned fifty hives of bees, honey-house, and all the contents. The loss was estimated by the judge at $550. For this I tried to claim damages as an American citizen, and was told that I would not be troubled in this way if I lived in the United States, and he would not consider the claim. The average Cuban is far inferior to the North American Indian. They possess all the bad traits of the Indian, but after that they are the most cowardly race on the face of the earth. I would advise any American who desires to settle in Cuba to locate in the eastern provinces, where there are many Americans, and the people are very decent. I had been looking for two years for a place, and decided this part was best, so concluded in August to move every thing here as soon as possible.

How to move was the question. I could not sell at any price, and decided to move by schooner. I chartered a schooner for $250 to take all the bees and fixtures for 600 hives. The schooner was represented as 40 tons, but proved to be only 30, and was too small to carry all, so I had to take apart over 100 hives.

I first had to cover 450 hives with wire cloth, which cost $50. The carting cost $80, and the moving by boats in a ditch two miles to the vessel cost $35. After loading 300 hives a storm set in and upset many hives in the hold, so I had to move the mess back to the shore next day. The unloading and demurrage of the vessel cost $120. After this I had the bees on shore for 30 days to get in condition, as the brood was nearly all lost, and the 450 hives came down to 225. These were loaded, then half packed in wire cloth, and the other half loose to do what they pleased in the bottom of the vessel—another cost of about $27 for loading.

We started in a magnificent wind, and made many miles until 6 o'clock, when the captain anchored the vessel and said we would sleep there. For eleven nights we anchored in spite of protests I made to the captain; but he and the crew were a sleepy set, and refused to sail by night.

We arrived in 12 days—eight days overdue. I immediately filed a protest with the consul, who had the cargo examined, and pronounced the bees a total loss. I succeeded in saving about 50 hives of those that were loose, but those in wire cloth all died. None of these had either eggs or brood except three of Italian, red-clover stock, which were of a lot of ten I received in July. These were ready for work at once, and laid in quite a lot of surplus while I still battled with many of the others to get new queens introduced to them.

The greatest mistake the Cuban bee-keepers make is to let the stock go too long before introducing new queens. Stock deteriorates very rapidly here, and some new queens should be bought every year. In Cuba it is impossible to raise good stock, so we must send to the United States. Red-clover long-tongued stock I find the best. Black bees we can not use, as the moth-worms often eat a super, honey and all, even when the hive below is in good condition. I think the great improvement in the honey queens has been the cause of overstocking the market more than any thing else. With the black bees the yield used to be from 5 to 10 lbs. a hive; but now it is 50 to 100. In Cuba a good hive of Italians can make a barrel of honey in a year when the natives make only from one to five gallons a year. I have since purchased and transferred 170 hives, and have now over 200 in working order, and am awaiting results in my new district.

Manzanillo, Cuba.

## COMB-HONEY SUPERS.

### When Shall They be Put on and Taken off? Shall Empty Supers be Put Above or Below the Full Ones? Some Excellent Advice for the Comb-honey Producer.

BY DR. C. C. MILLER.

What a changeable business bee-keeping is! No danger of a wide-awake bee-keeper stagnating from the monotony of his business. Always unsolved problems, always new problems arising. I still lie awake nights studying over them with just as keen interest as I did 47 years ago.

Take the matter of supers. When shall they be given? When taken off? Shall a fresh super be given above or below the one or ones already on? I confess I don't know—at least I haven't it down to any fixed rule, but must constantly be deciding each case afresh.

Almost, however, the question of putting on is settled; practically, it is. When I see the very first white-clover bloom I get supers on as fast as convenient—not that the bees will use them at once. I watched the thing very closely the past season, and it was just ten days from the time I saw the very first clover-bloom until I decided the bees were harvesting more than enough for their daily needs. So it might do to wait that ten days. But during that time the bees are getting acquainted with their new store-house; and when the rush of the harvest comes I *think* they commence storing above a little more promptly than if the super be not given until the very day they absolutely feel the need of it. Yes, I feel quite sure they do, and that little difference may make all the difference between their deciding to swarm and their not deciding. And that differ-

A CORNER OF DR. MILLER'S HOME APIARY, SHOWING THE STACKED-UP COMB-HONEY SUPERS.

ence in deciding may make a notable difference in the amount of surplus honey stored. So for years the appearance of the first white-clover bloom has been the signal for putting on supers.

"But don't the bees spoil empty sections when they are not storing?" Sure—plaster glue all over the wood, sometimes varnish the foundation with glue so that they refuse to accept it the following season, and sometimes gnaw the foundation badly. But that's just after the close of the harvest, not just before it begins. Bees use little or no propolis early in the season; they're not gluing up cracks, getting ready for winter; and for some reason they don't gnaw foundation as they do in the fall. (Don't they gnaw it in the fall to use as bee-glue?)

Just when to clean off all supers is a different thing. If the harvest would only shut off in an unmistakable manner all at once! but it has a trick of gradually tapering off, making it impossible to tell just when *surplus* gathering ceases—at least, that's the way often. One wants to leave supers on just as long as the bees continue storing in them. But how can one tell? This year, when I took all off, I found a few empty cells in some sections. The bees had already done a little carrying-down—not enough to make any important difference, but enough to show me that I didn't know enough to guess the right time to take off supers.

Shall additional super room be given above or below supers already on? and how many supers shall be on at once? That picture of a corner of the home apiary shows that I haven't settled down to the plan of allowing the bees to confine their attentions to only two supers at a time. July 18 here's the condition of affairs in the home apiary: 1 colony with 2 supers; 18 with 3 supers each; 27 with 4; 31 with 5; 8 with 6.

That makes the average a trifle more than 4½ supers to each colony. If the inventory had been taken at some other time I think the figures would have been larger, for I know there were at one time a very few colonies with 7 supers each. As the years go by I think I incline to give more and more room when a big flow is on. I'm sure I should have lost heavily if I had tried to limit each colony to two supers each; and there would have been loss—I think there was loss in some cases where there were only four supers, as shown by the honey and comb (especially comb) jammed in between supers. When bees are badly crowded, don't they hold the honey in their sacs and turn a lot of it into wax?

Shall the empty super be given above or below? Sometimes one place, sometimes the other; and I don't always know enough to say which—oftener under; always under when there is a good flow on with every prospect of a continuance. Well, that hardly tells the truth either—at least the whole truth. In many cases this year I gave an empty super under, and at the same time an empty on top of all. I wouldn't do that except in a good flow which promised to continue. But that empty on top—mind you, always in a good flow—can do no harm. The bees are too busy storing to do any mischief to the empty sections; the super-room is kept just a bit cooler in a hot time, and that upper super acts as a safety-valve in case the bees should happen to need the room.

I know there are good men who say, "Never give an empty super under." Of course, I know that hastens the finishing of the lower super or supers. But it hastens because it crowds the bees. It takes more crowding, too, to *start* storing in an upper than in an under super. And that crowding has such a great bearing on the swarming problem that I never want bees to feel they are crowded for surplus room. I want them to feel they have plenty of room—yes, abundance of room; in short, I want them to feel they have a surplus of surplus room.

### A STRONG ARGUMENT FOR PUTTING THE EMPTY UNDER THE SUPER PARTLY FILLED.

There's one item in this matter of putting empty supers above or below that I don't remember ever to have seen mentioned in print; yet it has a very important bearing. You know you like to have the bees commence work in a super all over at once, the work just as well advanced in the four corners of the super as in the center. To me the prettiest sight in a super I ever saw is a set of sections exactly alike in advancement, every section nearly filled, but not a cell yet sealed. No, it isn't so pretty a sight to see the 24 sections all sealed with their snow-white cappings—not to me; for the sight I've described pictures a strong flow, a strong colony, and work of the

most uniform character. Well, I get that sort of work sometimes—not so often as I like—when I give a fresh super under to a strong colony in a strong flow. When I've given a super on top I never had such a state of affairs—never. The center sections were always well in advance of the outer ones, if, indeed, the outer ones were attacked by the bees at all. So, other things being equal, that matter of even starting all over the super is enough to settle me in favor of putting the empty super under, so long as I have any reasonable hope that the season will continue until the super is finished, or nearly finished.

When the season is well advanced, and it's a question whether an additional super is needed, that's another thing, and the super goes on top. Besides, crowding late in the season doesn't have the same effect as early.

But I hear some one say, "Your locality must be different from mine; for I've often given empty supers on top when the bees would commence just as promptly at the corners as at the center; in other words, I've had exactly the same kind of work with supers given above that you brag about getting with supers below." Well, I don't feel like disputing your word; and it isn't locality that makes the difference either. You don't give the room till the bees are so crowded that they're glad to occupy all the room at once. Let's not quarrel. If you like your plan it's all right. But I'd rather not crowd so much. I'd rather have less crowding, less secretion of extra wax, less inclination to swarm, and a little larger crop of honey.

Marengo, Ill.

[Like the doctor, we don't think that this idea of putting the empty under the partly filled super for the express purpose of securing more even filling of *all* the sections alike in the super has been mentioned before in print. Perhaps this has not been the experience of others. We should be pleased to hear from any one who has or has not observed the same thing.—ED.]

## MAKING INCREASE.

### The Alexander and Somerford Methods Compared.

BY CHAS. REYNDERS.

On the whole it seems to me there is scarcely an authority in bee culture superior to Mr. E. W. Alexander; at least, whatever conclusions emanated from him seemed eminently correct; yet in the A B C (1908 edition) there seems to me to be a contradition which I ask you to explain. On pages 279, 280, you set forth the Alexander method of increase. On page 310 you deal again with the subject of increase together with that of nuclei. Considering the method of Mr. W. W. Somerford it would appear exactly applicable to colonies as well as nuclei; and if Somerford's method works (he says that *each colony should make four or five divisions*) what is the use of the Alexander method, pages 279, 280? Who would merely double his colonies when there is a possibility of increasing them four to five times? If both methods are equally reliable it would seem that the Alexander method could be dispensed with, however good it may be.

Then as to the Alexander method itself. The directions provide merely for doubling the number of colonies (every thing pertaining thereto "being equal"); but in the instance given, Mr. A.'s son is said to have made 20 colonies out of 9. Doubling 9 would make only 18, so some of the colonies must have been triplicated. How, then, was the triplicating done? Please explain exhaustively as to the relative peculiarities and reliability as between the Somerford and Alexander way, and then as to the Alexander triplication. I have only one flourishing colony of Italians, which I am trying to bring through the winter just as well as possible; and if I succeed I want to do with the same as nearly best as possible.

Finally, I should like to know how long queens can be kept before being introduced. I expect to see a predicament in the matter herein at first dealt with, in having new queens at hand at just the right time. How can one manage that? I have a neighbor living a mile west of the Susquehanna River, while I live ten minutes' walk east of the same. I may be able to get queens from him, but he may need a few dozen himself, and he has some fear that he and I together may overstock this country. The next apiarist of any account lives six miles further away. There are all sorts of territory here—cultivated land with clover and buckwheat; woods, pasture, waste land, etc.

Ulster, Pa.

[Why, friend R., there is no conflict whatever. You did not read very carefully the first column on page 279. The Alexander increase is based on the idea of securing a *honey crop* as well as an additional number of colonies. Indeed, the very first sentence referring to this method reads:

INCREASE. Under the head of NUCLEUS several methods of forming nuclei are explained, but under this head we shall deal with the subject more from the standpoint of the honey-producer who actually desires increase and at the same time produce a crop of honey.

The Somerford plan involves only the largest number of colonies possible from one without reference to honey. You see there are two separate ideas—one aiming at a honey crop and increase; the other, maximum increase only.

Regarding the 20 colonies and the 9, it is probable that two of that 9 were strong enough to make two other colonies each. In following an author one will, of course, be governed by conditions and not by absolute rule, the rule being only a guide.

Queens can ordinarily be kept a week after they are received from the mails; but the sooner they are put in the hives the better. It is not necessary to prepare hives for the reception of queens. As soon as queens arrive, go to the colonies to which you propose to introduce them; remove or kill their queens, and cage the new ones at the same operation. Indeed, one may cage a queen in a colony, fixing her cage so that she can not be released for from 24 to 48 hours. During this time the old queen can be allowed the range of the hive. At the end of the time stated, the old queen should be removed, and the cage with the new queen should be so fixed that the bees can automatically release her by eating away the candy.

We wish we could do something to get rid of the notion that a colony must be queenless three

or four days before the introduction of another queen. We presume half of those who receive queens will actually keep them in the house for two days after the old queen has been removed, and then proceed to cage her. This is a great mistake. She should be put in the colony at once.—Ed.]

# Heads of Grain

## From Different Fields

### HONEY THAT CANDIED AS SOON AS CAPPED.

My bees made nice honey last spring, but we had a drouth, which, excepting a few slight showers, lasted all summer and cut the honey-flow accordingly. About September the bees began working again, and in a short time had accumulated a surplus of honey. This had a good flavor, and was white in color; but all of it had granulated in the comb before being taken from the hive. The degree of granulation varied, even in one section, for part of a section would be very granular while the rest of it was only slightly so. "Mushy" would best describe the condition. The wax in the comb was noticeably thin, being hardly thick enough to be objectionable when eaten. There was a little very dark-amber honey which was not at all sugary.

The honey was taken from the hive as soon as capped over; and some kept in an unheated storeroom and some in a room always kept warm; but I noticed no difference in the keeping.

So far as I know, most of the honey was made from sumac and a tall white weed which some call boneset; but I doubt if this is the true name. The bees were also busy around sheep-burrs, Spanish needle, smartweed, wild sage, rosemary, and a tall yellow flowering weed that grows along roads and in swamps, and a number of such growths.

We have fields of broom sedge all around us, but I did not notice bees around that; and any way, this broom sedge we have with us always, and the sugary honey is something new.

I do not understand the care of honey, as I have just begun to try to handle bees, and so would have thought the condition of honey due to my ignorance if it were not general throughout the county. Some of the honey sold is in a very much worse condition than mine, being quite dry, and can be eaten like candy.

I have lived in this vicinity a number of years, and never heard the complaint before; but older residents say that it is owing to the dry weather, and that it often occurs in dry seasons.

Port Tobacco, Md. Margaret Gray.

[It seems to me you waited too long before you removed the honey from the supers. When half of the sections in a super are finished, take them out and put the others in the center to be finished. This applies to fall honey particularly. The colonies dwindle down until there is not a sufficiency of bees to keep the honey warm. Dry weather does accelerate granulation. The honey from some of the plants you mention is much inclined to granuulate, and the dry weather made matters worse. Further experience will enable you to prevent largely this trouble in future. The flowers sent are asters.—W. K. M.]

### KEEPING ANTS OUT OF HONEY-HOUSES IN WARM LOCALITIES.

I have a very simple yet effective method of keeping ants out of buildings, that I have used for twelve months or more. It is nothing more than having the house stand on posts (mine is on posts made of mulberry wood). A box surrounds the bottom of the post, which is filled with cement, and a trench 3 inches deep and about 3 inches wide is made in the cement. This will hold water three or four days or longer, even in hot dry weather; and when it rains the trenches are filled up without any help. When it does not rain, of course one has to fill them. The plan is far ahead of any thing else I have ever seen.

Macon, Ga. Harry Griffin.

[In the northern States ants do not prove to be a serious enemy to the bees or bee-keeper, and, consequently, no special provision needs to be made other than to find the nests and destroy them.—Ed.]

### MOVING COMB HONEY SUCCESSFULLY ON A WAGON; UNITING COLONIES.

You wished to hear from those who have had good success in carrying section honey to market. I take the sections out, clean the super and sections of propolis, return them to the super, thoroughly wedge them in, put them in a box, tiering them up. I put hay in my lumber wagon, set my box in, and it arrives in town in perfect condition; and when I tell you it goes over the roughest roads you will see this is remarkable.

I started in the spring with 11 colonies and now have 31. I might have had 50, but I united them by putting paper jabbed full of holes on top of the hive I wished to unite, and set the other hive on top of it, and always had good success except once, when the upper bees got into the lower hive too quickly. They fought and killed each other; but two good smokes in the entrance made them think of something besides war.

Brainerd, Minn. J. F. Watsic.

### IS IT ADVISABLE TO WINTER BEES IN BUILDINGS ABOVE THE GROUND?

I am often asked if it would be a good way to winter bees by putting them in a barn or outhouse. For instance, could they be put in a honey-house and the entrance closed up with wire so they could not come out? Would you advise me to winter them that way? I have not a good cellar to winter them in.

Schenectady, N. Y. H. Greulich.

[It is not generally advisable to try to winter bees in a room above ground, and still more inadvisable to shut them in the hive with wire cloth. While some make it a success, the beginner, we feel sure, would make a failure of it. A repository under ground will maintain a more uniform temperature; while one above ground will often become so warm that the bees will become uneasy—particularly so in mild weather. In very cold spells also the temperature may go down to freezing and below, and this is quite as bad as letting it go too high. In indoor wintering it is very important to maintain a uniform

temperature. If this can not be secured, a large amount of ventilation must be provided in such a way as not to let in light.—ED.]

WHY HONEY SOMETIMES FERMENTS IN THE HIVES.

I have noticed the different articles in GLEANINGS on fermentation of honey in the hives, and have just read the one on page 1254, Oct. 15th. I have had considerable experience along this line, and I find that the main cause of fermentation in our locality is too much rain when the alfalfa is in bloom, or the giving of too many extracting-cases of fully drawn combs at a time, inducing the bees to bring in more of the thin nectar than they can take care of, resulting in the fermentation. I have seen it so bad that some of the cells would burst open after being capped over; and my remedy has been to extract the honey and throw it into the vinegar-barrel or use it for spring feeding. In hives run for comb-honey I seldom have such trouble.

Fermentation often takes place in hives with the strongest colonies. I have never noticed the bees dying in such hives, but they get very uneasy, and cover the front end of the hives for days, and show other signs of uneasiness. The honey sours, and the caps burst open, thus keeping the bees busy cleaning up over and over. To prevent this, run for comb honey or don't give too many extracting-cases of drawn combs at one time.

After the honey has begun to ferment in the hive the combs may have to be extracted two or three times to stop it.

Augusta, Kas. R. L. SNODGRASS.

A BEE-VEIL IN WHICH THE WIRE CLOTH IS SHADED.

Wire-cloth veils are the most satisfactory of all. I have worn them for years, and would not tolerate a soft veil. I have found them much more satisfactory when sewed to the brim of a stiff straw hat. I sew the wire cloth to the hat-brim so that more than half of the brim will project over the wire cloth which shades it. Then I can see through it better.

Fillmore, Cal. W. C. GATHRIGHT.

MOVING COLONIES FROM OUTYARDS.

What is the best way to move bees from outyards after Nov. 15, to home yards, a distance of four miles? Would it be best to move in the fall or spring? Why?

A READER OF GLEANINGS.

[Use a spring-wagon, or else plenty of straw under the hives. Any time may be selected after the bees have ceased to fly every day. Cover the entrances with wire cloth.—ED.]

HOW SKUNKS SOMETIMES DO SERIOUS DAMAGE IN A BEE-YARD.

While looking through my apiary to-day I saw signs of skunks that indicated they were destroying many of my bees. These signs might not be noticed by one not having had experience. I think many cases of bees not wintering well on their summer stands might be traced to the depredations of these animals. My apiary is located in a village lot, and very near the house, or I might not have discovered the midnight thieves. Several times last fall we heard a faint scratching on some of our hives in the evening; and as some of our bees were very cross I took a lantern and went to discover what was disturbing them. I found two or three skunks at different hives eating more bees than most of us can afford to lose at this time of the year. I killed five, but still they came. I finally stopped them by placing poultry netting around the entire yard, but they had so weakened several colonies that they did not winter, and many more came through very weak.

I told my story of my night visitors to several of my friends who keep bees, and in every case they trapped and killed several of the "varmints."

Bees visited by skunks will be very cross, and will come boiling out of the hive on the least provocation. The alighting-board will show claw-marks, and look dirty; and you will sometimes see many bees killed but not eaten.

East Trumbull, O. W. C. EASTMAN.

[We have had reports before, showing that skunks in some localities do serious damage to a bee-yard.—ED.]

WHY DID THE BEES TEAR DOWN THE QUEEN-CELLS?

What causes the bees to tear down the queen-cells at about the time they are ready to cap over? I have been troubled more or less all summer by having them removed at about the time they are capped. I have tried queenless bees, caging the queen, fastening her up at one side of the hive with a queen-excluder, and placing them over a queen-excluder on a strong extracting colony, but they removed them all in about the same proportion; that is, they tore them down one way as much as another. It does not make any difference if honey is coming in or if I feed them. I have used black, Italian, Carniolan, and Caucasian bees for building queen-cells. Caucasians and Carniolans are the best cell-builders with me. They remove the finest cells of any. Now, I should like it if you can tell what causes the trouble. I have tried about all the plans of raising queens I have ever heard of or can think of that should cause them to tear the cells out; but I can't tell why they keep on doing it.

Baldwinsville, N. Y. EDW. REDDOUT.

[The tearing-down of the queen-cells as here described, we should say, was due to the fact that a virgin hatching much ahead of the rest was responsible for the mischief. As she was looking very much like a worker after the first 24 hours, you might have failed to note her presence. There is no reason why uncapped cells in a queenless colony should be torn down unless there is a queen loose. In rare cases the inmates of the cells might be affected with foul brood, and die from disease before maturity.—ED.]

BEE-PARALYSIS.

A conference was held last week in West Maitland, on the above subject, by three of our leading bee experts, viz., Mr. W. S. Pender (N. S. W.); Mr. Beuhne (Victoria), and the writer of this article. Mr. Pender kindly provided microscopes for the occasion. Mr. Hutchison, in supplying the subjects for investigation, said he

had considerable difficulty in being able to procure them. They consisted of a dozen bees in the last stage of that dread disease paralysis. Two years ago in this district and in many other districts it was almost impossible to find an apiary which had no signs of it. To-day it was just as impossible to find an apiary which has any affected bees, which, in his opinion, proved that severe winters have a deal to do with causing the disease, and the only cure he knew of was a good honey-flow and a little patience. Mr. Beuhne said that what was classed by apiarists as paralysis was, in his opinion, three distinct diseases, and until they can be identified separately they can not expect to effect a cure. He believed in purchasing his breeders from an apiary in which the disease had visited previously to his purchase, as reliable queen-breeders would be certain to breed their stock from such colonies as were proof against it. Mr. Pender said he discovered the presence of bacilli in the intestinal tubes of the bee by aid of the glass, but was not sure whether they were propagated by the disease or whether they were directly or indirectly the cause. No definite results were obtained, and they adjourned till some future occasion.

J. A. Hutchison.

West Maitland, Australia, Sept. 14.

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VERTICAL WIRING.

Some of your readers may be interested in a plan of upright wiring of frames, which I am now practicing, and which seems to me not only simple but effective, in supplying much more resistance to the sagging of foundation.

Where there is no groove in the top-bar the plan is both easy and inexpensive. Simply bore four small brad holes in the center of the bottom-bar at suitable distances; run a gauge along the under side of the top. Mark this to correspond with the bottom holes, and hammer home as many small blind-staples. Thread the wire from right to left, which first fasten with the usual tack on the edge of the bar; provide a small strip of wood to place temporarily in the center of the frame while tightening to stop the bottom-bar from being pulled up unduly. Even where combs have to be cut out occasionally, the staples, being almost out of sight, need never be disturbed.

New Zealand. Thomas Sutherland.

[The plan here spoken of is feasible, but it involves a great amount of work; but the result in the end might be more satisfactory than the present horizontal plan.—Ed.]

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HOW TO TEACH CHICKENS TO CATCH DRONES.

I wish to tell you how I teach my chickens to catch drones. First I shave cappings of sealed drone brood (if they are just hatching, so much the better), and I throw a few of them on the ground, then I hold the frame and let the hens take the larvæ out. The chickens can beat me for getting them out fast. Repeat this a few times. They learn quick. I went out this summer at 2 o'clock one day, and saw not less than six broilers stationed at as many hives. I watched one in particular. He caught 16 drones in a few minutes, always dodging behind some foliage to eat them; but after he caught the sixteenth one a bee took him under the beak. Then he jumped up and down. I saw them day after day station themselves at the hives as soon as they heard drones flying. They beat all other means I have tried, for it is only a short time before drones are scarce where the hens tend a hive. I then sold my broilers. It is very amusing to watch them.

Fremont, Mo. Mrs. Almeda Ellis.

[Many thanks, my good friend, for the facts you have given us. I presume drone brood or live drones would be excellent food for growing chickens; but we can hardly as yet afford to advertise them at "ten cents a bushel." As I have remarked before, it is a rather expensive kind of chicken food—that is, if we should undertake to rear drones on purpose for chickens; but after they are started, the sooner they are given to the chickens the better for the bee-keeper. Every effort possible should be made to stop the production of useless drones; but after they are once hatched out in the hive, by all means teach the chickens to catch them.—A. I. R.]

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HONEY SPOILED FOR TABLE USE BY BOILING.

I bought some honey (?) from a dealer, represented as "very nice-flavored honey, dark-colored," etc. I put some on to boil; and as soon as it was hot a very thick brown scum formed on top. The scum was removed, but it kept forming. After boiling 30 minutes there was a thick dark substance, about like jelly, commenced to form in the liquid. What substance could the bees gather that would do this? Should I ask the dealer to exchange this, or will it be all right to put this out under a "pure honey" label? I can not help doubting its purity.

Randolph, Nebraska. B. F. Smith, Jr.

[There is no evidence to show that the honey was not pure. No honey should be boiled in the manner that you have explained; in fact, almost any pure honey, after that kind of treatment, will have a scum form upon it; and if the honey be dark, such scum will be brown in color. The only time bee-keepers ever boil their honey is when it is suspected that it may contain the germs of disease. Such boiling, however, always spoils it for table use; and, really, it is fit only for manufacturers' use or to feed back to the bees.—Ed.]

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SOME OBSERVATIONS AFTER 20 YEARS OF EXPERIENCE.

I have run my apiary for extracted honey some years, and for comb honey in others. Some seasons I have produced both. To produce comb honey the bees work in an abnormal condition. With large hives, and plenty of room, little or no swarming results. This is a natural result—a normal condition. Bee-keepers are up against the side of a mountain in trying to combine comb-honey production and no increase. Comb honey and extracted in the same super is a failure as regards comb-honey *quality*, in my experience.

I find ⅜ hive-bottoms a nuisance. They soon get as shaky as an old politician. Mice *will* gnaw through them.

Every colony I lost this winter was caused by a warped or cracked cover. A first-class cover means, nine times out of ten, a first-class colony. Water always freezes at the top. Look at a tub

on a cold morning. Where do you find the ice? Cover over your tub and see the difference. Nothing is better than a warm tight top to a hive. I shall not remove a cover or loosen one before May 1.

I can tell from the entrance whether a colony is queenless. The loads of pollen indicate prosperity, and the exact condition can be read at a glance.

The only way to keep bees is to keep them at the front. Let other matters take the side track.

Bellevue, Neb. A. H. HOOD.

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SOME EXPERIMENTS TO SHOW THAT BEES ARE ATTRACTED BY THE NECTAR RATHER THAN BY THE COLOR OF FLOWERS.

On p. 1189, under head of "Are Bees Attracted by the Color of Flowers or by the Nectar?" the idea is expressed by Mr. Buttel-Reepen that bees are attracted by the color. I made observations and found that bees went to cosmos from white to red, to African marigold, to the different colors, from light yellow to dark brownish red; to cannas, all colors; to dahlias, also to all colors ranging from white to dark red. At dahlias, however, bees often hesitated, coming from the simpler kinds to those filled up more like cactus dahlias. I have also seen bees going from yellow flowers of one kind to yellow flowers of another kind, but did not touch; for instance, from yellow dahlia they flew to the fall sunflower, and flanked off when about one to two inches near the flower.

Bees have not hesitated at all or very little when going from one flower of a certain color to the flower of another color of the same kind of flower.

Brooklyn, N. Y. OTTO REINER.

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PROPOLIS MIXED WITH WAX.

I have to contend with a great deal of propolis here when extracting. I scrape it off the frame before uncapping, and it goes right in with the cappings and through the solar extractor. I wish to know if it mixes with the wax and thus renders one liable to the penalty of adulteration under the new law; and if so, how can it possibly be avoided where there is much propolis?

ARIZONA.

[If the wax from the solar ran out in a very small stream, or in drops, it would chill before any propolis could have a chance to settle. Under such conditions, therefore, or when, for any reason, the propolis is mixed with the wax, the whole mass should be heated just above the melting-point of the wax, and cooled slowly, so that the propolis may settle.—ED.]

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LIGHT ITALIANS GENTLE.

Every now and then I see you are not in favor of the light-colored bees. People that see my bees and what I am doing with them are surprised. A good many say they can't do what I do. I have bees that I handle with my sleeves rolled up, and bareheaded. D. E. BEST.

Best, Pa.

[Not all strains of yellow Italians are cross by any means; but it has been our experience and observation that most of them are. Not only that, but some of them are short-lived, and poor honey-gatherers. The trouble is, the rage for color is apt to overlook some other desirable qualities.—ED.]

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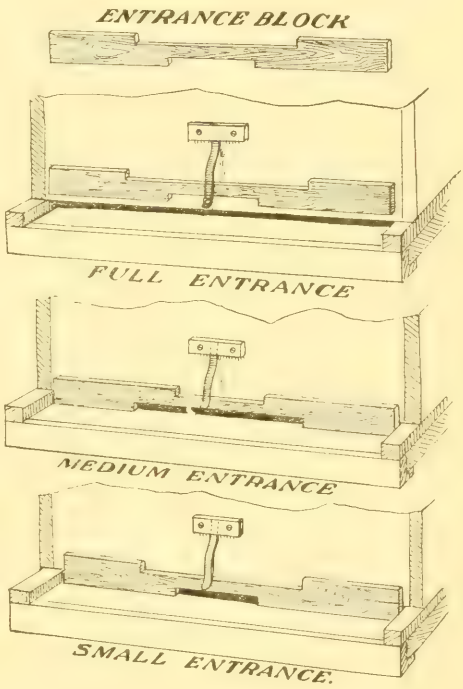
AN ENTRANCE-CONTRACTOR THAT CAN NOT BLOW AWAY.

I use a bottom-board with ¾-inch cleats on the front, tapering down to ⅜ at the back of the board, making an entrance ¾ by the width of the hive. This size is used on good colonies for June, July, and August, and also for the winter months while in cellar. When I wish to contract the entrance I use a notched stick held in position in front of the hive by a super spring. This is fitted between two small blocks $\frac{5}{16}\times\frac{3}{4}\times 2\frac{1}{2}$, fastened to the hive with two screws which hold the spring firmly. This entrance-block is cut out on one edge $\frac{3}{8}\times 4\frac{1}{2}$, on the other edge $\frac{3}{8}\times 8$. This is similar to the plan of E. H.




Clare, p. 235, although I use one spring and one block which will stay in position. Neither wind nor chickens can remove it.

A ¾ entrance suits me well in summer, and for cellar wintering; and in fall or spring it can be changed in an instant without hunting for entrance-blocks. A. TIEN.

Falmouth, Mich.

[The contractor here shown is simple and good. The ordinary hive super-springs would answer very well to hold the contractor in place. But such things would interfere with putting on Alley traps should their use be deemed necessary at any time.—ED.]

# Our Homes

By A. I. Root

If the Lord delight in us, then he will bring us into this land, and give it us; a land which floweth with milk and honey.—Num. 14:8.

Dear friends, I want to tell you a story that I have told once before. I want to tell it again because it has a new significance just now; and I am also reminded of some things that I omitted in my first narrative.

About the year 1874 (over thirty years ago, you will see), when I was very busy one morning planning my article for the A B C book in regard to bee-hunting, a good-looking well-dressed stranger came down to my home. I looked him over and concluded he was a traveling man who had something to sell — probably something for jewelers. My store had just been burned out, so I was for the time rather out of the jewelry business, and my mind was all taken up with bee culture. These runners are very bright fellows, as some of you may happen to know, and sometimes it is not very easy to put them off. This fellow was much interested in bees or (at least so I thought) he pretended to be. He asked a great lot of questions, but just then I had not time to answer them. He did not seem at all hurt, even if I was somewhat rude to a stranger; and when I tried to excuse myself by saying I had employed a man, a veteran "bee-hunter," to go out in the woods hunting bees, he with great readiness proposed to go also. I hope he will forgive me when I say that on that particular morning I did not really want him along. If he kept asking questions as he had been doing I could not well give my whole attention to the bee-hunting and write it up in good shape for the A B C book that was just then in embryo. By the way, let me digress a little.

At that early date I had learned that a teacher must *know* what he is talking about. We had agricultural papers published then (may be some of them now) by city editors who thought they could instruct the farmer by just sitting in their nice offices and not going out over the farm and through the woods at all. No wonder farmers were disgusted with book farming and farm papers. Well, I had decided that I would not write a thing for that A B C book until I had been right on the spot and been through it, and had seen the things I wrote about, with my own eyes; and that is exactly why my A B C book and Gleanings in Bee Culture took hold of the people, and took such "root" and *grew*.

Well, this city chap with his nice clothing went along. I think he was rather fleshy at that time, even if it was over thirty years ago, and I concluded he would soon tire out and go back to town. But he did not, even if it did make him puff and sweat somewhat to climb over logs and follow the line of the bees. I do not now remember very much about what happened that day, as it was so long ago. But two little incidents impressed themselves on my mind while we were out there in the woods. I was interested in music at that early day, and I had been taking lessons on an instrument. While out in the woods I began whistling one of the exercises I had been going over on the keys during the morning. As this simple little exercise was running through my head I kept whistling it over and over. Finally this city chap remarked that the little melody I was whistling *was* rather pretty; and when he finally added, "I am glad you like it, for it is one I composed," I stopped abruptly and turned around and looked at him. He looked remarkably innocent; but I made up my mind that he was only a "runner" and said this in order to get into my good graces and sell me something or other. I think I was too polite to tell him frankly what I thought of his statement. He was very much interested in bee-hunting. When we got home, although I had enjoyed my visit with him, I rather hoped he would stop at the hotel. But he did not. He came on down to our house. Then he wanted to see my music-book, "Root's Curriculum." I brought it outdoors and let him see it. Near the title he pointed to a star. At the bottom of the page he called my attention to a line of fine print. This fine print read, "Composed and arranged by Dr. C. C. Miller." I did not catch on, even then. Finally he pointed his thumb toward himself and said, "That's me. I am Dr. C. C. Miller. When I told you out in the woods that I composed that little refrain you did not believe me, and thought I was just bragging."

About that time I think I put out my hand and said, "Dr. Miller, I humbly beg your pardon. I meet so many men who take up a lot of my time before I find out they have got something to sell or some investment they want me to go into, that perhaps I am a little suspicious. I hope you will forgive me."

Then I invited our old friend into the house, and introduced him to Mrs. Root and the Rootlets. I think, however, I could not quite get it out of my head that he had some purpose that had not yet come to light. During the evening (for he stayed that night with us) he sang quite a few beautiful hymns; and one especially among them that I shall remember as long as I live; in fact, I believe I shall be glad to hear it sung when I come to die. It was the hymn called "The Rock that is Higher than I." By the way, if it should ever be your good fortune to meet Dr. Miller, by all means have him sing that old hymn for you. Well, before Dr. Miller left us (I think it was at family worship next morning, for about that time we had become well enough acquainted with him to invite him to ask a blessing at the table, if nothing more), I began to urge him to stay longer, instead of hoping he would go away, as I did 24 hours before. Then he said something like this:

"Mr. Root, I *have* been deceiving you somewhat. It *is* true, however, that I am greatly interested in bee culture, and I have been longing for the time when I could have a little home of my own, and do nothing but stay at home and keep bees. I have questioned you a great deal as to the possibility of a man's making a living by bee culture alone. You think it somewhat doubtful—at least until the man has had years of experience. Now, nothing would make me happier in the way of obtaining a livelihood than to be able to secure even moderate means, and be with my wife and family and my bees. I am hoping and praying that this may be brought

about. And now I will tell you frankly that there is one other thing that is even dearer to me than bees and bee culture—yes, of even more account, in my estimation, than a land flowing with milk and honey. I have been reading your writings in the *American Bee Journal*, and later in the GLEANINGS, that has been so well started. I see that you have the rare gift of interesting humanity. You love rural occupations, and God has given you the faculty of making others love the open air and the great broad fields as you do. Now, I want to see your influence, your zeal, and your peculiar gifts employed in winning souls to the Lord Jesus Christ as well as leading mankind to love outdoor work and rural employments, and that is mainly why I came here. I have hoped and prayed that something might happen to give me a glimpse of your home life. I knew you felt somewhat annoyed, but I felt there was something at stake, and I (for once in the world at least) crowded myself into a home where perhaps I was not wanted—that is, until you people knew me better. God has answered my prayer. I have had here one of the pleasantest visits of my life. You can not know or tell how I have appreciated this. And now I am going to arrange my business and my plans so as to be a bee-keeper and stay at home instead of being a traveling man for a great music house, and I want to keep in touch with you if you will not think I am asking too much."

There was some more conversation, that I can not recall, about making the Lord Jesus Christ my confidant and my friend. I tried to excuse myself by saying that I was not hostile toward Christianity; but my new friend said, very emphatically and solemnly, "He that is not for me is against me." Then he reminded me that not once in my writings in the *American Bee Journal* or GLEANINGS had I intimated or recognized the fact that the Savior of the world has claims on each and all of us. I accepted his friendship just then, but I did not accept Jesus Christ as the son of the living God until some months afterward. Since then I have thought of the way in which Moody and Sankey were received when they went over into England about that time. Our friends across the water were suspicious of the Yankees, and God knows they had reason to be; and when the story was started that Sankey was the agent for the little organ he used to accompany his singing, he was obliged to reply publicly, and assure the people that he had nothing to sell—that his sole business in going from America to England was to offer salvation as a free gift. "Ho, every one that thirsteth! Come ye to the waters; and he that hath no money, come." When the people were really satisfied that there was no appeal coming in for their money, they accepted him, and a great work followed, and Moody startled the world by showing that at least *one man* actually refused the money the people wanted him to take. Both he and Sankey might have become millionaires, but they did not want it and did not take it. Dr. Miller was getting what we considered at that time a large salary. I told him he could expect nothing like it in the way of bee culture. He said he did not care for a big salary, and did not want it. When I read that little Straw on page 1303 about living for a whole week on 35 cents' worth of boiled wheat, I thought of what he said about living a humble life with his bees. And now after all this preamble I want to have a little talk directly with our veteran friend. I think I shall have to call it an open letter to Dr. Miller.

Dear old friend, when I first saw that Straw on page 1303, about your wonderful yield of almost 20,000 sections from 129 colonies, I wondered if you remembered a conversation that you and I had on that morning when you went back to your work as a traveling man. We both had high aspirations for the outcome of bee culture; but I for one never expected you would ever make any thing like that which you have already reported. Of course, you have said repeatedly, while God has been blessing your labors, "Praise God, from whom all blessings flow;" and verily he has fulfilled the promise found in our opening text in helping you and me both to make this "a land flowing with milk and honey." I can hardly understand it now. When I made you a visit some years ago you were getting a great yield of beautiful white honey, and you said you actually could not tell or suggest where the bees got it. God sent it; and in this journal for Nov. 1, when I saw your statement of from 200 to 276 sections to a colony, I wondered again many times if you said, "Praise God, from whom all blessings flow." Then the figures you give there contain some lessons. If a queen, at least sometimes, is so valuable at two years of age, is it not true that a Leghorn hen (begging your pardon) may be valuable at two and three years of age? One moral is, that we must not go to killing off our queens or biddies just because they are *two years old.* But we should try to adopt some means to let the actual record (trap nesting), and not the age, decide how long to keep them; and the same with humanity. Let the record, not the age alone, decide in regard to a man's fitness for an important office.

I was wondering if you could not be induced to start in with Terry and me for not only a long life but a useful one. You have already, dear old friend, by your long years of experience, saved many a youngster from useless blundering. Of course, we old fellows have a good opinion of the value of our past experience; but there are plenty of younger ones all around us now who can with loving hearts guide and direct *our* footsteps while we are getting feeble from old age. God bless the younger ones; and may he help us to be ready, when it shall seem best for us, to stand out of the way and give place to the younger ones. I am sure they will always be ready, at least to stop and consider what we say, when we assure them they are going wrong. I for one rather *enjoy* growing old, especially when such friendly greetings cheer me, not only in my home, but in my writings. You say on page 1303 there are three reasons for your great success—"forage better; bees better; better bee-keeper." I wish these younger ones and everybody else would remember that your success stands back of you to *emphasize* the value of your opinion on almost all points in bee culture. I think I said recently, "May God be praised that he has permitted me to live and be in touch with such men as Edison, the Wright Brothers, Moody and Sankey," and last, but not least, with such a man and such a teacher as my dear old friend *Dr. C. C. Miller.*

# TEMPERANCE.

## "JOHN ALWAYS WAS A GENEROUS FELLOW."

BY EDWARD F. BIGELOW.

*Evidence 1.*—I sat by John at school on the old slab bench. The teacher's eye was sharp and voice was stern. We watched him furtively till, selecting the time when his face was turned toward "the board" to explain some difficult problem, we cut a sly caper. Now we "fired" a paper wad, raising a quickly smothered laugh from the opposite corner; then we held up briefly a jumping jack, and, later, John (with truly artistic spirit) drew a cartoon of Sam and the teacher at the board. Then John and I would dive beneath the desk, and he would share with me his luncheon apple. Thus did John and I while away the winter's day at school to the delight of our companions. John always was a roguish, chummy, generous fellow, but he set a pace in merry play that I could not follow.

TWENTY YEARS LATER.

*Evidence 2.*—For a score of years I wandered far away from the old farm, but John moved nearer to the village, and there lived on. In a mood that longed for boyhood days again, I visited the old schoolhouse. The walls were neglected; strange trees were growing where bushes had been; but the trees that I had known had become smaller. There was not a child that I recognized; but Alice, the teacher, greeted me as cordially as when she spelled the words I missed, twenty years before.

"And how are your father and Aunt Sue? I remember the walnuts she gave me."

Alice sighed and shook her head sadly. "Father isn't very well; Aunt Sue (didn't you know that?) died two years ago."

"But where is John, my chum?" I inquired. "He used to write to me occasonally, but for a dozen years I have lost track of him."

"John," said Alice," is his own worst enemy. He can't keep what he earns, but spends it all with boon companions in the barroom. He has too large a heart. John always was a generous fellow."

TWENTY YEARS LATER STILL.

*Evidence 3.*—Again I wandered into scenes afar, till at the end of another score of years a similar longing led me back to the little village. Only Uncle Eben knew me. He still keeps the corner store, where I had tugged out supplies to the farm wagon forty years before. How short a time! how long a time it seemed! Uncle Eben laughed heartily, and his grey beard bobbed up and down as did a brown one forty years ago. "Goin on eighty," said he; "pretty near time ter call the job done. But you," he said, "how fast you have grown taller!" But this seemed not to me surprising. If one is ever to grow tall, it should be within forty years I think.

"But what are those boys doing out there?" I inquired.

"They're plaguing John — get him so mad — pull his coat and punch him; but, say; you know John — why, John went to school with you out on the hill—poor John! He gets so 'full' it is a pity."

"John!" I exclaimed, and up the walk I hurried. And this old drunkard! I'll ask him where is "John," Jumping Jack John, among those plaguing boys. But this was my first thought—forty years—can it be that the drunkard is John? I'll try to see, so I took up the shout of the boys, but with a far different accent, "John! hey, John! they say you are John — don't you know me?"

But, no; it can't be my John, for he reeled backward on the walk and against the tree, bracing himself there, muttering in maudling, drooling, leering tones, "Well, what do you want, with all the others? I—I—s-a-y, you go to hell, will you?"

"John always was a generous fellow."

Stamford, Conn.

[Let me say to our readers that it made my heart throb when I saw something from Prof. Bigelow, written for my temperance column, and I want to call attention to the fact that the above is not only a grand temperance talk, but it is a *boiled-down story*. I am beginning in my old age to recognize that one of the indications of a great mind is the ability to tell much in few words, and Prof. Bigelow has done it. Most of us who have lived to be toward threescore and ten have had the same experience in meeting some old friends of our boyhood. May God grant that the record of the next generation shall tell a *different* story.—A. I. R.]

OHIO SHALL BE FREE.

At the present writing, the counties in Ohio are going dry at such a rate that one can hardly keep track of them. Big cities that have been literally intrenched in the saloon business have been made dry by the rural residents, even though the brewers put in their money and left no stone unturned to hold their trade. On page 1332 I gave a little clipping of the way in which one of our bee-keepers and honey-men heads his advertisement. Here is something more from our enterprising young friend:

*Mr. Root:*—Confirming my telegram of last night, it is my very great pleasure to inform you that Muskingum Co. voted "dry" yesterday by a majority of 1116. While the city went wet by a little over 1400, this was overcome by the vote of the rural districts. The wet majority in Zanesville was less than that conservatively estimated by the drys, while the dry majorities in the country exceeded expectations. Our temperance organization was well nigh perfect; and, in spite of thorough organization, stubborn resistance, and an immense corruption fund freely expended, we have, with God's help, won a glorious victory. One of the most gratifying results of this election is the breaking of the backbone of the Republican-Liquor organization—one of the most corrupt aggregations that ever dominated county politics.

EDMUND W. PEIRCE,
Zanesville, O., Nov. 17. Dealer in bee-keepers' supplies.

THE SALOONS AND TAXES.

Just now not only in Ohio, but more or less in the whole United States, there is war between the brewers and the Anti-saloon League workers. The strongest argument that has been brought forward by the saloon is that they *help pay our taxes.* The following, from the *Ohio Farmer*, is one of the best answers I have ever seen to those who really think that the open saloon is of some benefit in this way.

SALOONS INCREASE THE TAXES.

Because the liquor forces are flooding Ohio counties in which local-option elections are pending with warnings to voters that their taxes will be increased if they vote out the saloons, and

with arguments that the saloon taxes pay the poorhouse bills, etc., we wish to present the following facts for the especial consideration of any who may be likely to be misled by the fallacy of their arguments. There are not many public-spirited farmers who would not far rather pay more taxes to get rid of saloons if that were necessary. But it is not necessary. Instead, the absence of saloons and of the necessary means of controlling them and the disorder that they create, and of relieving the distress that they cause, has cut down the expense of every community that has voted them out. Read this testimony: Newcomerstown, O., reduced its tax rate 4.5 mills within three years after going dry. Athens, O., reduced its rate 8 mills in one no-saloon year. East Liverpool, O., 1.2 mills in one year. The mayor of Brunswick, Ga., says: "The decrease in crime since the passage of our prohibition act has been at least 80 per cent in this city." The sheriff of Oklahoma Co., Okla., in which the capital city, Guthrie, is located, says: "Since the anti-saloon act took effect, 60 per cent of the crime has ceased." In Knoxville, Tenn., as the result of no saloons, the salaries of the public-school teachers have been materially increased, and the school fund increased from $63,000 to $106,000. Comparison of arrests for drunkenness under "wet" and "dry" regimes are convincing. In Galesburg, Ill., during June, 1907, with saloons, the arrests were 113; in June, this year, no saloons, there were only 15. In Haverhill, Mass., during "wet" May, 1907, there were 91 arrests; this year, "dry," only 15. In Atlanta, Ga., during "wet" January last year there were 341 arrests; this year, only 64. An East Liverpool, O., business man wrote recently: "With 53 saloons we had not enough money to feed prisoners or purchase new collars for the east-end fire-station horses. With no saloons we have equipped a new fire-station at the west end, furnished free text-books in all our schools, and made provision for a purer water supply, yet our tax rate for the ensuing year is lower." Remember that the court and police and poverty-relief costs of saloons always exceed the taxes brought in by them, to say nothing of the greater cost caused by the destruction of manhood, morals, thrift, and industry.

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PERSONAL LIBERTY; THE AMERICAN FLAG, ETC.

*Dear Sir:*—Being a regular subscriber to GLEANINGS, I should like to make some suggestions in my way of thinking on some of the topics in your temperance columns. As for myself, I do not like them at all, and can't see any thing in them but a lot of trash, and think that, when you issue a bee-journal, you should stick to the bee industry alone, and give your readers what they are paying for — a bee-journal and not a political or religious magazine. I don't doubt that you are sincere in your convictions on the subject, but that does not justify you in letting your private opinions interfere with your business journal.

I have to-day read your issue of Sept. 15, and in Our Homes you quote a lot of sayings from other men, and therefore I think that you indorse the same; for instance, a religion that leaves the saloon undisturbed is not worthy to be called after the name of Jesus Christ You don't seem to know, or have forgotten, that Jesus was supposed to have made wine out of water; also another one—that, no matter whether a man be rich or poor, white or black, educated or not, he has the same chance and gets a square deal in this glorious country of ours. Now, you don't believe that yourself, do you? Certainly not; then why do you print such trash as that, and expect any man with only an excuse for a brain, to read any thing like that? As for myself, you need not think I am a drunkard; but I do take a glass may be once every two weeks, and should object to any man taking my personal liberty away from me and telling what to drink. Hoping you will excuse my criticism I remain, EDWARD FRITZSCHE,
Richmond, N. Y., Sept. 2.

Thank you, friend F., for your frank and honest criticism. Yes, it is true that my temperance and other talks come in a bee-journal; but if you will look on page 1106 of the journal you allude to you will find that we announce in every issue that our journal is

"DEVOTED TO BEES, HONEY, AND HOME INTERESTS."

In regard to this matter that has been so much discussed for ages, about Christ turning water into wine, I think the general decision has been that Jesus never offered any intoxicating drink to anybody. We have now what we call "wine" in our own cellar; but it is the pure juice of the grape, without any fermentation whatever, and is what is sometimes called "communion wine."

In regard to keeping wine or beer in your own home, and taking a glass say once in two weeks, as you suggest, the Anti-saloon League (of which I am proud to say I am a charter member) has *never* undertaken and does not undertake *now* to dictate what you shall eat or drink in your own home. We have nothing whatever to do with that, although the brewers and saloon-keepers have often brought the matter up as you do. It is against the open saloon as it is now managed that we wage war. The contrasts between towns and cities where they are run with saloons and without saloons, that are now being published, with the facts and figures from all over our land, is, I think, a sufficient reason why saloons should be put out of business, just as you see has been done by our victories of late.

Last, but not least, you quote what that poor foreigner who came to our own country says in regard to the American flag. That was his statement. It is our privilege, every one of us, to decide whether the American flag does mean all that or not; and I think you will agree with me that, at least as long as you continue here in America, the American flag *should* mean, "A square deal to every one, no matter whether he is rich or poor, black or white, educated or uneducated." If it does not mean all that just now, will you not, dear friend F., make it your business to join hands with the rest of us and *make* the "stars and stripes" really *mean* just what that poor man said they meant to him. May God bless and enlighten you and all others who feel as you do about the work that is being done just now in the way of banishing the saloons.

Just a word in closing. While I have had kind words in almost every mail for months past in regard to my temperance talks, there have not been half a dozen who have taken the position that you do; and there was just one other person who threw it into my teeth that the American flag does not mean what I seemed to imply it meant. This person lives in Canada. He said that the statement that you have referred to in regard to the American flag was a lie, and that I knew and that Bishop Wilson knew it was a lie. This brother did not sign his name to his letter, and so I could not reply to it. But I happen to know, however, that he is by no means a fair representative of our Canadian brethren.

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HOW THE POPULAR MAGAZINES ARE GOING DRY.

November 29 was the World's Temperance Sunday, and among other good things in the *Sunday School Times* for that date was an article headed "How the Popular Magazines are Going Dry." It seems there are about 60 different magazines published now in the United States; and of these they give a list of 40 that declare boldly:

We do not publish any advertising matter pertaining to intoxicating liquors. This publication will not lend itself as the medium to introduce into the family circle habits other than good.

May the Lord be praised for the above decision. Quite a number of the remaining 20 say they have not yet made up their mind, or do not know exactly where to draw the line, or something of that kind. This list does not include the agricultural or other class papers; but may the Lord be praised *again* for the fact that our agricultural and rural periodicals, nearly all if not quite all of them, are taking a *higher* moral stand, if any thing, than the magazines, and higher than a good many of the religious periodicals. Now, if

we could have just one daily paper — that is, a daily published in some of our large cities like Cleveland, that would rule out whisky advertisements, I should have great faith in the theory that the world is growing better. It is true we have excellent temperance editorials in these same papers; but what do you think of a paper and its management when we are told by our highest medical authority that intoxicating liquors in any form are always dangerous and harmful, inducing pneumonia, consumption, and allied diseases, and then be told in the advertising columns that Duffy's malt whisky is the *best remedy in the world* for the same disease? These editors know perfectly well that the whisky advertisement contains the vilest falsehoods, and yet they keep filling their columns so long as the money is forthcoming to pay for them. Now, is it not time for the people at large, who are working so hard for prohibition, to declare that they will tolerate no periodical in the home circle that advertises whisky or intoxicating medicines — not even the *daily* paper? God speed the time when this may come to pass.

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DRUNKEN CHAUFFEURS.

The clipping below seems to fit certain conditions very well. I think it might have a conspicuous place in GLEANINGS with an editorial footnote on the extenuation plea. Boston surely deserves the chromo. It has got to be too common that one guilty of misdemeanor and murder pleads insanity or the *drunk*, expecting leniency, when, in fact, the punishment should be doubled, as they were drunk. An intoxicated young man should not be allowed on the streets. It is a disgrace to a town to have a boy drunkard. F. DANZENBAKER.

Norfolk, Va., Nov. 4.

PROGRESS OF CIVILIZATION.

In Boston they seem to have solved one of the problems of modern civilization. A speed maniac there was sent to jail for six months for reckless driving of a machine. When he pleaded as extenuation that he had been drinking he was in addition fined for intoxication.—*Baltimore American.*

Amen to your suggestions, friend D. I have wondered whether some of these distressing accidents, if not most of them, that have resulted in the loss of life, were not caused by drink. There certainly should be some strict and severe laws in regard to permitting any man, even a *moderate* drinker, from running an automobile, no matter if it belongs to himself or to somebody else. Such a man might in some ways do even greater harm to society in general than a drunken engineer on a locomotive. If there are no laws in regard to the matter, let us quickly get about it and frame some. And I heartily agree with you in your closing sentence, that every town and every community is disgraced by the spectacle of a single "boy drunkard" on the streets.

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A "RED-HOT" TEMPERANCE LETTER.

*Dear Friend Root:*—Praise the Lord! My telephone-bell just rang; and on going to it my cousin in town said, "The local-option bill has passed! The bells are ringing! That is all we know." But it is enough! I suppose she means the De Pauw University and church bells are ringing, as they well may. Praise the Lord! At last we are freemen, and can go to the ballot-box and vote prohibition for our counties. Our hands have been tied these many years; but now we've got the Devil by the nape of the neck. We'll chuck him into the machine, and scrunch him like a pea between millstones! The imps of hell, the sons of Belial, or whatever you please to call the villians who have been selling liquid damnation, will be driven outside the camp into the wilderness. Praise the Lord! If any repent and forsake their sinful calling, they will be allowed to go to work and become honest, respectable men; but if they do not they will be kicked into some less intelligent community or thrown into jail. The saloon is doomed! Shout it from the housetops! At last we've got the ballot in our hands, and the saloon is doomed! Every good citizen is delighted. Of course, we have a long and bitter fight before us. Evil, like thistles and burdock, will never be exterminated until the millennium. But constant care and hard work can keep our fields reasonably clean.

Governor Hanly deserves great credit for calling the special session and forcing the bill through the legislature.

Recently Bishop Matthews, of the United Brethren Conference, nominated Hanly for President. I believe you have done the same. Go ahead! I am with you. DANE S. DUNLOP.

Greencastle, Ind., Nov. 11.

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"CHURNLESS" BUTTER MADE IN ONE MINUTE, ETC.; THE GREAT $5.00 SECRET.

We have had the "fireless" stove, the "lampless" brooder, and now we have the *churnless* butter. Some of the agricultural papers (I am glad to say only a *few* of them) have given a whole double-width column to this "great" invention. Here is the way it reads:

A new patented churnless butter made in one minute. No more work, no more worry. We can give you knowledge of how to make good wholesome butter in one minute. A patent was given by the United States Government for this process, and it had to be healthy and pure.

Now, that last sentence kind o' puzzles me. Is it the United States *government* that has to be "healthy and pure" or is it this wonderful process? We give it up. Below the above is a picture of a pretty girl with a bowl and spoon, making butter "in a minute." A little further down is a barefooted boy working an old-fashioned churn. And, by the way, why in the world *should* people fuss with churns of any kind when we can make better butter in one minute without *any* machinery? There can not be any hook or crook in the matter, because the advertisement goes on to say:

This process will not fail. It will do every thing we claim for it; if it will not, we will return the money you have paid us for it. Health officers, dairymen, and scientists have pronounced it excellent.

Now, the price of this wonderful secret for a family right is $5.00; but the enterprising agricultural paper has made arrangements to send the whole thing for only $3.00, and will throw in a subscription to their paper for three years. We scraped up the $3.00, and watched the mails breathlessly (?) for almost two weeks. Finally a single sheet of paper, printed in red and black ink, so as to make it look like a patent-right deed, came to hand containing this wonderful process, and we take pleasure in giving it entire to every reader of GLEANINGS free of charge. I am sure you will all be glad and thankful, especially after you read it over. Here it is:

CHURNLESS-BUTTER PROCESS.

Put fresh milk in suitable vessels to heat well. Heat over a slow fire. When milk has been thoroughly heated (not boiled) set in a cool place where it will get cold. When the cream has well risen, which will take from twelve to twenty-four hours for the best results, take off the cream with as little milk as possible, put in any vessel suitable to make butter in—this should be left in a cool place until the cream has gotten into a stiff condition. In cold weather the cream should be about 65 degrees. When it is stirred with quick strokes of a common butter-paddle, the butter will be made in about one minute if handled correctly. Wash and salt the same as other butter. In summer time or warm weather the cream should be kept in as cool a place as possible, and always begin to stir as soon as taken from the cool place; the weather being warm, the butter can be made quickly, even when the cream is at from 40 to 50 degrees. If cream is too warm it will become thin and take longer to make the butter, and when made will be soft and oily.

If buttermilk is desired, take the sweet milk after the cream has been taken off, put it in a suitable place to sour just as if you were preparing to churn the old way. When it is in a good clabber state, stir with spoon and make buttermilk of the finest quality. The sweet milk, after cream has been removed, is nourishing and wholesome.

Now, may be I shall get sued and put in jail, or be sent to the penitentiary for violating the patent laws; but the sheet of paper printed in red ink did not tell when the patent was granted. It has no date on it, and just one single signature. If I get put in jail I am sure the great lot of friends I have will help me to get out quick.

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CHURNLESS BUTTER—STILL MORE ABOUT IT.

*Mr. A. I. Root:*—The churnless-butter process is no fake nor humbug, as your friend H. W. Collingwood puts it. It is just what it claims to be, for I have used it since last winter, when I first heard of it. It *does* make as firm good butter as ever came from any churn, and very much better than comes from some churns. It is a labor-saving process. It may possibly have been known long ago, but that did us of to-day no good until some one brought it to our notice. We obtained the process more out of curiosity than because we had any faith in its doing any thing. I now have faith, and lots of it. MRS. WM. MEYER.

Tecumseh, Okla., Oct. 12.

Well, my good friend, I am very glad indeed to find that one woman, at least, is pleased with her investment; but do you not think it would have been more sensible, and much better all around, to have this simple process (which you admit is probably old) given on the pages of our home journals, just as we have given it, instead of asking each person to pay three or five dollars for the great secret as you have doubtless done?

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NAVIGATING THE AIR BY THE WRIGHT BROTHERS AND OTHERS.

The latest report we clip as below from the Chicago *Daily News:*

WINS IN FIVE MINUTES A PRIZE THAT NATIVES HAD BEEN CAREFULLY PREPARING TO CONTEST FOR.

LE MANS, NOV. 14.—"I might as well have that 1000 francs ($200), even if I don't exactly need it," remarked Wilbur Wright yesterday afternoon after suddenly deciding to try for the prize offered by the Aero Club of the Sarthe department for an aeroplane flying as high as 100 feet. In another half-hour he had shot up into the air on his machine without using the starting apparatus, and soon he soared twice around the big Auvours field at a height of fifty feet above the small captive balloons which marked the 100-feet height.*

It took Wright five minutes to win the prize, which several French aeronauts have been carefully preparing to acquire for several weeks past—not for the sum involved, but for what the Aero Club calls "the peculiar distinction of not only flying but flying at high altitudes."

GIVES LESSONS IN FLYING.

Wright is giving the last lessons in flying to a number of different persons, according to his contract. When these are concluded he will go to America via Cherbourg, because in the neighborhood of that seaport there still remains another prize to take—that for the straight-distance flying.

Yesterday's flight, made without using the sort of catapult which has caused so much gossip, has settled the question of the machine's being handicapped for long flights.

We gather from the above that our friend Wilbur has learned the trick of starting without his "catapult" (the starting apparatus I described in our last issue), and, in fact, I rather suspected they would, after they became better acquainted with the machine and its capabilities. The following clippings from *Aeronautics* for November give us glimpses of what is going on in the aeronautic world:

It has been figured that the total duration of Wilbur Wright's 72 flights in France, up to Oct. 15, inclusive, amounted to 13 hours 49 minutes (will it take place "all in one sitting" next year?). Thirty persons have been carried, including three women and a boy, a total distance of 431 miles.

On October 15, two flights were made of 1 minute 38 seconds, and 2 minutes 35 seconds, carrying MM. Mercanti and Gasnier. Wright stopped his motor when at a height of 120 feet and made a long smooth glide to earth.

On the 28th Count de Lambert began his lessons as an apprentice-aviator. For his first lesson he had three flights of 12, 8, and 15 minutes. On the following day the master and pupil made three more, 7 minutes and 5 seconds, 17 minutes and 34 seconds, and 19 minutes and 25 seconds.

In a recent interview Wilbur Wright stated that the success of his machine was especially due to the high efficiency of its propellers, that light motors were not essential, and flight could as well be attained with a steam-engine. He claims 70 per cent efficiency for his propellers.

Mr. Franz Reichel, who made the first "hour flight" as passenger on the Wright machine in France, has been the first one to describe accurately the wonderful sensation of human flying. He says: "If in an aeroplane going straight ahead is a delicious sensation, turning is a veritable intoxication. It was during these evolutions that I felt that the air was conquered, well conquered."

It is said that fully one hundred Wright aeroplanes have been ordered from the Societe Navale de Chantiers de France. They will be fitted with Bollee engines and be sold at $5000 apiece. Count de Lambert and Vicomte de La Brosse will receive the first two. (This seems an "awful lie.")

On the 28th Farman made another long flight and again another of about a mile with M. Painlevé aboard. Following these, other alterations were made and for the first time in the history of aviation a flying-machine traveled from one town to another.

NEW PRIZES—IN FRANCE.

1000 francs by Aero Club de la Sarthe as a height prize, with conditions making it possible for Wilbur Wright to compete (he was excluded from the other prize for height for not starting by his own power only). Captive balloons must be flown over at a height of 30 meters.

First, it is an agreeable surprise, at least to myself, to know that thirty persons, including a woman and a boy, were carried; and the second item declares positively that the machine actually carried *two people* besides Mr. Wright himself. If they would only tell us the total weight of the three persons we could judge a little better of the capacity of the machine for carrying burdens. I am very glad indeed to know that 100 machines have already been ordered, and that the others will be sold as low as $5000 apiece. That is not any more than some of our automobiles cost; but I do not exactly understand the footnote by the editor of *Aeronautics.* Does the "awful lie" refer to the 100 machines to be built, or to the price, or to the fact that the Count de Lambert and the Vicount de la Brosse will receive the two first?*

Our last item tells us that Farman is also making progress, and that he too is carrying a passenger; and that he has succeeded, at least to a small extent, in traveling from one town to another. When actual flying-machines begin to traverse the country by going from town to town as automobiles do, then we shall see such a stir throughout the whole wide world as has never been seen before.

My last clipping I have given to explain *why* it was that Wilbur Wright was induced to try *climbing up into the air* without the use of the catapult. Oh! is it not glorious to be alive when so much is going on in the way of invention and progress—not only on the face of the earth, but away up into the beautiful air above us, and, with a prospect in future, of enjoying companionship with the very *clouds* that float above us?

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* In a second flight of 11 minutes' duration, Mr. Wright is said to have risen to a height of 196 feet above ground. These are the first official records for height that the American aviator has made.—*Scientific American.*

* Since the above was in type I notice by one of the papers that Wilbur Wright has at least once shut down the engine while high up in the air, and made a gradual glide down to the ground in perfect safety. This refutes the statement made by several of the papers that disaster would surely follow in case of the breaking-down of the engine. If I am correct, the engine might be stopped for repairs while up in the air, and, if up high enough, and the repairs did not take too long, the difficulty would be little if any greater than in stopping the engine of an automobile for repairs

# HEALTH NOTES

ROBBING SICK PEOPLE.

The following, clipped from the *American Issue*, explains itself:

WHISKY AND CONSUMPTION.

In an address before the Mississippi Valley Medical Association in Louisville, Ky., on Oct. 15, Dr. T. D. Crothers, of Hartford, Conn., editor of the *Journal of Inebriety*, said:

The so-called moderate use of spirits, which diminishes the vitality and lowers the resisting power of nature, is an active cause of consumption and typhoid fever, and is accountable for over 30 per cent of the cases of pneumonia. In fact, there is no disease known, and no surgical operation performed, that is not influenced and made worse by spirits.

The present efforts of laymen and societies to correct and prevent this evil as a moral one is a sad reflection on the stupidity of the medical profession.

And yet every daily paper published in any of our large cities is filled with advertisements recommending whisky, not only for consumption but almost every other known disease, from Duffy's malt whisky for people toward a hundred years old to the Wilson whisky advertised on the waste-paper baskets all over the great city of Cleveland, on which we see advertising urging sick persons to *drink whisky* to make them well. We have as a nation succeeded in stamping out diphtheria and typhoid fever by *compelling* people to use pure water; but what is being done to prevent them from drinking bad whisky, even when this whisky is *worse* than poison? When one dies from typhoid fever he dies an honest, innocent death; but when he dies from the effects of whisky he fills a drunkard's grave. In the latter case, however, his friends do what they can to conceal the fact. Is it not almost time that Christian people, and temperance people too, refuse to take a daily paper or any other kind that parades such terrible falsehoods in regard to the use of whisky for curing disease? How about Chemist Wiley's remarks in regard to misleading and hurtful advertisements?

After the above was dictated I found the following in the St. Louis *Times:*

AD MEN WARNED NOT TO MISLEAD PUBLIC; LAW WILL PUNISH DISHONEST ADVERTISERS, SAYS GOVERNMENT PURE-FOOD EXPERT.

New York, Nov. 11.—Addressing the members of the Sphinx Club of Advertising Men, Dr. Harvey W. Wiley, head of the Government Pure-food Bureau, warned them that the publication of dishonest advertisements would land them in the toils.

"Let me tell you right now," he said, "that no advertising is honest which makes any misleading statement about the quality or benefits of the goods advertised. I would not like to see any of you brought up before me in Washington for any such offense, but if you continue, I will get you—or, rather, the law will."

Referring to the presence of deleterious compounds in almost all foods, Dr. Wiley said he had revised his morning prayer to read: "Give me this day my daily sins, and forgive me my bread, as I forgive those who gave it to me."

To the above I wish to add, three cheers for Professor Wiley! and let us each and all see to it that the way of the transgressor is made hard. When you get swindled by some misleading and dishonest advertisement it is a Christian duty to have those who deceived you brought to justice.

TROUBLE WITH OUR DIGESTIVE ORGANS.

I wish to suggest that the cause of Mr. Bischoff's sore stomach, as described on page 1272, Oct. 15, is that he is slightly overeating. Let him go without breakfast until 11 o'clock, or noon, and in a week or two his stomach will recover.

If the stomach feels very faint at about 9 o'clock, when doing without breakfast, take a small glass of water and put into it four tablespoonfuls of milk, and honey the size of a hickorynut. Mix them well and sip slowly with a teaspoon. This should satisfy the stomach until 12 or 1 o'clock. Sometimes going without breakfast causes a headache. If the omission of breakfast is *continued*, the headaches will finally stop.

The best remedy I have ever found for dyspepsia, or the disagreeable indigestion of food, is to eat a piece of raw cabbage at the close of the meal. Eat the stump and some of the green leaves on the outside. Get the cabbage fresh from the garden, and one of the smaller-sized ones, say a head about 4 inches in diameter. Cut it into quarters, and eat about one quarter. Use a little salt if it tastes better. I consider the cabbage a great deal deal better than any kind of fruit. If we use milk with our meals it should be mixed with four-fifths water, and slightly sweetened with honey. Sugar and bread cause the sore stomachs, most likely. Their carbons are dead.

In regard to the boiled wheat mentioned by Dr. Miller in the sixth paragraph on page 1243, I would say that, if the wheat is soaked through the night, it will boil in an hour or less instead of 2½ hours. After boiling the wheat let it stand in a warm place until it begins to *smell* of fermentation. It should not ferment enough to be perceptible to the taste. Taste and smell are two different things. Then grind it through a mill and boil it in a vegetable soup for five or ten minutes in fitting it for the table. After the fermentation the heat splits up the starch-cells. I have used wheat in this way for years.

Chatsworth, Cal., Nov. 7. C. W. Dayton.

The above reminds me that years ago I read that cabbage is more digestible when raw than it is when cooked; and oftentimes when I was running a market-wagon I found a small head of Jersey Wakefield cabbage that had just burst open would often afford me quite a luscious lunch. In fact, I used to put these cracked heads on the table, saying that I preferred them in that way to any of the various cooked cabbage, and this raw cabbage always agreed with me nicely. You see this is a strong argument in favor of "uncooked foods." Raw apples seem to me now to agree with me much better than any kind of cooked apple. I feel sure that most of us will find we can get benefit by using a certain amount of uncooked fruits and vegetables at every meal. And just see what a saving it is in time and fuel for the good wife!

BEE-KEEPERS AND POULTRYMEN; ARE THEY AS A RULE ABOVE THE AVERAGE IN THE WAY OF MORALS AND ABILITY?

It has been many times suggested—at least through the bee-journals—that bee-keepers are as a rule good, clean, and progressive men. I do not remember to have heard, however, that those who are in the poultry business have better morals than the average humanity; but it begins to look a little that way. Mr. J. F. Schureman has just given to the world a little book entitled "Harold Ware." While it is a story-book, and a most fascinating piece of fiction, the author manages to touch on the work of the Anti-saloon League, the labor troubles, both bees and poultry, and through it all to hold up the spirit of the Lord Jesus Christ as we see it exemplified through the hearts of the common people when they happen to get started in the right channel. The price of the book is 25 cents, in neat paper binding, or 50 cents in cloth. Address J. F. Schureman, Marseilles, Ill., editor of *Commercial Poultry*.

## Convention Notices.

The Colorado bee-keepers will hold their annual convention in Denver, at the American House, corner of Sixteenth and Blake, Dec. 8 and 9. Program later.

N. L. Henthorne, Sec.

A meeting of the bee-keepers of Eastern Illinois and Western Indiana will take place at the court-house in Watseka, Ill., Dec. 15 and 16, at 10 A.M. A good program is prepared. A question-box will be provided. Other business will be taken up. All interested will please attend. Ray Ensinger, Sec.

**The Rochester Radiator will**

SAVE HALF YOUR FUEL or give you double the amount of heat from the same fuel, if you will give it a trial, or we will refund the money paid for it. Write for Booklet on heating homes.

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For hard or Soft Coal wood or gas

Fits any Stove or Furnace

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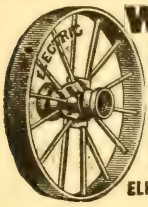


**WAGON SENSE**

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

**Electric Handy Wagon.**

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

ELECTRIC WHEEL CO., Box 95, Quincy, Ill.

DON'T WORRY OVER MONEY MATTERS but send for sample copy of Inland Poultry Journal and let us tell you how to make money out of poultry. Two full pages in colors, reproductions from oil paintings that cost us $1000.00. They are FREE.

Inland Poultry Journal Company
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**All leading varieties** pure-bred chickens, ducks, geese, turkeys, pea-fowls, and imported Scotch collie dogs. Send 4 cts. for large catalog.

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**But Is It Fire-Proof? Is It Insurable?**

**Why Take Risks** when you can buy **Cyphers Fire-proofed Insurable Incubators**—for years the leader in hatching **more and stronger chicks** than any other? Our 212-page Poultry Guide Book is full of valuable poultry information, as well as illustrated descriptions of these Insurable Incubators. It is **Free** if you send us names and addresses of two acquaintances who keep poultry. Address nearest office.

CYPHERS INCUBATOR COMPANY, BUFFALO, N. Y.
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**Ideal** The Low Priced Standard **Incubator**

25 years of experience in it. Tried and proven. Makes results certain. Send for great free book, "Poultry for Profit." 128 pages, practical, reliable. Worth dollars for fine pictures alone. Free. Send today to

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Engine complete ready to attach, as shown, to "any old pump," in 30 minutes

Write for Circulars

PRICE $37 1/2

THOUSANDS IN USE

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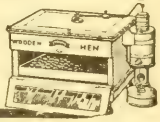
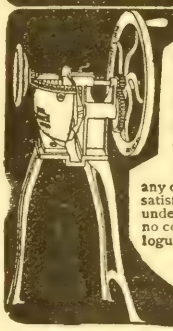
**Hatch Chickens by Steam** Stahl "Wooden Hen" and "Excelsior" Incubators assure big hatches. Well-built, reliable, practical—thousands in use. Catalogue free.




GEO. H. STAHL, Box 30 B QUINCY, ILL.

**WINTER EGGS**



Feed cut green bone; save half your grain and double your egg yield. The

**Humphrey**

Green Bone & Vegetable Cutter, the only open hopper machine, is guaranteed to cut more bone, with less labor and in less time than any other. Money back if you are not satisfied. It's the one hand cutter; feed under operator's control at all times; no complicated parts. Send for catalogue and special **Trial Offer.**

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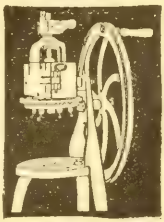
# You Can Get More Eggs

**And Save Feed Bills.**

GREEN BONE fed raw gives fowls the food they need to take the place of bugs and worms. It has more than four times the egg making value of grain: is rich in protein and other elements that make more eggs, fertile eggs, livelier chicks, earlier broilers, heavier fowls. Cut it with



**MANN'S** Latest Model **Bone Cutter**

Turns easily; cuts rapidly; never clogs: automatically adjusts itself to any one's strength. Cuts all bone with all adhering meat and gristle.

**Ten Days Free Trial** We ask no money until you try the machine. If not satisfied, return at our expense. Write for catalogue.

F. W. MANN CO., Box 37, Milford, Mass.

# 50¢ Bull Dog SUSPENDERS

**IN HANDSOME SINGLE BOXES MAKE USEFUL GIFTS**

More rubber, better webs, and stronger parts enable us to positively guarantee that

**BULL DOG SUSPENDERS**

**Outwear Three Ordinary Kinds**

Money back if not entirely satisfactory

**A gift of these useful, handsome, inexpensive suspenders in attractive, single-pair boxes, will be remembered by every man and boy, long after the occasion is forgot**

Made in light weight for the gentleman and in heavy weight for the strenuous user
Extra long in either weights, if desired

**STRETCH A BULL DOG—superior elasticity, which means more wear and comfort, is instantly noticed**

**Packed in handsome single-pair boxes, they are the most useful, satisfying gift you can buy anywhere for 50 cents**

**EVERY MAN, YOUTH AND BOY WILL GLADLY RECEIVE THEM**

**HEWES & POTTER, Makers**

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¶ Write for our instructive free booklet, "Style, or How to Dress Correctly," which contains valuable gift suggestions. For 10 cents postage, we will send our useful BULL DOG comb and case



# The Land of Plenty

Why remain where the climatic conditions are so much against you, where it is necessary to battle with the rigors of a long winter?

There are great opportunities in the South, where you can work out of doors the entire year.

**ALONG THE SEABOARD AIR LINE**

lands that are as productive as yours can be obtained reasonably — prices for your crops as good, if not better. Write for "Fruit and Vegetable Growing in the land of the Manatee," by a western man, containing full particulars. Address

J. W. WHITE
*Gen'l Industrial Agt., S. A. L. Railway*
*Dep't* F PORTSMOUTH, VA.



# The Wellington Hotel

**Cor. Wabash Ave. and Jackson Boulevard**

**CHICAGO**

REMODELED AT A COST OF

**$150,000**

**Hot and Cold Running Water and Long Distance 'Phones in all Rooms**

200 Rooms 100 with Bath Single or en Suite

RATES $1.00 AND UPWARDS

One of the most unique Dining-rooms in the country. Our famous Indian Cafe.

*Noted for service and Cuisine*

**McCLINTOCK & BAYFIELD, Props.**

# Special Christmas Offer

# LAUGHLIN FOUNTAIN PEN

AND

# RED GEM

## The Ink Pencil

**We offer, your choice of**

## THESE THREE POPULAR STYLES

**For Only** **$1.00**

**POSTPAID TO ANY ADDRESS**

By insured mail, 8c extra

**ILLUSTRATIONS ARE EXACT SIZE**

EVERY pen guaranteed full 14K Solid Gold. Cut on right hand, our new Non-breakable Transparent, a pen in which you can **always see** the quantity of ink in the holder. We guarantee this holder and cap against breakage from any cause whatsoever, accident or otherwise. Cut on left, our Standard Opaque (black) Holder; either of these two styles, plain or engraved, as preferred.

To show our confidence in the Laughlin Fountain Pen, you may try it a week: if you do not find it as represented, a better value than you can secure for **three times this special price** in any other make, if not entirely satisfactory in every respect, return it and we will send you $1.10 for it. The extra 10 cents is for your trouble in writing us. (Two customers in 3000 have asked for return of money.)

**Cut in center is our famous and popular Red Gem—the Ink Pencil, a complete leak-proof triumph—may be carried in any position in any pocket or shopping-bag, writes at any angle at first touch. Platinum (spring) feed. Iridium point, polished vulcanized rubber case, terra-cotta finish. Retails everywhere for $2.50.**

Insist upon getting the genuine **Laughlin** Pen—if your dealer will not supply you, order direct from us.

**Dealers and Live Selling Agents**—Write for our money-making proposition and terms. **Write Now** "lest you forget." Address

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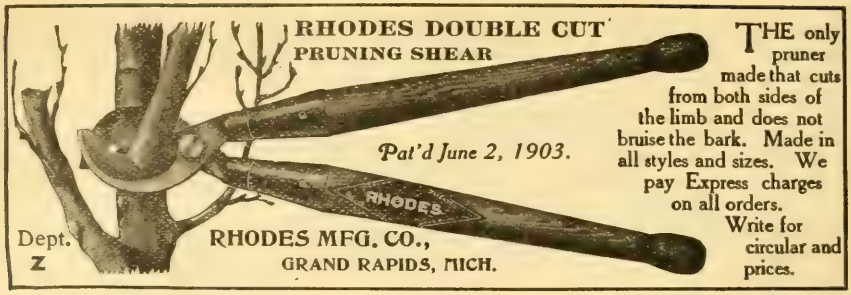
**616 Majestic Bldg. . . DETROIT, MICH.**




THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

# Paint Without Oil

## Remarkable Discovery that Cuts Down the Cost of Paint Seventy-five Per Cent.

### A Free Trial Package is Mailed to Every One Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder, and all that is required is cold water to make a paint weather-proof, fire-proof, and as durable as oil paint. It adheres to any surface, wood, stone, or brick, spreads and looks like oil paint, and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 9 North St., Adams, N. Y., and he will send you a free trial package, also color-card and full information showing you how you can save a good many dollars. Write to-day.

## Grow Mushrooms

**For Big and Quick Profits.**

Ten years experience enables me to give practical instructions that will add $5 to $60 per week to your income without interfering with regular occupation. For full particulars and free book, address JACKSON MUSHROOM FARM, 3404 N. Western Ave., Chicago, Ills.

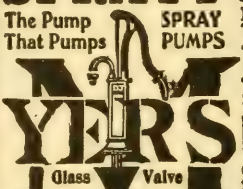
# VIRGINIA FARMS

## As low as $5 per Acre

with improvements. Much land now being worked has paid a profit greater than the purchase price the first year. Long summers, mild Winters. Best shipping facilities to great eastern markets at lowest rates. Best church, school and social advantages. For list of farms, excursion rates, and what others have accomplished, write to-day to F. H. LABAUME, Agr. and Ind. Agt., Norfolk and Western Ry., Box EQ Roanoke, Va.

# SPRAY PUMPS

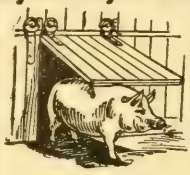
The Pump That Pumps SPRAY PUMPS




Double-acting, Lift, Tank and Spray PUMPS

Store Ladders, Etc. HAY TOOLS of all kinds. Write for Circulars and Prices.

## Myers Stayon Flexible Door Hangers



with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon." Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

F. E. MYERS & BRO.
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To prove that our "Blizzard Belt Evergreens will grow in all parts of the country we offer to send 6 fine Spruces ¼ to ½ ft. tall, **free** to property owners. Wholesale value and mailing expense over 30 cents. To help, send 5 cents or not as you please. A postal will bring the trees and our catalog containing many colored photo plates of our choice Blizzard Belt Fruits, Ornamentals, etc. We want to get acquainted with you and it will pay you to get in touch with our Hardy Blizzard Belt trees. 39 years' experience in growing hardy trees here in what was once called the Great American Desert. Write today.

THE GARDNER NURSERY CO., Box 26, Osage, Iowa

# Texas Land $1.00

## To $5.00 Per Acre

Texas has passed new School Land Laws. Millions of acres are now to be sold by the State at **$1.00 to $5.00** per acre; only one-fortieth cash and no more to pay for **40** years, unless you desire; only 3 per cent interest You can buy **160** acres at **$1.00** per acre, payable **$4.00** down and **40** years' time on the balance, 3% interest. Greatest opportunity ever offered to investors and farmers. Texas land is better than Oklahoma, Iowa or Illinois. Send 50 cents for Book of Instructions, New State Law, Map of Texas, and brief description of over **400 million** acres of vacant public lands in 25 different States, which are open to homestead. Three Books for $1.00.

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# YOUR HIDES AND OUR HIDES

## MADE INTO WARMTH FOR THE WHOLE FAMILY

We are the largest firm in the country that tans, manufacturers and sells all kinds of fur goods direct to the consumer. Our beautiful catalogue tells you how to get the best fur coats, robes, neckpieces, ladies' jackets, children's coats, fur-lined coats, etc., made to order, saving for yourself the jobbers' and retailers' profit. Our stock of hides and skins is complete. We furnish the material and manufacture to measure for automobilists, farmers, physicians, etc., and their families, all varieties of fur goods; or, we will tan, any kind of skins, wild and domestic, you send and make them into furs for any member of your family.

Don't sell your hides or skins. It's poor economy. Send them to us and have them made into coats, robes, mittens, jackets, ladies' furs, etc., and keep your family warm this winter. Any color horse or cow hide looks well. Our process makes them soft and pliable, also mothproof and waterproof.

**No Matter Where You Live We Will Pay the Freight On All Hides Sent to Us to Be Made Into Coats or Robes**

**FREE:**—With each cow or horse hide coat or robe made from hide furnished by you, we make free for you a pair of knit-lined mittens with horse-hide palms. Hear what Mr. Chestnut, Straw, Mont., says: I received the overcoat made from the hide I sent you. It is surely a dandy and those mittens made to match overcoat are all right. I am highly pleased with the goods.

You'll feel the same when you deal with us once. Send for new, handsome catalogue and learn all about our money-saving methods. Write today.

**National Fur and Tanning Company,**
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# PLEASURE AND PROFIT

**MAKE MORE MONEY—Read this 128 to 200 page Magazine;** published monthly and treats on the following subjects: Steel Traps, Where and How to Set; Baits and Scents; The Proper Season to Trap; How to Skin, Stretch, and Handle Furs; New Ways to Capture Mink, Fox, Wolf, Marten, Beaver, Otter, and Other Shy Animals; Raising Fur-bearing Animals; Growing Ginseng and Golden-Seal; Training Night-hunting Dogs; Leading Fur Markets; London Raw Fur Sales; Fox Hunting and Hounds; Coon Hunting; Letters from Old Hunters and Trappers, etc.

The Magazine contains from 128 to 200 pages each month, averaging about 160, or 2000 pages a year. About 700 illustrations used each year. Subscription price, **$1.00** a year. Single copy, **10 cents.**

**STEEL TRAPS.**—All about the various makes and how to use them. Also chapters on care of pelts, etc. Contains 333 pages, 130 illustrations. Price 60 cents.

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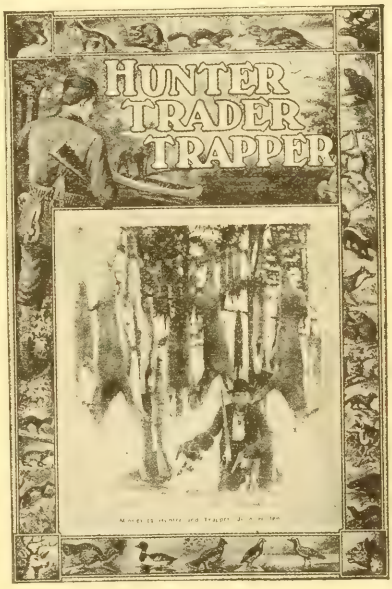

A book of valuable information for growers of Ginseng and Golden-Seal, as well as collectors of medicinal roots, barks, leaves, etc. Tells how to grow and where found, medicinal uses, value, etc. Contains 317 pages, 5 x7 inches, and 130 illustrations.

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Ten cents may be deducted from each book when two or more are ordered.
**32-page booklet, describing magazines and books, free.**



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**1000 FERRETS. Some trained.**
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N. A. KNAPP, ROCHESTES, OHIO.

# HILTON'S Strain of Bees and What They Did

*Dear Friend Hilton:*—The two three-frame nuclei I received of you May 21 were received in fine condition, and the red-clover queens proved themselves worthy of the name. I never saw finer or gentler bees. They were transferred to ten-frame hives and full sheets of foundation. I now have four strong colonies, with plenty of stores for winter, and have taken 195 lbs. of fine extracted honey, mostly clover. I want two more nuclei for next spring delivery, and my neighbor wants another. You may use this letter or any part of it as you choose.

Gratefully yours,
Rhinelander, Wis., Sept. 14, 1908. G. C. Chase.

In addition to the above I have sold friend Chase about $200 worth of ROOT GOODS, which deserve some credit for the above results—the best of every thing is none too good. ROOT'S GOODS and Gleanings helped. If you are not taking Gleanings, WHY NOT? For an order of $10.00 before Jan. 1 I will give Gleanings one year; $20.00, two years; $30.00, three years; or you may have Gleanings from now to the end of 1909 for $1.00; two years for $1.50; three years for $2.00. SEND FOR MY 40-PAGE CATALOG. CASH FOR BEESWAX, or will exchange goods for it.

**GEO. E. HILTON**
**FREMONT, MICH.**

# WESTERN Bee-keepers

.. will ..

**SAVE TIME AND FREIGHT**

**by ordering ROOT'S GOODS from Des Moines, Iowa.**

A FULL LINE OF

# Shipping-cases,

**Honey-extractors,**

**and all other seasonable goods now on hand.**

We are also prepared to supply goods for next season's use at special discounts.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

**JOS. NYSEWANDER**
**565-7.W.7th St., Des Moines, Ia.**

# Merry Christmas

We're talking to the wives and daughters in the families where Gleanings goes. Why don't you get *him* something that will suit him better than any thing else for Christmas, and that is to renew his subscription to Gleanings or get him a copy of the new 1908 edition of the A B C and X Y Z of Bee Culture?

**Offer No. 1**

Gleanings one year, and a bee-veil with a silk tulle front, $1.15.

**Offer No. 2**

A B C and X Y Z of Bee Culture, 1908 edition, and bee-veil, both postpaid, $1.65.

**Offer No. 3**

Gleanings one year, A B C and X Y Z of Bee Culture, and bee-veil, all postpaid, $2.40.

**EXTRA**

The Christmas number of Gleanings, and all of 1909 are included.

We will mail to separate addresses parts of the same offer.

When requested we will send a personal letter to any address announcing the offer as a Christmas gift, and giving the name of the giver.

We will mail so as to reach destination as near Christmas Day as possible.

No matter where you are located in the United States, you can take advantage of these offers.

# M. H. Hunt & Son

**Lansing, Michigan**

UDO TOEPPERWEIN W. M. MAYFIELD

# NEW STOCKS

During the season just closed we have, on account of the unusual demand for our supplies, reduced our stocks to a minimum.

# VISIT TO THE FACTORY

Knowing so well the requirements of the bee-keepers of the South, I decided to visit the factory of The A. I. Root Company and personally select our stock for the coming season. This I am now doing, and will be back in San Antonio to give personal attention to the trade shortly after this announcement appears. While our goods have always been of first quality, this personal selection will assure even more uniformity than ever before, and I want to say to my bee-keeping friends that, while I am well acquainted with all of the leading lines of bee-keepers' supplies, I have never seen any thing equal to the quality of those which I now have.

# JOB LOTS

Notwithstanding the reduction of our stocks as above noted, we have on hand a few desirable lots of shipping-cases and a few other goods for which we have but a very limited demand in the South; and, rather than carry these in stock, we have decided to close them out. We refer intending purchasers to the list of shipping-cases published in the November 1st issue of GLEANINGS, page 1337. For further description of these and similar goods, write us.

# HONEY-CANS

As usual, we are prepared to supply all styles of honey-cans in all sizes, and solicit your inquiries and patronage. Our contracts with the factory enable us to furnish these at lower prices than any other Southern concern, and the quality is the best.

# WEED FOUNDATION

It will be remembered that we have a full equipment of Weed machinery, so that bee-keepers having large lots of select wax which they desire worked into foundation by the pound can have it done at San Antonio, and save heavy transportation charges. We also furnish the same at the usual catalog prices. While on my visit to the factory I have selected additional machinery to keep our equipment up to the best.

Soliciting your continued patronage I am yours truly,

UDO TOEPPERWEIN.

## TOEPPERWEIN & MAYFIELD

**1322 South Flores Street SAN ANTONIO, TEXAS**

# FASHION BOOK FREE!

I want to send you my handsome new book showing hundreds of latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

## HOW I DO IT.

I publish the **FARMER'S CALL, a weekly** paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for Women folks, is its fashions in which I show the **5c patterns.** Let me help you to save money.

## MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week** (over 1000 pages) **for one year** and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts because I buy them by the thousand and don't make any profit. I don't want the profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY!

**JOHN M. STAHL,** Dept. G, **QUINCY, ILL.**

# Flower Language Post Cards

**A series of 12 beautiful cards**

# FREE

**TO YOU**

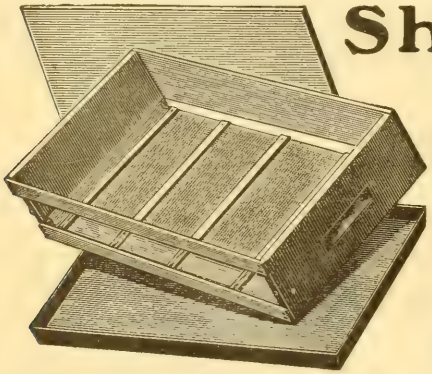
Do you know the language the flowers talk?

Here is a wonderful series of twelve beautiful Flower Language Post Cards that I will send to you absolutely free. Only send me ten cents for a six month's trial subscription to my big 24-page journal, THE GLEANER, which is of interest to every member of the family, and I will send you all twelve of these beautiful cards absolutely free as a present. Each card portrays a different cluster of life colored flowers arranged in artistic designs reproduced from paintings by J. Leslie Melville. Each card has a beautiful poem written by C. Preston Wynne, revealing the language of the flowers in verse. Think of it,

## 12 Beautiful Post Cards

and THE GLEANER for six months on trial for only 10 cents and REMEMBER that if you will write me at once I have a *surprise for you.* Don't forget to ask about it. Don't lay this down and say "I'll send for these tomorrow;" WRITE RIGHT NOW.

**G. H. SLOCUM, Publisher**
**904 Majestic Bldg. Detroit, Mich.**



# Shipping-cases

for any number or size of sections desired. These cases are made of fine white basswood, and the workmanship is first class. Owing to the shortage in the honey crop last year we have a good stock on hand and can make immediate shipment.

Twelve-inch case, with follower, to hold 24; or eight-inch case, with follower, to hold twelve beeway sections, shipped when no size is mentioned. All cases single tier unless otherwise ordered.

## Honey-packages in Tin.

Standard packages for storing and shipping extracted honey. Less chance for leakage or taint from wood; being square they economize space. Five-gallon cans boxed two or one in a box; gallon cans 10, ½-gallon cans 12 to box. Five, one, or ½ gallon cans not boxed if desired. Prices on application for any quantity.

Place your order now; prices and prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY COMPANY**
**123 Nicollet Island, Minneapolis, Minn.**

# A BIG RENEWAL OFFER!

TWO BEE-PAPERS FOR ABOUT THE PRICE OF ONE.

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| **American Bee Journal,** | **1 yr., $0.75** | OUR PRICE | |
| **Gleanings in Bee Culture,** | **1 yr., 1.00** | **$1.25** | |
| | **$1.75** | FOR THE TWO | |

New subscribers at same rate. Sample copy of Bee Journal free. Send all orders to—

**THE AMERICAN BEE JOURNAL, .. 118 W. Jackson, .. CHICAGO, ILL.**

# PATENTS.

**Twenty-five Years' Practice.**

## CHARLES J. WILLIAMSON,

**Second Nat'l Bank Bldg., Washington, D. C**

Patent practice in Patent Office and Courts.
Patent Counsel of The A. I. Root Co.

THE ABC OF

# BEE CULTURE

The only cyclopedia on bees, 536 pages, fully illustrated. Every phase of the subject fully treated by experts. Price $1.50 postpaid; money refunded if unsatisfactory. Catalog of supplies and sample copy of our semi-monthly magazine, *Gleanings in Bee Culture,* free if you mention this paper.

**Gleanings in Bee Culture, Medina, Ohio.**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over.**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

**FULL LINE OF**

**ROOT'S GOODS**

NO CHARGE FOR DRAYAGE.

**John N. Prothero**

**Dubois, .. Pennsylvania**

# Rock-bottom Prices

.. ON ..

**Root Quality**

**Bee-Supplies**

Together with the very best shipping facilities over some thirty odd railroads and steamboats is what we can offer bee-keepers north, east, south, or west of St. Louis. Simply send us a list of goods wanted, either for immediate or future delivery, and we will quote you our best special cash price, either delivered at your station or on board cars at St. Louis.

Every day delayed, now counts.

**BLANKE & HAUK SUPPLY CO.**

1009-11-13 LUCAS AVE.

ST. LOUIS, MO.

# BIENENZÜCHTER!

von Deutschland, Schweiz, Oesterreich, u. s. w., senden Sie fuer unsere 1907 Preisliste von

Bienenwohnungen, Rauchapparaten, Hon gschleudern, Handschuhen, Bienenschleiern, Walzwerken, Futterapparaten, Porter's Bienenflucht, Fluglochschiebern für Kasten, Königinenabsperrgittern, Weiselkäfigen, Schwarmfangbeuteln, Entdecklungsmessern, Dampfwachsschmelzern, Wabenenentdecklungsapparaten, und allen anderen Bienengerätschaften der

**A. I. ROOT COMPANY**

Grösste Fabrik Ihres gleichen in der Welt

**EMILE BONDONNEAU**

General Vertreter für Europa und Kolonien

**142 Faubourg Saint Denis, Paris, 10me.**

# ORDER EARLY

**Secure the Benefit of Discount on Fall Orders**

For November, 5 per cent discount.
For December, 4 per cent discount.

**THE A. I. ROOT CO.**

SYRACUSE, . . NEW YORK

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

For Sale.—To reduce stock I offer for sale as follows; 26 cases of stock No. 40, and 40 cases of stock No. 44 at $10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries; being extracted from select all-sealed upper stories. A third of a century's experience in the production of fine extracted honey. Ask for my little circular "A Word about Extracted Honey;" this will explain why it pays to buy this delicious stock.
E. D. Townsend, Remus, Mich.

For Sale.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 8c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.
Leonard S. Griggs, 711 Avon St., Flint, Mich.

Raspberry Honey, left on the hives until thoroughly ripened; thick, rich, delicious; put up in new 60-lb. tin cans; $6.25 for one can; two or more cans at $6.00 per can. Sample ten cents, and the ten cents may apply on the first order.
W. Z. Hutchinson, Flint, Mich.

For Sale.—Buckwheat, amber, No. 2 white comb, $2.50 per case of 24 sections; unfinished and candied comb, $2.00 per case; amber extracted (¾ clover), two sixty-pound cans to case, at 8 cts. Quirin-the-Queen-Breeder, Bellevue, O.

For Sale.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.
J. P. Moore, Queen-breeder, Morgan, Ky.

For Sale.—I have some extracted honey, well-ripened, fine, clover and basswood, in new five-gallon round cans, at $5.50 a can; sample free; delivered f. o. b. cars here; ought to suit anybody. Mathilde Candler, Cassville, Wis.

For Sale.—Clover, amber, and buckwheat extracted honey. Table quality. Write for prices, stating your needs.
C. J. Baldridge, Homestead Farm, Kendaia, N. Y.

For Sale.—Choice white-clover extracted honey, in new 60-lb. cans, or any shape desired. Ripened on the hives and guaranteed strictly pure. Sample free J. F. Moore, Tiffin, O.

For Sale.—Fine extracted white-clover honey; also light amber fall honey, put up in barrels, 60-lb. and 10-lb. cans. Write for prices. Dadant & Sons, Hamilton, Illinois.

For Sale.—Buckwheat extracted honey, 160-lb. kegs at 6½ cts.; 60-lb. tins at 7. J. I. Parent, Ballston Spa, N. Y. Rt. 2.

## Honey and Wax Wanted

Wanted.—Comb, extracted honey, and beeswax. State price, kind, and quantity.
R. A. Burnett, 199 South Water Street, Chicago, Ill.

Wanted.—25 tons of fancy comb honey. Write, stating particulars, to C. M. Church, New Kensington, Pa.

Wanted.—Choice extracted basswood honey. Prompt payment on receipt. Will pay 7c in new cans f. o. b. West Bend.
H. C. Ahlers, West Bend, Wis.

Wanted.—Choice white-clover honey in 60-lb. cans, also choice white-clover comb honey in Danz. sections, No. 1 and No. 2. State price f o. b. here.
Joseph W. Leib, 563 S. Ohio Ave., Columbus, O.

## Bees and Queens

For Sale.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. Rails, Orange, Cal.

For Sale.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. Long, Biscoe, N. C.

## Wants and Exchanges

Wanted.—Bees for second-hand hives, thoroughly cleaned by steam; size 16x16; 10½ inches deep, ten-frame; suitable for the production of comb or extracted honey. Many of these hives are almost new. Would consider sending a carload to some responsible Texas apiarist in good locality for increase to fill on shares.
Thos. J. Stanley, Manzanola, Otero Co. Colorado.

Swap.—Round clear glass jars with screw-tin caps, and waxed; linear of 22-oz. capacity (nearly 1½ lbs.), in reshipping-cases of 2 doz. each; 6 cases at $5.50, in exchange for choice white-clover extracted and comb honey; 12 cases or more at $5.25 for each 6 cases. Joseph W. Leib, 563 S. Ohio Ave., Columbus, O.

Wanted.—To exchange for bees, one ladies' bicycle, one 4x5 photo outfit, and one breech-loading shotgun, all like new.
M. W. Shepherd, Wakeman, Ohio.

Wanted.—Refuse from the wax-extractor, or slumgum. State quantity and price. Orel L. Hershiser,
301 Huntington Ave., Buffalo, N. Y.

Wanted.—Bees on shares or lease for season of 1909; Pacific States preferred. C. A. Wurth, 640 Leverette St.,
Fayetteville, Arkansas.

## For Sale

For Sale.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.
W. P. Smith, Penn, Miss.

200 Bee Hives at a sacrifice; practically as good as new; set up and well painted, ready for the bees. Shipped to take K. D. rate. Regular Dovetailed and Langstroth, $1.00 each. Langstroth-Simplicity and plain joint hives, 75 cts. each; four-frame automatic extractor, $17.00. 60-lb. can honey, $5.95.
L. M. Gulden, Osakis, Minn.

For Sale.—Barnes combined machine, with two 6-in. and two 8-in. saws; one set Huther cutter-heads; used two months; good as new. I have my lumber worked up; will sell for $35, cost $45. J. B. Hollopeter, Pentz, Pa.

For Sale.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.
Kensington Cattery, Marion, Ohio.

For Sale or Trade.—One Humphrey green bone-cutter, good as new—cost $12. Would like to trade for a good Oliver typewriter and pay difference.
A. M. Ringer, New Lexington, Ohio.

For Sale.—Klondike strawberry-plants, $3.00 per M., f. o. b. Beautiful magnolia-trees, 3 for 50 cts. postpaid.
R. H. Manly, Rfverton, La.

For Sale.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. Anton G. Anderson, Holden, Mo.

For Sale.—Young English ring-neck pheasants. Cheap. Am overcrowded. Also old stock.
Riverside Pheasantry, Dorchester, Wis.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.
Stapler's, 412-414 Ferry St., Pittsburgh, Pa.

## Post Cards.

Eight beautiful Christmas or New Year's Cards mailed for 15c; 13 for 25c. Also birthday, comic, or miscellaneous cards. Say what you wish, and whether for adults or children.
M. T. WRIGHT, Medina, Ohio.

## Help Wanted

WANTED.—Capable man 30 to 40 years of age, married, to take charge of small farm in Ohio. State experience, salary wanted, date could begin, and give names of references. Address JOHN SMITH, Gleanings in Bee Culture, Medina, O.

WANTED.—An intelligent man of modern ideas to take charge of small farm and cranberry-bog. Farm on shares; bog on salary. Address LOCK BOX 98, Bordentown, N. J.

## Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

FOR SALE.—Five-acre tract, ¾ mile from center of Nampa, Ida.; cultivated; three-room house; rooms 14x18, 14x14, 14x12; cement walls, nicely papered; cellar under house; well of good water on back porch; two 18-ft. porches; two-story barn; room for 6 head of stock and 4 tons of hay; sheds for three wagons, etc. Price $2500, if sold at once. U. S. Government water-right, best there is. Nampa is the best town on short line; unexcelled for bees. Address H. M. RUDDOCK, Caldwell, Ida.

CALIFORNIA SELF-SUPPORTING HOMES. Choice lands for them near Sacramento. Perfect health. Purest water. Inexhaustible wells, $6. No extreme heat. Oranges ripen in winter. Wholesale grapes clear $100; 250 hens clear $500 yearly. No farming. No peddling. Like town life. Only desirable families. Neighbors endorse this advertisement. $75. Easy terms. B. MARKS, Box 28, Galt, California.

FOR SALE.—Five or ten acres in the beautiful town of Orlando, Fla. Will sell very cheap, or exchange for Canadian property. C. H. LEWIS,
85 Victoria Ave. N., Hamilton, Ont., Can.

FOR SALE.—See ad. in Vol. 36, No. 15. No fires here; unlimited bee-range; tender fruits and vegetables mature. Canon Ranch. Old age. Must sell. F. F. GEORGE, Fraser, Ida.

FOR SALE.—Forty acres of unimproved timber; fruit, poultry, or bees; $3.00 per acre. W. G. SKINGLEY,
Des Arc, Mo.

FOR SALE.—Salt River lands in Arizona, under Roosevelt dam. C. F. PULSIFER, Alhambra, Arizona.

FOR SALE.—32 acres land, orange-grove, apiary and chicken ranch. J. W. BANNEHR, Bradentown, Fla.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall.
A. W. YATES, 3 Chapman St., Hartford, Ct.

GOLDEN yellow Italian queens — my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.


## Special Notices by A. I. Root

After you see this, address *me, individually,* at Bradentown, Fla., instead of Medina, O.

### AN AERMOTOR OR GASOLINE-ENGINE FOR PUMPING WATER —WHICH?

I have spent some time in looking over the agricultural papers with the view of deciding whether I should pump with a windmill or a cheap engine for our one acre of land in Bradentown, Fla. The windmill is certainly the cheaper of the two, and it does not require any outlay for gasoline. But there are two objections: First, with the windmill you must have a reservoir to hold water to be used when the wind does not blow. This may cost as much as the windmill, or even more. Second, even in Florida we sometimes have several days with but little wind when we might need it badly and could not get it. This little engine will, however, give you an even steady stream just as long as you want it, and no longer, so there is no particular need of having a reservoir; and with such a rig it makes no difference whether the wind blows or not. In fact, it is very desirable many times to water your stuff just about sundown, and perhaps after dark; and that is the time when the wind is especially liable to "die down." Well, while I was considering all of these questions I happened to notice a pretty little advertisement on p. 1396 of our last issue. Just as soon as my eye caught a glimpse of the picture I wanted to swing my hat, and the price of the little engine is only $37.50. I wish to congratulate the Aermotor folks on having hit upon such a neat device to "back up" the wind.

### SWEET-CLOVER SEED.

We have on hand a good stock of choice sweet-clover seed, both white and yellow. Of the white we have both unhulled and hulled seed, and of the yellow we have at present about 250 pounds hulled, and have engaged a lot of unhulled yellow, which is expected to arrive soon. It is usually difficult to supply the entire demand for unhulled, white and yellow, and we suggest immediate orders, to be sure of getting some of our present stock. Prices are as follows:

| In lots of | 1 lb. | 10 lbs. | 25 lbs. | 100 lbs. |
|---|---|---|---|---|
| Unhulled white, per lb., | $ .15 | .13 | .12 | .11 |
| Hulled white, per lb., | .22 | .20 | .19 | .18 |
| Unhulled yellow, per lb., | .18 | .16 | .15 | .14 |
| Hulled yellow, per lb., | .25 | .23 | .22 | .21 |

If sent by mail, add 8 cents per lb. for postage. Leaflet on sweet clover sent with each lot of seed if requested.

# THE YOUTH'S COMPANION

## For 1909

## The Best Christmas Present for $1.75

There never was a household to which a Christmas Present of a year's subscription for The Youth's Companion did not bring unfeigned pleasure. If it is given to one of the younger members of the family, the older ones will have a large share in it. What other present costing so little is so certain to be appreciated and welcomed?

*The fifty-two issues for 1909 will contain as much reading as twenty 400-page books of fiction, history, etc., ordinarily costing $1.50 each.*

Send for Sample Copies of the Paper and Illustrated Announcement of the New Volume.

**CHRISTMAS PRESENT COUPON.**

**EVERY NEW SUBSCRIBER who at once cuts out and sends this slip (or the name of this publication) with $1.75 will receive** JM70

**GIFT 1.** All the remaining issues for 1908, including the Thanksgiving and Christmas Holiday Numbers.

**GIFT 2.** The 1909 Calendar, "In Grandmother's Garden," lithographed in thirteen colors, size 8 x 24 inches.

**Then The Companion for the 52 weeks of 1909—a library of the best reading for all the family.**

THE YOUTH'S COMPANION, BOSTON, MASSACHUSETTS.

Before buying your Comb Foundation, or disposing of your beeswax, be sure to get our prices on wax and foundation, or our prices on working wax into foundation.

We are also in a position to quote you prices on hives, sections, and all other supplies. We give LIBERAL DISCOUNTS during the months of November, December, January, and February.

**Remember that**

# DADANT'S FOUNDATION

**is the very best that money can buy.**

We always guarantee satisfaction in every way.

LANGSTROTH ON THE HONEY-BEE (new edition), by mail, $1.20.

Send for our prices on Extracted, White-clover, and Amber Fall Honey.

**DADANT & SONS, . . HAMILTON, ILL.**

# FOR OVER 25 YEARS

our make of goods has been acknowledged to be in the lead as regards WORKMANSHIP and MATERIAL.

## Our AIR-SPACED HIVE is a most excellent winter hive,

and fully as good and convenient for summer management as the single-walled. Same inside dimensions as regular Dovetailed hives; all inside material interchangeable with Dovetailed hives.

## We manufacture full line of BEE-KEEPERS' SUPPLIES.

| | | | |
|---|---|---|---|
| FALL AND WINTER DISCOUNTS: | Sept., 7 per cent. | Nov., 5 per cent. | Jan., 3 per cent |
| | Oct., 6 per cent. | Dec., 4 per cent. | Feb., 2 per cent. |
| | | | Mar., 1 per cent. |

Catalog free.

**W. T. FALCONER MFG. CO., Jamestown, N.Y.**

# Enjoy The Fruit of Your Labor

Get an orchard or farm of your own in Washington along the new line to the Pacific coast.

Unirrigated lands there sell, at $15 to $50 per acre. Irrigated at $100 per acre and upward. Markets for your crops are assured. To-day's opportunities are along the **Pacific Coast Extension** of the

## Chicago
# Milwaukee & St. Paul
## Railway

Apples, Peaches, Plums, Apricots, and all small fruits grow well there and bring excellent returns. Whitman, Adams, and Douglas counties alone produce 20,000,000 bushels of wheat annually. Oats, rye, barley, alfalfa, and timothy hay are also produced in abundance.

Splendid opportunities are offered in Washington for the dairyman and the poultry-raiser. There is a large demand for their products.

Are you interested in this new country? If so, send for Washington Folder. It is free on request.

**F. A. MILLER**
General Passenger Agent
CHICAGO

**GEO. B. HAYNES**
Immigration Agent
348 Marquette Bldg., CHICAGO

# GLEANINGS IN BEE CULTURE

## Christmas 1908

The A. I. Root Company
Medina, Ohio

Ten Cents

# A Genuine 1900 Washer on Genuine Free Trial

You can have a *genuine* 1900 Gravity Washer **to use a full month** before you even make up your mind whether to keep it.

You need not send us a penny in advance. You need not make any deposit with anyone. You need not sign any notes, give any security or obligate yourself to pay us a penny unless you decide to keep the washer. And you need not decide whether to keep the washer until **after the FREE Trial.**

Merely say you will give our washer a fair trial and we will send you a genuine 1900 Gravity Washer **all freight prepaid.** Take this washer and use it a month. Do four weeks' washings with it. Then, if you're not satisfied, don't keep the washer.

Tell us you don't want our washer and that will settle the matter. We promise not to argue nor protest. Your judgment is all we ask, and if *after* the FREE Trial, it [illegible] you decide to keep the washer, then—*we will trust you for it.* Send us each week (or each month—suit yourself) *part of what the washer saves for you.*

In just a short while, your washer will pay for *itself* this way. Then—the washer [illegible] and all it saves is yours.

The *genuine* 1900 Washers are the most wonderful washers made. They are strongest and most durable. They are the easiest to handle. They wash your clothes cleaner than you can wash them any other way.

Our 1900 Gravity Washer is the *only* washer with two motions—swinging *back and forth* and moving *up and down* at the same time.

Then—as the 1900 Gravity Washer washes, your clothes are very gently squeezed between the top and bottom of the tub, giving the same good results as rubbing on a board, but without any of the wearing effect.

No other washers have these *double motion* and squeezing features. They are *exclusive* with the 1900 Gravity Washer and cannot be duplicated, nor imitated, because we have *all* the working parts of the 1900 Gravity Washer patented.

This is as much for your protection as ours.

Remember, *also,* that you can try one of these washers *without a penny of cost.* We trust any responsible party.

Send us a post-card, giving your name and address, and we will send you *postpaid* our new Washer Book telling how the 1900 Washers save time, and labor, and clothes, and make washing almost a pleasure. Address—

The 1900 Washer Co., 1275 Henry Street, Binghamton, N. Y.

*If you live in Canada, address Canadian 1900 Washer Co., 355 Yonge St., Toronto, Ont.*

# GREATEST HEALTH MAGAZINE IN THE WORLD

**Teaches the Sick How to GET Well**

**Teaches the Well How to STAY Well**

Here is Just What You have been Looking for.

A wide-awake, up-to-date, all-around health magazine, full of meat as a ripe nut, edited by America's leading authority on right living—a thoroughly dependable **guide to perfect health.**

## GOOD HEALTH

**Edited by J. H. KELLOGG, M. D.**

Dr. J. H. Kellogg, the editor of GOOD HEALTH, is superintendent of the great Battle Creek Sanitarium, where thirty years of research and progress have developed a world-famous system of health training and healing the sick. Thousands swarm to Battle Creek yearly to learn at this great health university how to eat, to exercise, to bathe, and even to sleep for increased bodily efficiency.

GOOD HEALTH is the printed word representing this great system of correct living. It is not a dull, prosy book of exercises and diet rules, but a live, inspiring, illustrated magazine—one of the best-printed and most closely read publications in the world.

**WHAT THEY ARE SAYING ABOUT IT**

**A BOON TO MANKIND**

"Your health journal, Good Health, is a great boon to mankind. Every copy seems better than the former one. May success crown your efforts.
"L. J. BELKNAP, M. D."

**FROM A TEMPERANCE WORKER**

"The magazine grows better and better, and I try to show it wherever I go. The Mothers' Number I used at a mothers' meeting with much favorable comment. MARGARET J. BILZ."

**AN ADVERTISER SAYS**

"We have received your October issue. A magazine like this ought to have a circulation equal to that of The Ladies' Home Journal.
"INDOOR WINDOW TENT CO."

GOOD HEALTH is the **original** health magazine. It is entering upon its forty-fourth year. Subscription price, single, $1.00 per year. Canadian postage, extra, 35 cents. Foreign postage, extra, 50 cents. Send for our great clubbing offers!

Order to-day. Tear out this ad, write your name and address across it, and send it to us with one dollar for a year's subscription.

**GOOD HEALTH PUBLISHING CO., No. 1 W. Bldg., Battle Creek, Mich.**

# C. H. W. WEBER

HEADQUARTERS FOR

# BEE SUPPLIES

DISTRIBUTOR OF

**ROOT'S GOODS EXCLUSIVELY**

**AT ROOT'S FACTORY PRICES**

NO CHARGE FOR DRAYAGE
TO DEPOTS.

# Don't Forget!

If you want EARLY-ORDER DISCOUNTS, send us a list of your needs, and we will be pleased to quote you our lowest prices. WRITE NOW! We are equipped to give all orders, no matter how small, careful and prompt attention.

**We wish a Merry Xmas and a Happy New Year to all our Patrons.**

# C. H. W. WEBER

**Office and Salesroom, 2146-2148 Central Ave.**
**Warehouse, Freeman and Central Avenue.**

**CINCINNATI, .. .. .. OHIO**

*For information regarding honey markets see page 1532.*


# HONEY HONEY

WE ARE ALWAYS IN THE market for good Extracted Honey in cans or barrels. Send us samples of what you have to offer, and give price expected delivered in **TOLEDO.**

The largest packers of good honey the **United States.**

We handle several cars of choice comb honey in season, and shall always be pleased to hear from those harvesting a nice article, especially producers in Ohio, Michigan, Wisconsin, Illinois, Indiana, and New York. No shipment too large for us. Cash in full when goods are weighed in.

If you need honey, write us.

Good second-hand cans for sale, good as new; used only once. Write for prices, stating how many you can use.

**Griggs Bros. & Nichols Co.**
**Toledo, Ohio**

# HONEY

If your crop is short, and you need honey, write to us; we can supply your wants. Also, when you have any surplus, state kind and quantity with lowest price delivered at Cincinnati.

*We wish a Merry Xmas and a Happy New Year to all of our patrons.*

**Cincinnati C. H. W. WEBER Ohio**

# HONEY

Light amber, good flavor, 8½c lb.; bbls., 7½ to 8c lb. Sample, 10c. No. 1 comb honey, $3.60 case. Catalog of apiarian supplies free.

**I. J. STRINGHAM, 105 PARK PL., NEW YORK CITY**

# Honey

Our market is good for fancy and No. 1 comb and extracted honey. Our commission is one cent pef pound. All consignments will have our best attention.

**Blake-Lee Company**
**No. 4 Chatham Row Boston, Mass.**

**CALIFORNIA**

# Honey and Beeswax

If you wish to purchase Southern California honey or beeswax, we are the people you want to consult. Or if you have honey and beeswax to dispose of, right here is where you can sell either to the best advantage. All inquiries receive prompt attention.

**Hamilton & Menderson**
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# Practical Works on Bees

THE books mentioned below, as well as those on the next two pages, are all devoted to practical bee culture, although a few of them, as will be noted by their descriptions, have more or less scientific value. A somewhat careful reading of the descriptions below will undoubtedly show any one just what book will suit him best. If several books are to be selected covering a wide range of subjects, the following list may be helpful in deciding what you want: A B C of Bee Culture, Langstroth on the Honey-Bee, Advanced Bee Culture. Or this list: How to Keep Bees, Forty Years Among the Bees, A Modern Bee-Farm.

### Cook's Manual of the Apiary

is a very complete treatise on bees and bee-keeping, nothing of any consequence being omitted by its author, Prof. A. J. Cook, formerly of the University of Michigan. Even the anatomy and physiology of the bee has been very completely covered in this work, also bee botany, and yet the practical management of the apiary has not been slighted in the least. The edition was completely revised and partly rewritten in 1902, hence it is up with the times in every respect. Price $1.15, postpaid; 15 cts. less by freight or express.

### British Bee-keepers' Guide Book.

By T. W. Cowan. This is the leading English work on practical bee-keeping in England, and as such has had an immense sale, and has been republished in French, German, Danish, Swedish, Russian, Spanish, and Dutch. The work is condensed into 179 pages, handsomely bound and well illustrated. Price $1.00 by mail; by freight or express, 5 cts. less.

### Doolittle's Queen-rearing.

This is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of modern methods of raising queens wholesale. Mr. Doolittle has an entertaining way of writing on bee subjects which enables his readers to follow him with pleasure, even if they never intend to raise queens at all. Bound in leatherette, 124 pages, 75 cts. postpaid; by freight or express, 5 cts. less.

### Wax Craft.

By T. W. Cowan. We are now in position to take orders for the above book. It is elegantly bound and beautifully printed. See review by W. K. Morrison in our Sept. 1st issue. Price $1.00 postpaid anywhere.

### The Irish Bee-Guide,

by Digges, is, as its name implies, a guide to the bee-keeping industry of Ireland. This is a closely printed, well-bound book of 220 pages with excellent illustrations on fine paper. It would be useful to any one who wishes to become acquainted with the status of bee-keeping in the old land. Price $1.00 postpaid; by freight or express, 5 cts. less.

### A Modern Bee-Farm,

by Simmins, is one of those books which will cause you to sit up and take notice if you are a real live bee-keeper with lots of formic acid in your blood. The author is an English bee-keeper of note, who not only knows and understands bee culture in his own home land, but is as well an earnest student of American apicultural methods. He was the first man in the field with a non-swarming system of bee-management, and is otherwise a very original thinker on all that pertains to bees. He is not very orthodox in his views, but his book is all the better for that, seeing that he wants to take us out of the ruts. You can read the book right straight through, in the long winter evenings, as it runs along like a narrative or a novel. Cloth bound, 430 pages, 1904; price $2.00 postpaid; by freight or express, 15 cts. less.

### Amerikanische Bienenzucht,

by Hans Buschauer, is a bee-keeper's hand-book of 138 pages, which is just what our German friends will want. It is fully illustrated, and neatly bound in cloth. Price $1.00; by freight or express, 5 cts. less.

### The Honey-Bee.

By T. W. Cowan. This is the standard work on the anatomy and physiology of the bee in the English language. It is packed with information on the subjects indicated, and expresses in a condensed, accurate manner every thing that has been discovered by the scientists of all countries who have studied the life history of the honey-bee. The book is beautifully bound, and printed and illustrated in the highest style of the art of book-making, and is invaluable to a bee-keeper. Last edition, 1904, 220 pages. Price $1.00 postpaid. By freight or express, 5 cts. less.

### Quinby's New Bee-keeping.

This, a modern edition of Quinby's Mysteries of Bee-keeping, is one of the most useful books on apiculture ever written. Mr. Quinby was an intensely practical bee-keeper and greatly assisted Mr. Langstroth in laying the foundations of American apiculture. His son-in-law, Mr. L. C. Root, revised the old book, giving it a new title and bringing it in line with the times. It is a simple, easily understood guide to bee-keeping. Cloth bound, 271 pages, 1905; price $1.00 postpaid; by freight or express, 10 cts. less.

**The A. I Root Company, Medina, Ohio**

# PRACTICAL BOOKS

## How to Keep Bees.

By Anna Botsford Comstock. The novice in bee-keeping usually seeks for a simple book on bees, and in this he is wise. The modern text-books relating to bees are excellent in their way, but most or them are too technical for a mere beginner, however well they may be written. A simple book written in clear every-day language is much better, even if it does not treat of quite so many little details which interest only the professional bee-keeper. In this respect "How to Keep Bees" fills the bill. The gifted authoress, who is a charming writer as well as an artistic engraver and bee-keeper, made a start with bees three different times, hence she had the opportunity of finding out for herself the difficulties and trials that beset the beginner with bees. She had no desire to make money with bees, but did so, however, because they prospered under her care and skill. For this reason she writes as an amateur to amateurs, making no attempt to discuss the knotty problems which the expert bee-keeper is interested in. The book is written in a charming literary style, easily understood, almost entirely free from the technical language used by bee-keepers. It is arranged in chapters, and so eminently readable withal, that any one interested in the subject can sit down and devour it clear through, the same as he would a modern novel. Everything the average beginner desires to know is discussed, including what to order if you have no bee-supplies or bees. The print is large, and some very beautiful engravings adorn its pages, for the authoress is one of the most skillful wood-engravers in America. We can not do better than recommend this work to every beginner in bee culture.

There are twenty chapters in the book as follows: 1. Why Keep Bees. 2. How to Beginn Bee-keeping. 3. The Location and Arrangement of the Apiary. 4. The Inhabitants of the Hive. 5. The Industries of the Hive. 6. The Swarming of Bees. 7. How to Keep from Keeping too many Bees. 8. The Hive and How to Handle it. 9. Details Concerning Honey. 10. Extracted Honey. 11. Points about Beeswax. 12. Feeding Bees. 13. How to Winter Bees. 14. Rearing and Introducing Queens. 15. Robbing in the Apiary. 16. The Enemies and Diseases of Bees. 17. The Anatomy of the Honey-Bee. 18. The Interrelation of Bees and Plants. 19. Bee-keepers and Bee-keeping. 20. Bee-hunting.

There is also a bibliography and index. From a beginner's standpoint it is a complete treatise on bees.

Cloth bound (228 pages), price $1.10 postpaid.

**Doubleday, Page & Co., New York City.**

## THE SWARTHMORE LIBRARY.

A series of booklets on bee subjects by E. L. Pratt, of Pennsylvania, known to the bee-keeping world as "Swarthmore." These books are full of the most valuable information. The Swarthmore method of queen-rearing is spoken of as the most important innovation in bee-keeping in recent years.

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This is, as its name implies, a book for the professional or more advanced bee-keeper, one who has mastered the elementary details of the business, and who is looking for ideas which he can use in his work. It is particularly good for the bee-keeper who wishes to know how large bee-keepers lay out their work; how they manage out-apiaries; how they extract and how they prepare for the market, and all the various details of the business of keeping bees. It is almost equally good for beginners also. The author of

**Advanced Bee Culture**

is Mr. W. Z. Hutchinson, editor of the *Bee-keepers' Review*, who has had a long and varied experience in practical bee-keeping. He writes in a very clear and accurate style, so that there is never any difficulty in following his meaning. He eschews the scientific part of bee-keeping, being content to study the commercial side only. The book itself is beautifully printed and illustrated, and very prettily bound. It is a book the advanced bee-keeper will often turn to just to see how other skilled men do their work. One good hint will pay for the book many times over, and the author having been through the mill himself always sees the salient features of a system. In his quest for information Mr. Hutchinson visited many able bee-keepers with eyes and ears wide open, that he might be the better able to assist his readers with ideas they could use in their every-day work in the apiary.

He is an excellent photographer, therefore it is not to be wondered at that he supplies a number of very beautiful illustrations which not only adorn but instruct. Perhaps we can do nothing better than give a list of chapters, as follows: Bee-keeping as a Business; Making a Start in Bee-keeping; Mistakes in Bee-keeping; The Influence of Locality; Best Stock and How to Secure It; The Choice of a Hive; Honey-boards and Queen-excluders; Sections and Their Adjustment on the Hive; Arrangement of Hives and Buildings; Comforts and Conveniences in the Apiary; Shade for Bees; Contraction of the Brood-nest; The Use and Abuse of Comb Foundation; Increase, Its Management and Control; The Hiving of Bees; Commercial Queen-rearing; Introducing Queens; The Feeding of Bees; The Production of Comb Honey; Producing Good Extracted Honey; Migratory Bee-keeping; Out-apiaries; House-apiaries; Foul Brood; Apiarian Exhibits at Fairs; The Fertilization of Queens in Confinement; The Rendering of Beeswax; The Relation of Food to the Wintering of Bees; Outdoor Wintering of Bees; The Ventilation of Bees; The Relation of Moisture to the Wintering of Bees; The Influence of Temperature in Wintering Bees; Care of Bees in Winter; Index.

$1.20 postpaid; or the book and the Review for 1908 and 1909 for only $2.00.

**W. Z. Hutchinson**
**Flint, Mich.**

## PRACTICAL BOOKS

# Forty Years Among the Bees

. . *by* . .

Dr. C. C. Miller

This is the plain unvarnished story of Dr. Miller's bee-keeping experiences for a term of forty years and more. He was probably the first man in America to depend solely on bees for a living, and for this reason alone the book is well worth reading. He has taken a prominent part in building up the bee industry of America in all those fateful years from the time bee culture was an infant industry until now. This has given him a fund of rich experience to draw on, and he freely uses it for the benefit of his readers. He has adopted throughout his book a simple conversational style which makes him readily understood, and renders the book easy reading to any bee-keeper. Even the beginner enjoys it. To the comb-honey producer it is of engrossing interest, for Dr. Miller is what we term a comb-honey man. In a delightful way he tells what he has done in the past, what he is doing now, and what he intends to do in the future, giving the reasons for his change of mind. The extracted-honey men also like to read this simple narrative because the principles of comb-honey production are much the same as in producing extracted honey. He does not hide away the smallest detail, and one soon becomes acquainted with his family circle, his home and its surroundings, his helpers, his out-apiaries, and all that goes to make up home life and life's work. This impresses the reader in a way that the ordinary bee-keepers' manuals can not do. However, the work is not intended as an instruction-book in bee-keeping, but it affords an excellent supplement to any of our well-known manuals of bee culture. No comb-honey man should be without it, because its author is one of the most successful comb-honey men this country has produced. He has no "secrets," but tells all he knows in a way that is convincing. What adds to the interest is the fact that he lives in a locality not particularly well adapted to bees, because the winters are long and the honey flora somewhat uncertain. The print is large and clear, so that it may be read by lamp-light when the bees are in the cellar and the snow lies deep. Order a copy—only a dollar, postpaid. Or with American Bee Journal one year—*both* for $1.50. Address all orders to

**American Bee Journal, 118 W. Jackson, Chicago**

**Twentieth-century Edition**

# Langstroth on the Honey-bee

**Revised by C. P. Dadant**

THIS book was originally written by the Rev. L. L. Langstroth, the founder of modern bee culture. Its first publication, in 1853, caused a revolution in bee culture, not only in America but all over the civilized world. It is the modern bee-keeper's epic. Father Langstroth repeatedly revised the book as the various editions appeared; but when he got too old he turned over his duty to a great friend of his, Mr. Dadant.

The French edition of "Langstroth on the Honey-bee" is the standard work on bees in France.

The work itself is quite comprehensive, and it covers the whole field of bee-keeping in its 575 pages. It has a very large number of excellent illustrations, some of them by Count Barbo, on the anatomy of the bee, being very fine examples of the engraver's art. In the first chapters the anatomy and physiology are dealt with; then the food of bees, etc. Comb and propolis are fully treated. Then follow chapters on movable-frame hives, wherein the evolution of our modern hives is traced. The ventilation of hives and cellars is excellently treated, and also observation hives. A chapter is devoted to the taming of the honey-bee. Swarming, both natural and artificial, is carefully considered, and primary and secondary receive a full notice. A long chapter is devoted to queen-rearing and nuclei. Doolittle's system of queen-rearing is fully explained, as also queen-introduction. Out-apiaries, robbing, and wintering are most thoroughly explained. As Mr. Dadant is a great expert on beeswax it is needless to say the chapter on that subject is fine. There are splendid chapters on the honey flora. Loney production, and foul brood. There is also a bee-keeper's calendar and a selection of axioms for bee-keepers generally. It is a great book, and the price is low for a handsome well-bound volume as this is. . . PRICE, postpaid, **$1.50**

**Dadant & Son, Hamilton, Ill.**

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## The Life of the Bee.

By Maeterlinck. This is a masterpiece of fine writing by a modern Shakespeare. The words fly from the pen of this writer like sparks from a blacksmith's anvil, the result being a glorification of the honey-bee. Maeterlinck is considered by many to be the finest writer now living, and any thing from him is sure to be worth reading. He is, to a certain extent, familiar with bee-keeping, but the truth about bees does not interest him so much as the romance of the queen and the drone and the swarming instinct. The book itself is well bound and beautifully printed. Cloth bound, 42 pages. Ed. 1903, price $1.40 postpaid; by freight or express, 10 cts. less.

## The Bee People.

A book on bees, especially for children, from the pen of Margaret W. Morley. Including its elegant illustrations, it is, in some respects, the prettiest bee-book in existence. It has 177 pages, very coarse print, the reading being ingeniously interwoven with the illustrations showing the parts of the bee. The story of bee-life is told in a fascinating manner, and is well calculated to get the casual reader, as well as children, interested in this useful insect. The cuts go just enough into detail to explain fully the lesson taught, without confusing the mind with other things. We think the book well worthy a place in every bee-keeper's home. Fittingly designed cover. Price $1.50 postpaid; by freight or express, deduct 10 cents.

## The Swarm.

By Maurice Maeterlinck, author of the Life of the Bee. This is a book of 113 pages, prettily bound in cloth. Price $1.20 postpaid; by freight or express, 10 cents less.

## The Bee-Master of Warrilow.

Tickner Edwardes. Cloth bound, 64 pages; 57 cents postpaid; by freight or express, 7 cents less.

## The Lore of the Honey-Bee.

By Tickner Edwardes, author of "The Bee-Master of Warrilow," "An Idler in the Wilds," etc. Setting aside the many popular technical treatises on bee-keeping, there is at present no work by a modern English writer dealing with this facinating subject, from the literary and antiquarian, as well as the scientific point of view. Succinctly, The Lore of the Honey-Bee is a history of bees and their masters from the very earliest times down to the present. The wonderful communal life within the hive is touched on in all its varying aspects; and the reader is introduced to a class of men from all ages as quaintly original as their calling is inimitably picturesque. The book covers the whole field of ascertained facts in the natural history of the honey-bee, as well as the romance of beemanship past and present; and nothing better could be put in the hands of the beginner in apriculture, no less than in those of the advanced student of what is probably the oldest human occupation under the sun. Price $2.00 postpaid.

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The following books are neatly bound in attractive papers, well illustrated. Just the thing for the beginners to help them with their troubles. Price ten cents each postpaid.

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No. 21. FACTS ABOUT BEES.
No. 23. BEE-KEEPING IN JAMAICA.
No. 24. BEE-KEEPING IN THE WEST INDIES.
No. 25. HOW TO PRODUCE EXTRACTED HONEY.
No. 26. THE DZIERZON THEORY.
No. 27. DOVETAILED HIVE AND ITS USES.
No. 28. DIVISIBLE-BROOD-CHAMBER HIVE.
No. 29. MOVING AND SHIPPING BEES.

## A Bee-Model.

Nearly every bee-keeper is desirous of knowing the main facts of bee anatomy and physiology, but usually is deterred from investigating the subject by the formidable character of the work involved, and mentally decides to defer it to some more convenient season. There is no good reason for doing this if they possess one of our new bee-models wherewith any amateur bee-keeper can obtain a comprehensive idea of the whole anatomy of the bee at a glance.

This is done by means of a skeleton bee of a large size made out of cardboard. Each individual part is numbered, and by consulting the key the name of it may instantly be found. The size of the artificial queen is 5x7 inches, and the drone 5½x4¼, so that each part is sufficiently large to enable the student to get a good clear view of it. This is the important feature, and it is one that is not usually understood by those who may never have seen one of these bee-models.

The bee-model is gotten up on the style of a little girl's paper doll It looks outwardly like a large brown bee pasted to a piece of cardboard. On lifting the outer flap the whole anatomy of the bee is unfolded. The various parts may be all seen by lifting all the flaps in their order. The following parts of a queen are shown: Antennæ, scape, compound eyes, ocelli, claws, tarsus, planta, tibia, femur, velum, scraper, thorax, abdomen, anterior wing, posterior wing, air-tubes, air-sacs, trachæ, base of compound eyes, gullet, honey-sac, chyle-stomach, ileum, large intestine, vent, stomach-mouth, malpighian tubes, rectal glands, poison-sac, ovaries, oviduct, mucus duct, semen-duct, spermatheca, gland, vagina, upper-gullet nerves, under-gullet nerves, optic nerves, ganglia of fore legs, general system of nerves, For the drone the list is the same except for the reproductive system, as follows: Testes, seminal duct, seminal vessels, mucus glands, ductus seminalis ejacularis, penis-sac, horns of the male organ, fan-shaped appendage, male organ.

By means of this model and a careful study for a few weeks the average bee-keeper could learn to name each part of the bee's anatomy correctly without the least hesitation.

With this aid to knowledge in his possession there is really no excuse for any bee-keeper remaining ignorant on these points, Besides being ingenious these bee-models are artistic and scientific, and well worth the price asked for a pair (queen and drone), namely, $1.00 postpaid. Single copy of either queen or drone, 50 cents. A key accompanies each.

**The A. I. Root Company, Medina, Ohio**

# GLEANINGS IN BEE CULTURE

Established 1873. Circulation 32,000. 72 pages. Semi-monthly.

Devoted to Bees, Honey, and Home Interests.

Published by The A. I. Root Co., Medina, Ohio.
J. T Calvert, Business Manager.

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Farm and Home, one year . . .50
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AS A SPECIAL INDUCEMENT for prompt replies to all who accept the above offer we will also send the picture above described, without further charge.

Address All Orders to **GLEANINGS IN BEE CULTURE, MEDINA, OHIO**

# YOU MAY LAUGH

When you read the article by Geo. W. Williams in the December *Review*; and yet I laughed when I first read about the bee-escape. I believe my brother Elmer even rolled in the grass, he was so amused. I believe that the ideas set forth by Mr. Williams appear about as ridiculous as any that have ever been published in the *Review*; but if they prove to be true, as indicated by his experience of the past season, the article will prove the most valuable of any the *Review* has ever published.

Send ten cents for this issue, and with it will be sent two other late but different issues, also a four-page paper containing some clubbing and premium offers that will surprise you. The ten cents may apply on the first subscription that you send in. **W. Z. HUTCHINSON, Flint, Mich.**

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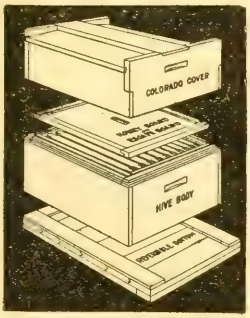
All arguments lead to a matter of Protection, look where you may. Numerous editorials in GLEANINGS have called attention to the importance of protection.

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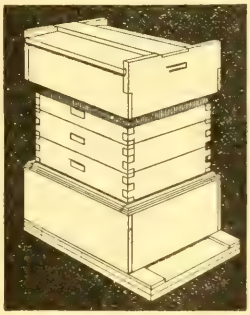

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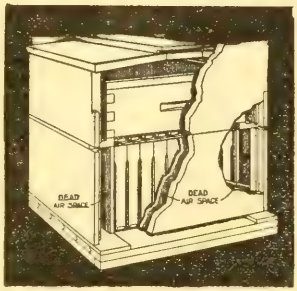


**Equipment** in this hive is the same as found in the regular Dovetail hive, Hoffman frames, etc., and **this hive takes regular Dovetail supers and extracting-bodies.** The bottom is loose and reversible.

Our double-walled hive is the best and lowest-priced one on the market. It will pay to investigate. Send for circular.

**A. G. Woodman Co., Grand Rapids, Mich.**

**Don't Pay Highest Prices for Glass** But if you live outside of the State of Michigan, which I reserve for myself, send 10 cts. for a sample of the neatest, tightest-sealing, and best-selling package ever gotten up as a container of extracted honey. Price $9.50 per 1000.
Address **L. D. HUFFMAN, Albion, Michigan.**

**SOUTHERN CUSTOMERS!**
We have a full line of
**LEWIS BEEWARE**
**and DADANT'S COMB FOUNDATION**
AT FACTORY PRICES.
Your orders will have prompt attention.
**OTTO SCHWILL & CO.,** *Seedsmen*, **Memphis, Tenn.**
Our 1909 catalog of GOOD SEEDS mailed free.

# GLEANINGS IN BEE CULTURE

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### THE 1900 WASHER.

Nothing could better illustrate the very great change which has occurred in the methods of doing business than the advertisement of the "1900 washer," placed on another page of this journal. A few years ago no business man would have dared to make such an offer as this company now makes to the readers of GLEANINGS. They actually let a responsible prospective buyer have the use of the machine four weeks without the payment of a single cent in cash or its equivalent. This would not seem very extraordinary if the would-be buyer were well known to them; but to extend such an offer to entire strangers is certainly wonderful. Their faith is founded on a well-known fact that people everywhere will strive to pay for an article that has merit and is worth the price asked. The fact, also, that the seller has faith in the buyer's fairness also goes a long way with most of us. The whole transaction is founded in a remarkable faith in the common people of this country, and ought to receive the encouragement it truly deserves. If you are in want of a washing-machine, or likely to require one soon, we hope you will take advantage of this offer.

### "IRON AGE" TOOLS.

The fame of the "Iron Age" garden tools is world-wide; but not every one knows they are all made by the Bateman Mfg. Co., Grenloch, N. J. For all kinds of light cultivation or garden work these tools are surpassed by none. Wherever civilization extends, these "Iron Age" tools are seen, and even in countries far remote, where civilization is supposed not to be, these tools are in actual every-day use. This shows how a good article with substantial merit will make its way over all obstacles, and triumph over all prejudices and national or racial exclusiveness. It is a great pleasure for an American to travel in remote regions of our globe and come on a man using tools with the talismanic words IRON AGE, made by the Bateman Mfg. Co., Grenloch, N. J. For us, therefore, to praise the wares of this concern would be a work of supererogation. The best thing to do under the circumstances is to write to the company for their catalog to see if they do not make something that is just what you require to lighten the labor of cultivating your garden patch.


BANKING BY MAIL

4%

Money deposited with us is secure, and works for you continually. Our perfect system of Banking **BY MAIL** brings this opportunity to your door.

The Savings Deposit Bank has a capital and surplus of $70,000, and assets of over $700,000. Its policy is conservative; its affairs are ably managed by capable and successful business men.

Deposits of $1.00 and upward accepted, on which we pay a yearly interest of **4** per cent, compounded semi-annually. Send currency in registered letter, your own check; or by P. O. or express money-order.

**Write for the Booklet To-day.**

Resources $800,000. — Established 1892.

THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

# LOCATION, STOCK, PRICE

We are more centrally located, have the advantage of being able to ship direct over THIRTY different RAILROADS and STEAMBOATS, and as we always carry several carloads of

## ROOT'S SUPERIOR

# BEE-SUPPLIES

in stock, we are, therefore, in position to furnish the best bee-goods at the very lowest prices. *This month* we can quote a SPECIAL CASH PRICE, if you will send us a list of your requirements, either for immediate or future delivery.

**BEESWAX**

We will buy all you can ship us, at market prices for cash or in trade. Write us to-day.

If interested in poultry, write for catalog No. 8.

**BLANKE & HAUK SUPPLY CO.**

**1009-11-13 Lucas Ave. ST. LOUIS, MO.**

# Get Busy

That is to say, if you will anticipate your

**Bee-supply Wants**

of next spring now, it will be money in your pocket.

4 per cent discount to January 1.

**The A. I. Root Company**

**Pilcher & Palmer**

Northwestern Branch, 1024 Mississippi St.

**St. Paul, Minnesota**

# Bee-keepers Everywhere

but especially in

## OHIO and W. VIRGINIA

can get BEST (ROOT'S) BEE-SUPPLIES MOST PROMPTLY from

## ZANESVILLE

Write for free catalog and special discounts.

CLOVER HONEY bought and sold.

**EDMUND W. PEIRCE, Zanesville, O.**

# We Have Time to Handle

## ONLY THE BEST

THAT is why we handle, recommend, and sell so many **MUTH SPECIAL DOVETAILED HIVES.** From the selection of the seasoned, straight-grained, high-grade lumber (which costs US more than we could buy "good-enough" stock for, if we cared to use it) to the finished, non-warping, thoroughly satisfactory hives, OURS are THE BEST. Do you think we could sell TEN CARLOADS of *inferior* hives in a year? Not much! But we can—and DID—sell ten carloads of MUTH SPECIAL hives in one year, because they MADE GOOD.

This is the standard we maintain in ALL our bee-supplies. Whatever you get here, whether it is a bee-veil or a hundred hives, you can rest well o' nights, knowing that the goods are **UP TO THE MUTH STANDARD,** than which there is no higher.

Goods have to be extra special to be handled by us, or to get into our catalog. WE ARE BUILDING OUR SUCCESS ON THE SATISFACTION OF OUR CUSTOMERS. Going to send for our catalog to-day, aren't you?

**THE FRED W. MUTH CO., The Busy Bee-men, 51 Walnut Street, Cincinnati, Ohio**

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OLD HAMPSHIRE BOND PAPER.

It is always very good policy to use good paper, either in social or business correspondence, for many good reasons. We know fine paper is apt to create a favorable impression, even before we have read the letter on which it is written. In doing business with entire strangers by mail we are generally quite anxious to make a good impression; and one way of doing it is to order the printer to use Old Hampshire Bond in making up your stationery. He will perceive at once that you want a good job and will make his printing fit the paper. It is a mistake to suppose any sort of paper and any kind of printing will answer the demands of modern commerce. A good business man is expected nowadays to use good stationery, etc.; and unless he does so his trade will suffer, more particularly with strangers. If you are in doubt, just specify "Hampshire Bond," and you are safe. Every printer knows the name, and has some of this paper in stock for his best customers. Don't let him palm off a substitute on you. He can easily get more Hampshire Bond when he wants it. Send for samples of their paper as advertised on our last cover page. Their samples show various color combinations which can be used to advantage many times.

SOMETHING ABOUT GASOLINE-ENGINES.

I have mentioned before that I have been looking at the matter of a cheap little engine to run my bone-cutter, to pump water for my garden, and do similar work around my home in Florida. Huber and Ernest, several years ago, made a thorough investigation to find a small engine suitable to run our honey-extractors, and they finally decided on the Gilson engine as advertised elsewhere. They believed that it was the best engine for the money, on the market, and the experience of over two years has shown that they were not mistaken.

There is a big demand for small two-cycle engines to propel boats. I think they are now advertised for thirty or forty dollars, for any boat to save the laborious work of rowing, but the boys tell me that all of these small cheap engines are extravagant in the use of gasoline. For instance, one of these boat-motors will take as much gasoline in running *an hour* as the larger and more finished engine, such as is advertised in this issue by the Gilson Mfg. Co., would require to run it a *whole day*. In view of this, I decided to use the one we employ to run our extractors, even if it is a little larger than I need at present—one that "goes like sixty, sells like sixty, sells for sixty." You see it is always an excellent idea (while you are making a purchase), to have a little *more* power than you actually need at the time. We have had such good reports from these engines that we feel perfectly safe in recommending them. The same concern builds other styles of engines up to 16-horse-power. All who are interested will do well to write the Gilson Mfg. Co., 624 Park St., Port Washington, Wisconsin.—A. I. R.

"GOOD HEALTH" MAGAZINE.

Those of our readers who earnestly desire to keep well informed on all the latest ideas with regard to personal hygiene and sanitation can hardly do better than purchase a year's subscription to *Good Health*, published at Battle Creek, Mich., which town is now very properly regarded as headquarters for all information pertaining to good health.

The knowledge which *Good Health* sets forth is written in a style suitable for popular reading. It is not a doctor's journal, though many doctors read it, but is rather meant for the great army of common people who try to keep themselves out of the doctor's hand. Read what Mr. A. I. Root says about *Good Health* in our November 15th issue.

BEE-KEEPERS' SUPPLIES.

We call the attention of our readers to the advertisements of the bee-supply dealers appearing in this issue. No matter in what part of the country you live, you will find an advertisement from a dealer near you. This is the best season of the year to buy bee-keepers' supplies, for you will have plenty of time to get them ready for use in the spring and will be able to save money too, for most dealers offer discounts for early orders. Consult these pages often during the next few weeks when making up your bee-supply orders.

# A Distinction and a Difference

## Your Opinion

There are arguments for and against class publications, but there are class publications and CLASS PUBLICATIONS. **Gleanings in Bee Culture** is in a class by itself—there is no other field like ours.

YOU can not class it in general terms or measure its tremendous power as an advertising medium by a surface view of conditions.

## Our Knowledge

WE know that there is hardly a single article advertised in the general magazines that can not be profitably advertised in our columns. The bee-keeper of to-day will buy almost any thing that is properly advertised. A recent canvass of our subscribers shows that they are interested in the purchase of a wide class of merchandise, including farm implements, poultry and nursery supplies, home improvements, including bath-room fixtures and water systems; breakfast foods and food products, automobiles, pianos, etc.

## An Agency's Confidence

**Gleanings in Bee Culture** has a peculiar influence over its readers, for many have been subscribers since its first issue thirty-six years ago, and to them it is first of all a home magazine and a family friend. This spirit of good will was recognized by the president of a prominent advertising agency when he said: "The secret of such remarkable returns secured by so many advertisers in GLEANINGS is due, in my judgment, to that peculiar hold which Mr. A. I. Root has on his readers—that *esprit de corps* which exists between him and your subscribers."

## An Advertiser's Report

Every one of its 100,000 readers (we figure only three readers for every paper) scan each number from cover to cover. The advertising pages are read with as much interest as any other part of the paper. Our readers are a busy people; few of them buy all the leading magazines, but they always find time to read GLEANINGS IN BEE CULTURE; in fact, in many instances it is almost the only magazine of any note going into the home. Our readers have implicit faith in advertisements accepted by us, and patronize advertisers liberally. For instance, read the following extract from a letter from the National Fur and Tanning Co.: "You will be glad to know that, from the twenty papers in which our advertising appeared last year (winter of 1907-'08), there were only two which made a better showing. In one paper—a farm paper which has a national reputation—the inquiries cost us three times as much as they did in GLEANINGS."

What better proof can advertisers want that our columns will bring results than the actual facts stated above? We solicit no advertising which we know will not pay the advertiser well. Write us for particulars on any point.

**Gleanings in Bee Culture** "The Little Magazine With a Big Field" **Medina, Ohio**

**"If goods are wanted quick, send to Pouder."**
**Established 1889**

# EXACTLY SO.

*By the Bee Crank*

System in a bee colony is one of the cardinal virtues. No merchant prince ever perfected an organization that compares with the methodical way in which the business of the bee is conducted. Bee-men well know, for example, that the hexagonal cells of the honey-comb are laid out with marvelous accuracy. So wonderful is their precision that Reaumur, a French scientist, at one time suggested that the side of these cells be adopted as the unit of measurement for the metric system, because it is more nearly unvarying than any other standard that nature affords.

**The Pouder System.** My system for handling orders is modeled along the lines laid down by the bees. I do not claim that it is an improvement upon that, but it is as near perfect as human ingenuity can make it. Years of close attention to the details of the bee-supply business has qualified me to offer the bee-men a class of service that for promptness, accuracy, and minute attention to details is almost perfect. Bee-men who have experienced exasperating carelessness of some dealers will appreciate Pouder Service; and to have Pouder Service is worth a great deal to you, but costs you not one cent, for I sell Root's goods at Root's prices, and all other standard supplies at the very lowest figures. All cash orders received during December will be allowed a special discount of four per cent for the purpose of putting a little ginger into this quiet month. In January the discount will be three per cent.

When you want what you want, when you want it just as you want it, send to me. You should have a copy of my catalog on your file. A postal will bring it to you. Orders from the Root catalog receive the same attention as though made up from my own..

BEESWAX. I can dispose of all the beeswax that you can spare, and am now paying 28 cents cash or 30 cents in trade, delivered at Indianapolis. Now is an excellent time to box up your wax and exchange it for supplies so that, when supplies are wanted, they will be ready.

Let me hear from you. Every communication sent here is entitled to an immediate and courteous reply.

## Walter S. Pouder,

**513-515 Massachusetts Avenue, Indianapolis, Ind.**

# GLEANINGS IN BEE CULTURE

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## STRAY STRAWS

DR. C. C. MILLER

MARGARET GRAY is advised, page 1444, to remove honey from the hive to prevent granulation. Does honey granulate sooner in the hive than out? [No. Quite the other way, or at least that has been the general impression.—ED.]

LET ME ADD a little to that reply to Charles Reynders, p. 1443. If you receive a queen that you don't want to use immediately you can put her caged in any strong colony, putting the cage between the brood-frames, but not allowing the bees of the hive to get at the candy. I think she might stay a month all right.

HONEY "is not spoiled in cooking as many good foods are," p. 1430. Quite right as intended, but it does not mean that you can boil honey without spoiling it. A very little cooking beyond 160° hurts the flavor. [Boiling honey certainly does spoil it for table use; or, rather, we should say, it greatly mars its flavor.—ED.]

ABOUT THAT twenty colonies from nine, page 1443. It is quite possible, as stated, "that two of that nine were strong enough to make two other colonies each." It's perhaps a little more likely that from each of the nine colonies a single frame was taken, these nine frames being used to make the two colonies. [We accept your amendment. —ED.]

DRONE COMBS in supers. "Unless perforated zinc is used the queen would be quite sure to occupy this drone comb," page 1425. Let me add that, if perforated zinc is used, the bees will hold open more or less of the drone comb for the use of the queen. I judge this from the fact of seeing sections not entirely filled with worker foundation, and the vacancy filled out with drone comb, the drone comb entirely empty when the rest of the section was filled with honey. [Since Dr. Miller speaks of it, we remember there have been reports of how drone-cells would be left open and empty, while the worker would be filled with honey. Who else has any thing to offer on this subject?—ED.]

E. D. TOWNSEND has hit it exactly in that bottom paragraph, p. 1432. An eight-frame hive is too small for extracted honey, and possibly for comb. At any rate, no one should fool with an eight-frame hive unless he intends to give his bees the very closest attention. But I am not so sure about some things in the preceding paragraph. He says, "Bees on ten frames of brood will store the same amount of honey whether the brood is all in one hive, or divided into two parts and in two hives." I haven't the figures at hand; but from some of the authorities across the water has come the statement, never before contradicted, to the effect that, if one colony is twice as strong as another, it will store *more* than twice as much honey.

THAT COMB HONEY 12 years old, p. 1437, reminds me. Years ago, on a visit to my mother I spoke of sending her some honey. She said, "Why, Charles, you don't need to send me any. I have plenty left from last year." "Oh! but last year's honey is no longer so good," I said. "Oh! but it is," she replied. "Please show it to me." To my surprise she showed me sections of honey that were faultless. "Where do you keep it?" I asked. "Up in the garret." If you know what a garret or attic is, you know it is a very cold place in winter, but roasting hot in summer. The roasting the honey got in the latter part of summer seemed to have thickened it so that the winter's freezing did not affect it. Afterward I saw at a Rockford convention section honey in perfect condition that had been kept over in the same way.

AFTER READING about clover, p. 1426, I went out to reconnoiter. We had one of the worst drouths last summer I ever knew—perhaps the worst. No rain fell from August 11 till Sept. 27 —47 days. In the cow pasture, which has not been fed down for some time, I found abundance of young clover, and I see no reason why it may not be as good next year as this. In the horse pasture, which has been continuously and severely grazed, I saw no clover. However, putting on my specs and getting down on my hands and knees I could see here and there wee clover leaves started. I doubt if there'll be a very big show there next year, when this year it was a mass of white. [We should be glad to get reports from others who may know the exact conditions, as it must necessarily have a strong bearing on the price of clover honey at least.—ED.]

IS IT TRUE that "what kills the clover is not the *drouth*, but too much water in the ground and hard freezing"? If farmers agree on that I'll take their word for it; but naturally I should think just about the opposite. I think it is generally believed that it isn't so much freezing that hurts as thawing, especially frequent and rapid freezing and thawing. Wet ground is slower at thawing out than day, and the dryer the ground the more rapid the freezing and thawing, I should think, hence the more harm. [You may be right; but is it not possible that a wet soil heaves more —that is, expands more during the process of freezing—than a dry one? Now, the roots of clover extend for several inches into the ground,

and the expanding of a wet soil, through the process of freezing, would necessarily have a tendency to break some of the roots. A dry soil, with very little or no water in it, could expand no more than so much dry sawdust in a box; but wet that sawdust, and the process of freezing will burst the sides of the box and cause a slight elevation in the middle, just as we find is the case with a pail of water that has frozen over night.—ED.]

"IT PAYS to melt old combs," p. 1425. Figures are given to prove it. May be they prove it, and may be they don't; depends upon whether a frame of foundation is worth as much as one of old comb. Sometimes it is, oftener it isn't. Even with the best of old comb, melting may pay big in a foul-broody locality. [On your first point there are a good many who will differ with you. Old combs have a tendency, so some extracted-honey producers say, to discolor the honey. While the amount of discoloration is very slight, it is appreciable. Then, too, is it not true that a nicely wired frame of foundation is preferable to an old propolized frame containing old comb more or less mutilated and unwired?

Then there are quite a school of bee-keepers who believe that worker-cells in old combs are contracted, to the detriment of brood-rearing. While we ourselves do not take much stock in this, yet it has weight with some.

We have placed frames of foundation in extracting-supers in the height of the honey-flow, and had them filled out in from 24 to 48 hours. These new bright combs, perfectly clean, with the assurance that they are absolutely free from disease—well, we will take them in preference every time, even if they do cost a little time and energy on the part of the bees to draw them out. —ED.]

WHEW! Mr. Editor, you seem to be a radical of the radicals on the subject of deep bottom-boards, p. 1424. I supposed I was the original simon-pure blown-in-the-glass advocate of deep spaces under bottom-bars with my 2-inch space. If you're going to advocate 1 to 3 inches with nothing to prevent building down, I'll fight you for infringement. I suspect there's a mistake in that statement that "between the bottom-bars and floor of the bottom-board the space can be anywhere from 1 to 3 inches, and the bees will not build comb except during an exceptionally heavy honey-flow." The flow from dandelion is not an "exceptionally heavy honey-flow;" yet when I have failed to put in bottom-racks I've had lots and lots of comb built down in the two-inch space during dandelion flow. If I should leave more than about an inch of space below bottom-bars any time when bees were storing in supers, I should expect building down *every time.* To be sure, a little comb built down can be cut away, and no harm done; but the amount is not so very small, and the comb is likely to be built crosswise, so it must be cut away every time combs are lifted out, and the amount of brood lost is a serious matter. I am speaking from experience.

Any thing more than about an inch will make the final space really smaller. That seems a little contradictory, doesn't it? Let me put it in concrete form. Suppose hive A has a one-inch space, and hive B a two-inch space. Hive A will preserve its one-inch space. Hive B will commence building down; but it will not stop building when it gets within an inch of the floor, but will keep on until there's only ⅜ inch between combs and floor. So you see that B, with its original two-inch space, has only half as deep a space finally as A.

*Moral.*—Have a two-inch space under bottom-bars (deeper if you like), and then for the time when there's danger of building down, put an open-work bottom-rack, allowing only one inch under bottom-bars. [This question must be largely one of locality. We certainly have had reports where there was a space as deep as three inches under the frames, and no comb was built in it except during exceptionally heavy honey-flows. We may suggest that, where the flow is heavy, like that from basswood, the bees will fill up a three-inch space; but where it comes in very slowly, with cool nights, the space would not be occupied. We do not just now remember the exact circumstances, but we are of the opinion that there were conditions when the three-inch space was tolerated. There is a comfortable feeling in view of what you say that we have never had the space more than one inch under our factory hives, believing it would be wise to err on the safe side. We should be glad to get reports, especially from those who found they could use a three-inch space to advantage. In the mean time we suspect it would be safe for the average person to go no further than Dr. Miller, and use a rack or dummy by which the space under the frames can be contracted during the honey-flow to one inch or less.—ED.]

# EDITORIAL

By E. R. ROOT.

HEAVY snows have been falling in our locality. This is good for the clovers, without question.

WE desire to get more reports as to whether drouth in the fall kills clover. Then we shall also be pleased to get an article from some one who knows, explaining just what is meant by the winter-killing of clover.

WE have some doubts as to the special advantage of storm-doors or other devices to shut off the light and prevent strong drafts of air from shooting into the entrances of outdoor-wintered colonies. These things have a tendency to confuse, and sometimes clog up with dead bees.

### MATTER FOR BEGINNERS.

FOR the coming year we are planning to furnish some special matter for beginners. While, of course, we shall have a great deal of technical reading for the professional and old-time bee-keepers, we shall pay special attention to the wants of the beginner. We have been surprised again and again to notice with what interest even the veterans will read matter designed for the novice, for no one is too old a bee-keeper to learn something new.

### ELECTION OF OFFICERS OF THE NATIONAL BEE-KEEPERS' ASSOCIATION.

The following, from the Secretery, W. Z. Hutchinson, will explain itself:

The following were elected at the late election for officers of the National Bee-keepers' Association: President, Geo. E. Hilton; Vice-president, Geo. W. York; Secrefary, E. M. Hunt; General Manager, N. E. France; Directors, R. L. Taylor, E. D. Townsend, Udo Toepperwein. W. Z. HUTCHINSON.
Flint, Mich., Dec. 6.

### LOW SUBSCRIPTION OFFER.

THIS is the season when many subscriptions will expire. Our readers should remember that we are not permitted to send our journal except for a short time after the expiration of the subscription. In order not to lose a single copy, renewals should come in at once. We are making a special low offer of GLEANINGS one year and Doolittle's fifty-cent book on the production of comb honey, and "How to Control Swarming," both for $1.00; or we will substitute for Doolittle's book Alexander's articles in book form. The regular price of this series of articles by Alexander in one volume will be 50 cents; but we will club it with GLEANINGS for one year for $1.00.

### GLEANINGS FOR NEXT YEAR.

WE are not making any great promises; but the constant growth of our journal, the increase in the quantity and quality of our illustrations, and the excellence of our contributed articles, should be some index as to what the journal will be for 1909. The editor is planning to make some special trips with his camera, to get new material from men who are successful, but who either have not the inclination to write or feel unable to express their thoughts on paper.

Letters from our subscribers have indicated of late a preference for more short articles in which the actual experiences of bee-keepers are given. Scientific articles are important, and they have their place; but we believe that the majority of our readers will be glad to see fewer long articles and more short ones. We ask our older contributors, therefore, to be as brief as possible.

### WINTERING IN A WARM BUILDING.

HAVING occasion to use combs of bees frequently during the winter in giving live-bee demonstrations, the idea occurred to us of keeping one colony right in the office in order to have a hive from which several combs of bees could be taken at any time during cold weaeher, without inconvenience. Remembêrtng the experience of Mr. Geo. W. Phillips in wintering colonies in a warm room at college, as given in our Oct. 1st issue, 1907, page 1267, we located a glass hive on a window-sill, cutting a hole through the sash for an entrance, about three-fourths of an inch high and two inches wide. Panels are ordinarily kept over the glass so that the hive is dark with the exception of the light that comes in at the entrance. The temperature of the room is not often over 70°.

Bees were taken from the hive, for the first time, about two weeks after it had been located at the window. Although there was no brood in the combs at first, it was found that in the two weeks' time the queen had begun to lay in one comb, and a considerable amount of brood was well under way.

The bees, contrary to what might be expected, are not restless, but quiet, and apparently perfectly contented. They are not tightly clustered, as would be the case in a hive outdoors during cold weather, but scattered quietly all over the combs, even on the outside of one of the outside combs. The space between the top-bars and the cover is always well filled with bees, and the space outside the end-bars (Hoffman frames) at the back of the hive is also quite often made the clustering-place of many bees. The weather has not yet been extreme; but when it was the coldest the bees withdrew more closely to the spaces between the combs. At times the majority of the bees are in the front part of the hive over the entrance, but usually they are pretty well distributed over the whole hive. The condition seems to be ideal; for, so far, not over a dozen bees have died.

Mr. Phillips found, in his experiments, that the consumption of stores was not large; and although it is too early to tell definitely, it would seem that no more stores should be consumed than by a colony in a cellar, and perhaps not as much. While the bees are not perfectly quiet, they are never restless, since the air from the outdoor entrance is always pure. If brood-rearing continues, even on a small scale, rather more stores will be used; but the greater part of the bees will be young and vigorous in the spring.

The bees show no more tendency to fly out in cold weather than do those in regular hives out of doors. They do not even venture down to the bottom-board in cold weather.

Of course, no extensive bee-keeper conld find enough windows for all his colonies; but the house apiary makes it possible to have conditions very much like those that have been mentioned. Who can give us some actual experience with house-apiaries in regard to the wintering of bees? Are the results any more uniform than those of colonies in individual hives out of doors? What about the consumption of stores in house-apiaries? It is true that the house-apiary is much more common in Germany than in America, and we should like to get at the facts of the question.

### SEALED COVERS VS. ABSORBENTS.

SOME years ago there was much discussion as to whether it is better to put the cushions directly upon and over the clusters of bees, or to place thin boards on top (which the bees seal down) and the cushions over these. There are times when the former seems to give the better results; and there are times when the latter seems to give the better showing. But one year with another, in the average locality the sealed cover furnishes the conditions most favorable for winter. When the absorbing cushions are placed directly on the cluster they are apt to become wet by the absorption of moisture, and freeze, when they are but little better than a cake of ice on top of the bees. With sealed covers, if the entrance be of fair size, 8×⅜, the moisture will condense, run down the bottom-board and out of the hive, while the cluster is left clean and sweet and dry; and, more than all else, the cushions on top are dry, and of course are in the best condition to ward off the cold.

For the benefit of those who desire to watch a colony under a sealed cover, a sheet of glass may be substituted in place of a thin board. Over the glass should be placed a good-sized cushion, or a tray of chaff, sawdust, or planer shavings.

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### THE IMPORTATION OF BEES AND QUEENS INTO HAWAII.

In the Oct. 1st issue, page 1176, we mentioned the fact that some restrictions had been placed on the importation of bees and queens into Hawaii. We wrote Mr. Van Dine, and have received General Circular No. 3, October, 1908. In it we find the following regarding the importation of queens and bees into the island:

RULE 4.—IMPORTATION OF QUEEN-BEES.

In order to prevent the introduction into this Territory of infectious, contagious, or communicable diseases among honey-bees it is hereby ordered that

All queen-bees imported into the Territory of Hawaii shall be subject to the following terms and conditions hereinafter set forth, namely:

(1).—*Labels.*—A label shall be affixed to the cage, box, or other container in which any queen-bee is enclosed, which label shall set forth:

(a) The number of queen-bees enclosed;
(b) The locality where each was produced;
(c) The locality from which each was shipped;
(d) The name of the shipper;
(e) The name of the consignee.

(2). *Request for Inspection.*—The importer shall file with the Board of Agriculture and Forestry, at least two weeks prior to the date at which the queen-bee or bees will arrive, a written statement signed by himself or his agent or attorney which shall set forth his purpose to import said queen-bee or bees into the Territory of Hawaii, which statement shall contain as accurately and fully as possible the following information:

(a) The number of queen-bees sought to be imported;
(b) The probable locality where each was produced;
(c) The locality from which each is expected to be shipped;
(d) The name of the proposed shipper;
(e) The address of the importer, and shipping-marks.

Said statement shall also contain a request that the Board, upon arrival of said queen-bee or bees, proceed forthwith to inspect or cause to be inspected such queen-bee or bees.

(3). *Inspection.*—Immediately upon the receipt of such request for inspection, or as soon thereafter as may be, an inspector of the Board shall inspect each queen-bee; and, if it is found free from such disease, shall cause it to be transferred from any cage, box, or other container in which it shall have been imported, and shall transfer it to a new and clean cage properly supplied with clean and fresh candy, and with sufficient bees known to be free from disease to care for said queen-bee properly.

(4). *Certificate.*—The inspector shall thereupon give to the importer a certificate of his findings upon such inspection, and deliver to him such of the bees as he finds free from all infectious, contagious, and communicable diseases.

(5). *Destruction of Cages, Bees, etc.*—Immediately upon the transfer of any queen-bee from any cage, box, or other container as set forth in Section 3 hereof, said inspector shall cause to be burned and destroyed such cage, box, or other container, together with the candy and bees therein, excepting such queen-bee.

If said inspector shall at said inspection find any queen-bee to be infected with any contagious, infectious, or communicable disease he shall in his discretion destroy the same or hold the same for further treatment.

In relation to No. 3 in brackets, on the subject of inspection, it is not quite clear to us how any inspector would be able to determine whether a queen-bee in an ordinary mailing-cage was affected with any bee disease, except, possibly, with paralysis. No queen, unless she were killed, dissected, and examined with a microscope, would show the presence of disease germs. A dead queen in either case would be of no use to any one. It would mean the actual prohibition of sending queens by mail to the islands.

But it is possible to know the locality where the queen was produced, and the name of the shipper; and even then the information would be of but little value unless the inspector were thoroughly familiar with the locality in which the queen was produced. If, however, the queen-bees came in a nucleus-box or hive accompanied with combs, then the inspector could offer an intelligent opinion as to whether the *combs* were free from disease, but not the bees or queen.

It should be the duty of the inspector to inquire whether the bee-candy put in the cages for tha transmission of the queens was made of honey that had been thoroughly disinfected by a reasonable amount of boiling; and it might be wise to go further and recage all queens and bees that come in the mails, burning up the others.

In a further ruling, all foreign honeys are subject to examination before they are allowed to pass into the island. It is proper to remark right here, however, that a microscopic examination might not show the germs of disease—especially so as bacteriologists to-day are not entirely agreed as to what constitutes the cause of some of our diseases. It would seem to us that nothing but a thorough boiling would insure safety, and that would probably spoil it for table use. Inasmuch as honey of good quality is so cheap in Hawaii, there is no probability that any foreign honey would find a market on the islands, as it could not be laid down for any thing like the cost of the domestic article. Resident Americans possibly might be willing to pay a fancy price for clover comb honey, but it would be impossible to inspect this with spoiling it. Under the terms of the rulings it would seem that all foreign honeys would be barred from the islands.

In relation to the importation of bees and queens it will be wise on the part of the prospective importer to communicate at once with the committee on bee industry, consisting of Mr. A. Waterhouse and Mr. P. R. Isenbery; also with the Division of Entomology, Mr. Jacob Kotinsky and Mr. Albert Koebele, Hawaii.

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### THE DETROIT-CONVENTION PICTURE.

We take pleasure in presenting in this issue a picture of the members of the Detroit convention of the National Bee-keepers' Association that met in the City of the Straits, Oct. 13 to 15. It was the special property of Mr. W. Z. Hutchinson, who has been and is still selling beautiful large reproductions of it, 20×24, that necessarily bring up more clearly the details than can possibly be shown here. His regular price for the picture is $1.50 prepaid; but we have made special arrangements with him by which we are permitted to reproduce it in reduced size. Many a bee-keeper will want and should have a copy of the full-sized picture for framing in his home, especially if he is in it himself. It probably contains the faces of more representative bee-keepers —men who are prominent as writers, or who are successful as honey-producers, than any other photo of late years, and it will probably be many a year before we have as many of our leading men again in one group. Our readers will doubtless be glad to get the original so that, in the future, they can see how Mr. So and So looks when his name is seen in public print.

The final stenographic report of the convention is now ready for distribution to the members only of the Association in regular standing. This picture, in connection with this report, will make a very interesting contribution to our literature.

# SIFTINGS.

By J. E. CRANE

Mr. Doolittle's advice as to the best material for packing bees for wintering out of doors is sound, and no one will make a mistake in following it. See page 1147.

That recipe for beeswax finish, page 1194, is worth a year's subscription to GLEANINGS. Let's see if we can't remember it—one part pure beeswax; three parts turpentine; wax to be melted, and turpentine stirred in while hot.

Again, on page 1206, Mr. Morrison points out the value of honey in the production of levulose, the value of which has not been very widely known heretofore. How much we have learned about honey during the last year or two!

Those articles with illustrations, such as the one by J. H. J. Hamelburg, commencing on p. 1196, are exceedingly restful and refreshing. How fast the world is coming together and the prophecy being fulfilled, that "there shall be no more sea"!

Wesley Foster's experience in selling honey is certainly interesting, and shows what can be done. I have sometimes thought it might pay to organize and place peddlers of his stamp in every considerable town in the country. Every one would then have a chance to buy this most delicious food. Grocers do not seem to like to *push* the honey trade.

E. D. Townsend says, page 1185, "I have seen a dashing rainstorm cut off the basswood flow when but half over." Are you sure it was the washing of the blossoms that caused the flow to cease? I have several times known the flow from basswood to be checked and seriously injured when the storm was miles away—not a drop falling within range of my bees.

Waxing splints, page 1244, is briefly discussed. There was one thing we noticed in those illustrations of Mr. Atwater's combs. Neither of those that had wires in them was gnawed by the bees, while in both of them having no wires the splints were badly gnawed. Now, he may not have so intended, but somehow I got the impression that such was usually the case.

It is a great source of pleasure to learn from page 1244 that Dr. Miller is not grumbling after taking 138½ lbs. of comb honey per colony the past season. Our crop this season was 22 lbs. of comb honey per colony. The biggest yield I ever had was in one yard where it averaged 100 lbs. per colony. Say, doctor, is there any unoccupied territory in your vicinity?

I agree most heartily with Dr. Miller, p. 1176, that the United States flag should float over the brewery. The government is certainly in company with the brewer, and why not let the world know this fact? The evil is not in the emblem but in the company. Let the government cease to draw its sustenance from the brewery, and the flag will no longer float there.

On the same page Mr. Morrison speaks of the value of the sunflower for both honey and seed. His statements, I believe, are quite correct. I used to wonder why more was not grown, until some years ago I raised a patch of them, and then learned how rapidly they would exhaust the soil—more so than any other crop I ever raised. With very rich soil or plenty of fertilizers they can be grown with success.

On page 1180 Mr. Holtermann illustrates a winter case for receiving and holding four single-walled brood-chambers. While I have for many years wintered bees in double-walled hives I believe that placing four brood-chambers in one large case is a decided advantage. Mr. Ira D. Bartlett told me a year ago that he had been very successful in wintering his bees in this way. Bees in single-walled hives are much more easily cared for during the warm months.

W. K. Morrison in the Oct. 1st issue of GLEANINGS gives us many interesting facts. In quoting from the Arizona Agricultural Experiment Station, however, he says that "honey makes excellent cider." Wouldn't it have been better to say a substitute for cider? While honey has many good and excellent qualities it does not make cider. Let's keep to the truth. Cider is the expressed juice of apples, and perhaps some other fruits, and in no possible way can honey be turned or changed into such juice.

Mr. Wm. W. Case faithfully portrays the evils and remedies for the ravages of the larvæ of bee moth, page 1199. I can not agree with him, however, that these larvæ will live for a long time on the footprints of the bees. It is just dirt or dirty wax brought up from below, and mixed with the wax, and which contains an exceedingly small percentage of nitrogen. I have found that, where such cappings are badly perforated and eaten, a good brushing with a rather stiff brush will greatly improve the appearance of the combs.

I am sure the bee-keepers of the country ought to be very grateful to Mr. Morrison for the many facts he has given us the past season in regard to honey and sugar, the value of honey as food, and the difference between cane and beet sugar. See pages 1248, 1249. A year ago I wintered most of my bees on raw cane sugar. Two yards wintered better than I ever had them before, except that in one I did not feed enough, and some starved. In other yards the bees suffered from poor honey stored before I commenced feeding.

On page 1245 Mr. D. Everett Lyon deems it a great injustice to bee-keepers that they should not receive pay for their tin cans in which honey is packed and sent to market; he also thinks it unfortunate that buyers should insist on the use of tin cans. Well, if Mr. Lyon had dug honey granulated solid in cold weather from a few 600-lb. barrels he would see a reason for bottlers

of honey wanting their honey to come in five-gallon cans that could be quickly placed in a tank of warm water to liquefy, and then be poured or pumped into a large tank for bottling. But why should not the buyer pay for the cans? Where the buyer pays ½ cent more for honey in tin than in barrels he does pay for them, does he not? and if he does, why should he not keep them and sell them to whoever he pleases? Again, it may be said that all goods sold include with them the container in which they are packed—barrels with apples or sugar, pails with lard, tubs with butter, etc. The farmer who sells a barrel of apples for $1.75 sells his barrel with his apples, although it may have cost him 35 cents, or one-fifth of all he gets. The honey-producer sells a case of honey for 8 cts. a pound, and receives $9.60 for it, cans and honey. His cans, if new, doubtless cost near 60 cents a case, or just $\frac{1}{16}$ of what he gets. While the farmer loses one-fifth, the honey-producer loses but one-sixteenth. Sometimes crates are returned, as egg or fruit crates. As to selling used cans when in good shape, and free from dust, I see no objection. We sold, the past season, a large number of such cans for 25 cts. each. Those who bought them doubtless saved just about that much by buying them. Some of these we have bought back filled with new honey, none the worse for being packed in second-hand cans. Rusty or leaky cans should not be sold at any price. Again, there are some markets where the producer would find that it would pay better to use only new cans, as in cases where the honey is to be sold in the cans as received.

There is another thing in this connection I should like to speak of, and that is that much honey is lost by shipping it in cases too fragile to stand the journey, or with nails driven into the tin cans, or with caps not tight.

# CONVERSATIONS WITH DOOLITTLE

### WINTERING IN A CELLAR.

"Mr. Doolittle, I want to know the best time to set the bees in the cellar for good wintering. When we had that little snow about the middle of the month, I came near putting the bees in, but did not. Have you put yours in yet?"

"Yes, we put ours in just after the snow went off, waiting till every thing had nicely dried from the melting snow; and as there was no frost, and the ground was not frozen, the hives could be picked up as quietly as I ever knew, the bees not knowing that they were moved, unless by some mishap an occasional hive was jarred a little. It is quite a treat to get bees in so quietly."

"But was not the middle of November too early to put the bees in during such a warm fall as we have been having? My bees have been flying nearly every day for a week, and I have been congratulating myself that I did not put them in."

"Could we have known just what the weather would have been, perhaps it would have been as well to wait; but suppose winter had set in with that snow, as it more often does than otherwise, then we would have had to carry in the hives all covered with snow and ice. It would also have been necessary to pry them up from the frozen ground, and the disturbance and dampness which would have existed under the circumstances would have tended toward very poor wintering."

"But would not the flights the bees have had more than overcome those things?"

"I do not think so. The bees had a good flight on the third of this month (November), and I doubt whether these later flights would have been of any practical use to them. In fact, I have had reason to believe that many days of flight during the late fall are a detriment rather than otherwise; for with so much activity after all breeding has ceased, there comes a consumption of honey and loss of vitality which can not be made up till the following spring; and by that time the bees are much nearer being worn out by old age than they would otherwise be, so that we have spring dwindling and its consequent derangements very much the same as after what is known as bee-diarrhea. With one good flight the fore part of November I always consider it better to get the bees in their winter quarters the very first good opportunity thereafter."

"Well, if that is correct you would advise me to put mine in at once, would you not?"

"I certainly would; and I would not wait longer than this afternoon about doing it, either, as it will be as good a time as you will be likely to have, as it is not freezing outside as yet, though the mercury is down to 36."

"There is another thing I wish to know about. Is it well to give the whole entrance to the hive when the bees are in the cellar, or would you contract the entrances part way?"

"If your hives have the bottom-boards nailed fast to the body, the best you can do is to give the whole entrance; but, if I am correct, very few of our practical bee-keepers of to-day use any thing else than a movable bottom-board. Our bees have a two-inch space the whole width of the hives during winter, and very many of the colonies cluster down below the frames till the bottom of the cluster rests on the bottom-board. They seem to enjoy themselves in this space, if I may judge from the splendid results."

"Do you allow any one to go into the cellar besides yourself?"

"Certainly; come on. I prefer a candle to any thing else for a light, as it disturbs the bees less, and I can hold it close up to where I wish to look. There! see that cluster under there, hanging down something like the crown of your hat till they touch the bottom-board."

"Yes. They do not move or stir more than dead bees."

"You watch them while I breathe on them. There! do you see the wings move and the stings come out? We'd better leave this hive now or they will soon be flying at the candle?. See, here is a large cluster in sight, nearly as big around as a peck measure. See those rows of abdomens jutting down between each range of combs, each as immovable as though riveted there."

"But do they stay like that all winter?"

"They usually do until March, when they are not as quiet as now; that is, they will not stand the light as long at a time as now. Although the temperature remains the same, and the dark-

ness is the same, they seem to know that spring is near. The longer they stay in after the middle of March the more easily they are disturbed as each week passes, till they can go out to enjoy the commencement of another season of activity."

# BEE-KEEPING IN THE SOUTHWEST

By Louis Scholl

Merry Christmas and a happy New Year. The old year will soon be gone and a new one will begin. Has the old one been a profitable one to you? If not, why not? If it has been a profitable one, why was it? and what plans have you made to make the coming year even more profitable?

It seems a pity for a bee-keeper to melt up his old combs every four or five years, page 1366. One feels too much as Dr. Miller does about giving them up for sheets of foundation; and this will, I fear, be the trouble with too many in places where bee diseases prevail. Rather than melt up the valuable (?) combs, and thus gain just so much toward saving the bees from destruction by disease, they will be retained. We are anxious to see the figures that are forthcoming. We must confess ourselves that even we are somewhat stingy about our *good* combs unless there's something in it for us when melting them. [The figures referred to are given on page 1425, last issue. If there is no suspicion of disease in the locality, and the combs are straight and good, we would not advise any one to melt them up.—Ed.]

### FALL ROBBING IS DANGEROUS.

Care should be exercised to prevent robbing late in the fall. It has a wearing-out effect on the bees. This is in reference to wholesale robbing, or a robbing-spree, which often occurs through the negligence of the bee-keeper, though sometimes due to some avoidable accident. Of course, it also happens that the bee-keeper can not always avoid such wholesale robbing. We had such a case only last week. Since we haul nearly all of our honey home, where it is put up, the bees are always on hand, and soon show up by the thousand. They've been spoiled several times, and are always looking for another chance, even on very cool days, wearing themselves out unnecessarily when they should be in their "winter-quarters rest."

### QUEENLESS COLONIES LATE IN THE FALL.

It is a waste of time to look for queenless colonies late in the fall; and, besides, opening colonies when the bees are all at home starts robbing in a short time. When we find a colony queenless, or very weak from some other cause, we simply set it on top of another strong colony. The combs will be taken care of, at least, while otherwise moth larvæ might destroy them before we could make another visit to that yard. With many yards to attend to in a busy season we found long ago that tinkering with weak or queenles colonies does not pay, and the above is the quickest way to dispose of them. Later the hives and combs may again be used for increase. During the late fall, only such are disposed of as are easily seen to be weak or queenless by simply walking through the yards. All others are left to take care of themselves until the following spring. If they die out in the mean time the combs are safe from the ravages of the moth larvæ. They must, of course, be taken care of promptly during warmer weather.

### BREAKING THE RECORD; REMOVING HONEY.

On page 1251, mentioning some of the good qualities of the shallow supers, reference was made to the fact that it was possible to remove from the hives a thousand pounds of honey in half an hour. This has brought me several letters from doubting ones, who question my "bold statements." Since the previous mention was made, however, I have been placed in position to make even bolder statements—that *with the shallow-frame supers I can remove a thousand pounds of honey from the colonies all by myself in twenty-three minutes.* This was done on a cool day in October. My watch lay on one of the hives. Had the bees moved out more rapidly the time would have been shortened; but they were "a little stiff," and had to be forced down with smoke in greater quantity.

Not only did I get letters of a doubtful nature as to the previously mentioned fact, but one person came himself from a distance to see this wonderful (?) stunt, and to go right after the truth. It was November by this time, and the air quite cool. The bees were quite numb, but with a little assistance in the way of smoking, 1140 lbs. of fine comb honey was removed in 17 minutes. In the summer a helper and this "6 feet 2" removed 1050 lbs. in a little over 10 minutes. That's taking honey off in a hurry as against the old method of brushing and shaking bees off the deep combs, etc.

### A PLEA FOR BETTER HONEY-CANS.

Before Texas producers make arrangements for honey-cans for next year I wish to get in touch with the bee-keepers of the State, especially the members of the Texas Bee-keepers' Association. In some correspondence with railroad officials I find that the loss of honey *en route* to customers is something enormous. If this is allowed to go on, bad results must necessarily follow. First, the railroads will begin to object to paying claims for damaged-honey shipments; and, second, the buyers, especially the merchants, will object to handling a commodity that comes damaged to such an extent that they can not handle it profitably. These matters are not as well understood by the average bee-keeper, but must obviously be learned in time.

The railroad companies are considering this matter now, and are looking for a remedy. To accomplish any thing, they must get in touch with the bee-keepers who know and understand the situation. They are willing to handle the honey as freight, but not at a loss; and to find the remedy the cause must be located. If it is in the package used, it must be made stronger; if in the handling of the freight *en route*, then the mat-

ter must be looked after on that side. For this reason I shall be glad to receive letters from all those who have had experience in shipping honey, and especially those who have had damaged shipments, etc. All items that may be of importance toward helping to remedy the trouble should be mentioned.

From my own experiences and observations in shipping honey for sixteen years, and seeing it shipped by others, I find that the shipper is often at fault, while at other times the fault rests with the railroad people in the handling of the honey. In the former the trouble lies in that too much honey is shipped in cans of inferior quality, placed in wooden cases that do not hold together under the great weight. I have learned that from my own experience, when I used the same kind of cans and cases. The greatest trouble is due to too light cases being used to hold the heavy cans of honey. Therefore this should be looked after, and remedied another year by using heavier boxes or cases, looking also to the quality of the cans as well.

There are instances, too, of rough handling of the honey on the road by the railroad employees. If substantial packages are used in the first place, however, then the railroad companies can be held responisble for damaged shipments due to negligent handling. The long distances that honey must be shipped here in the South, with the many transfer stations, together with more or less careless handling, makes it important that we look to good strong packages for shipping our next year's crop of honey.

There is a danger that confronts us, as producers and shippers of honey, if we do not attend to this matter promptly. It is of vital interest, as the loss of honey in shipment is so great that it not only costs the railroads a great deal of money each year, but in the end works to the detriment of the producers. Furthermore, the buyers who receive shipments only slightly damaged, and do not present a claim for the loss, may be turned against buying a commodity on which they must lose, hence will not buy again. So let us take up the matter together. Letters on the subject will be welcomed.

### SPRING MOVING OF BEES.

All jokes aside, Dr. Miller, here is one who believes it is often better to wait till spring to move bees. I have tried it several times, and with better results. Did you ever notice colonies of bees in an apiary which has been in one place a long time become so "sot in their ways" as not to give best results? They seem to get settled down into a rut—don't do so well as new, vigorous, hustling colonies generally do. I mean this of colonies that are not manipulated very much, but remain on their stands the year round, receiving only their supers, etc., and having the surplus (which for the above reasons is not the greatest amount) removed. Leave them on the same stand next year, and they are the same; they seem slow and sluggish. Move them to a new place in the spring; stir them up, and note how much better they work. I compare them to people who have tired of their old home, have moved to a new one, and have become invigorated with new life. At the old place they were in a rut; every thing was left to go its way; at the new, they gain a new interest; every thing is overhauled and put into better condition. The same change has an effect upon the results of the occupation, whatever that is. With bees it will be noticed very easily, if one buys a neglected apiary and moves the colonies to a new location the following spring. If moved in the fall the bees remain more or less in the old rut, or get back into the same old habits before the following spring through the long winter. The stirring-up of the bees rouses them, and the excitement causes them to use their stores, so that they are stimulated to heavier brood-rearing. The result is a rousing colony of bees and a greater amount of surplus. The best time for these moves, I find, is just long enough before the expected-honey flow to allow the young bees, raised on account of the move, to be old enough for it.

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# GLEANINGS FROM OUR EXCHANGES

By W. K. Morrison

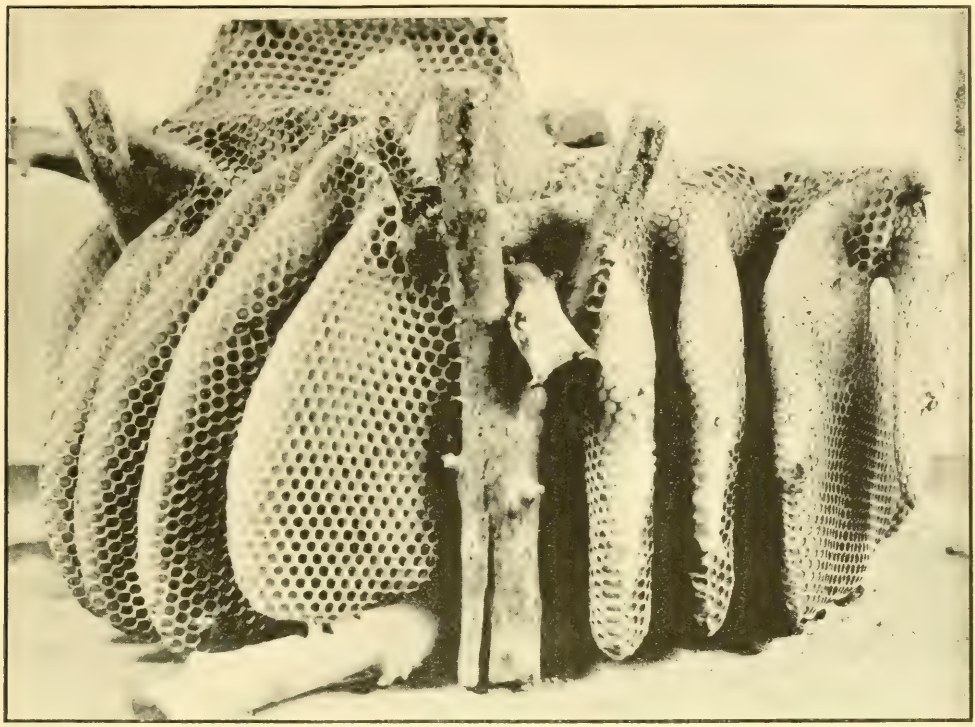
### SACCHARINE — BEWARE!

That reliable journal, *The Louisiana Planter*, is responsible for the statement that saccharine is being sold right now in New Orleans. It says: "And it is doubtless utilized by manufacturers of syrups as a cheaper way of obtaining the necessary degree of sweetness, without paying the cost of the proper sugar to produce the desired sweetness."

This is an important statement, as the general effect of saccharine is equal to a slow poison by causing the food to remain undigested. It neutralizes the action of the digestive ferments, and in this respect resembles formaldehyde. Bee-keepers will be obliged to register a protest against the sale of this insidious substitute for real sweet. We ought to have a national law prohibiting its sale for food, and even its manufacture should be regulated. It is derived from coal tar.

### DEATH OF A PATRON OF APICULTURE.

The death is announced of M. Leon de Bruyn, formerly Belgian Minister of Agriculture. He is very gratefully held in remembrance by Belgian bee-keepers, because during his term of office he did so much for the hee-keepers of his country, being extremely liberal in giving their societies needed assistance. With the exception of Switzerland, Belgium stands higher, perhaps, than any other country in the way the bee-keepers are organized for mutual assistance and defense. Six bee-journals are maintained, and bee-keeping is taught in the agricultural schools in very good style. Bee-keeping is followed in a scientific fashion, and every thing is done to promote a truly efficient system of keeping of bees. This healthy state of affairs is in no small part due to M. Leon de Bruyn. He was 70 years old when he died, and was a member of the senate.



NATURAL-COMB BUILDING IN A HIVE MADE ENTIRELY OF GLASS.

## THE BEE AS A SUBJECT FOR NATURE-STUDY.

### Natural Honey-comb.

BY EDWARD F. BIGELOW.

Most of us apiarists who lay stress on the economic point of view have buried the natural in the artificial. How few who have confined their attentions to the right-angled frames of the modern hive really know what honey-comb is? Of course, now and then it is seen when the bees recklessly build in some section where the starter was not in good shape, or when they build in some portion of the hive not filled out with frames. Most bee-keepers at some time in their life have satisfied their longing for the wild in a fascinating ravaging of a bee-tree. Within such a hollow the honey-bees are themselves. Here they plaster and twist and turn and press, and extend upward and downward in most delicious bendings. It is easy to make a transparent hollow-tree, or, in other words, to have a hive into which one can see through top, sides, and end, and so that the bees can build in any manner to suit their fancy as freely as they could in a tree. All that is necessary is five pieces of glass of almost any size that is preferred; but the five pieces must be so related to each other that they may be assembled to form the top, the two sides, and the two ends of an inverted box. The pieces of glass are easily held together by passe-partout binding. Fasten to a board some form of rustic branching to suit one's fancy, and invert over it the glass box. Then the fun begins. The bees are unhampered. As soon as the swarm has been put into the box the bees begin work to suit themselves, not to please Mr. Hoffman nor any other person who would restrain the natural traits of the honey-bee within artificial limits.

Herewith is a photograph of an excellent example of honey-comb within one of these passe-partout hives. I have spent a good deal of time with various forms of observation hives, but have come to the conclusion that, for watching and studying the honey-bee when from every point of view it is unhampered, there is nothing like this simple inexpensive glass box. There is surely nothing more convenient for observation from every side, and nothing wherein the honey-bee is left so thoroughly free to pursue her own sweet will. It is really an old-fashioned box hive made transparent.

Of course it is necessary to keep such a hive within doors. Warmth and darkness may be easily provided by blankets or some other opaque cover thrown over the hive when its interior is not to be examined.

Try one and "live happy for ever afterward."

HONEY-BEES AND POLLEN MASSES.

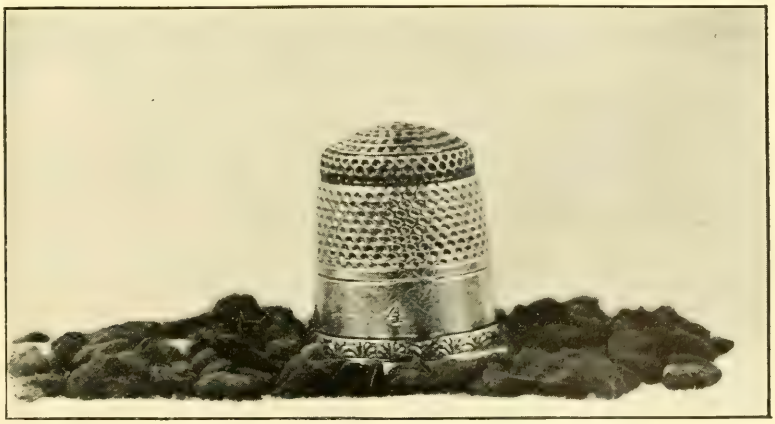
There is no more interesting question pertaining to honey-bees than the manner in which they gather pollen and carry it on their legs; and the more closely one watches the bee on a flower, the more deeply is he puzzled to know exactly how the work is done. The closer the view of the

POLLEN MASSES ON LEGS OF BEES.
Several show side hairs (like stakes on a hay-wagon), to hold on the load.

BEES WITH MASSES OF POLLEN ON THEIR LEGS.
Note the bee in the lower right-hand corner, with two masses of pollen almost as large as its body.

legs and the pollen masses, and the greater the magnification used for the observation, the deeper becomes the wonder as to the whole process. Bees cover themselves with pollen so that frequently when they fly from bloom to bloom the particles drop to the ground. Yet notwithstanding this apparent haphazard gathering there is a method in the process, since some of the pollen is regarded as mere litter, while the rest is a desirable load, for a certain definite amount is, by a mysterious process, transferred to the place designed for it on the flattened legs.

One bright and beautiful day in May I noticed that the bees were coming in with loads larger than usual, and that these were not uniform in color. There were various shades of yellow and orange, and now and then a bee arrived with a burden that was deep pink or even red. I immediately got my collecting-bottle with a liberal supply of chloroform. With bottle in one hand and tweezers in the other I stood over the open hive with two or three frames out. As here and there I saw a honey-bee running with a liberal load, I picked her up and put her in the sleep-bottle. The chloroform immediately quieted the captives and prevented them from dashing about the bottle and shaking off the pollen masses. Then I took the pile of bees and photographed it to show that the masses were huge in comparison to what one would suppose the bees could carry. In some cases the two masses were almost as large as the abdomen of the bee that was carrying them. The photograph shows the location of the packing on the legs, but it is to be regretted that the art of photography does not yet show color. The pile as it lay before my camera was indeed beautiful. I then removed some of the pollen masses and scattered them along on the "optical bench," placing a thimble so as to show the relative size, and took another photograph as is shown herewith. So far as my observations extend, there are never two colors of pollen in any one mass. I took pains to crush or (with a needle) to tease apart some of the masses, but I could not find a single instance where there was more than



MASSES OF POLLEN TAKEN FROM LEGS OF BEES.
These were photographed with a thimble to show the relative size.

one kind of pollen in the same mass. It is true I believe that the honey-bee gathers only one kind for each load; but it is not true, as I have sometimes heard it stated, that all the bees of the hive work at one time upon one kind of flower. The conditions in regard to pollen-gathering make this self-evident; and since many bees were coming in laden with nectar, it seems probable to me that there was as much diversity in the variety of nectar as there was in the variety of pollen.

Here is a wide field for further experiment, and I intend to work in it extensively next summer. I am wondering what materials will be accepted by honey-bees as a substitute for pollen. One of the most interesting communications that has come to me along that line is from a child who wrote me that her mother scattered red pepper on a certain flower-bed in early spring to keep the dogs from digging it up. To the great surprise of my correspondent and of her mother, the bed was immediately covered by honey-bees, and, so far as could be observed, they were carrying off the tiny grains of red pepper, picking them out from among the particles of earth. If honey-bees like that kind of food they will surely maintain their reputation for "hotness" in more senses than one.

EGG OF THE QUEEN.
This was photographed in position (on end) at the bottom of the cell.

THE EGG OF THE QUEEN-BEE IN POSITION.

All who have had any experience with honey-bees have observed the workers cleaning out the cells, after which the queen hovers over them, and, after a little hesitation, backs with her curved abdomen into one of these renovated apartments and there deposits her crescentric egg. I have always been desirous of seeing in microscopic detail exactly what happens at the bottom of that cell, and how the egg is held in position. It appears that there is a tiny particle of a sticky material in the bottom of the cell, and I am disposed to think it is placed there by the worker bee, and that it is of the same material as the royal jelly, or of some very similar substance. Perhaps the royal jelly has been made a trifle thicker than usual, yet it seems to be something more than jelly, being more like a very thin wax. It surely does not appear to be material on the egg, for a careful examination shows that there is nothing adhesive on either end of them. I must confess that the process is not yet clear to me, but it is indeed interesting to have a side view of the bottom of a cell, and to see the egg standing erect on the tiny "teeing" mass of supporting material. The egg is curved, and a curious thing is that it seems to develop unevenly throughout its length, doing so more rapidly at one end than at the other. As this development continues, the egg from above downward becomes limp, and gradually turns down in a way that is somewhat similar to that of a wilting plant which bends first at its tender tip, the withering gradually extending down the stronger stalk. This bending, although the resemblance is remote, reminds me of the skunk-cabbage fruit which slowly bends downward as winter approaches.

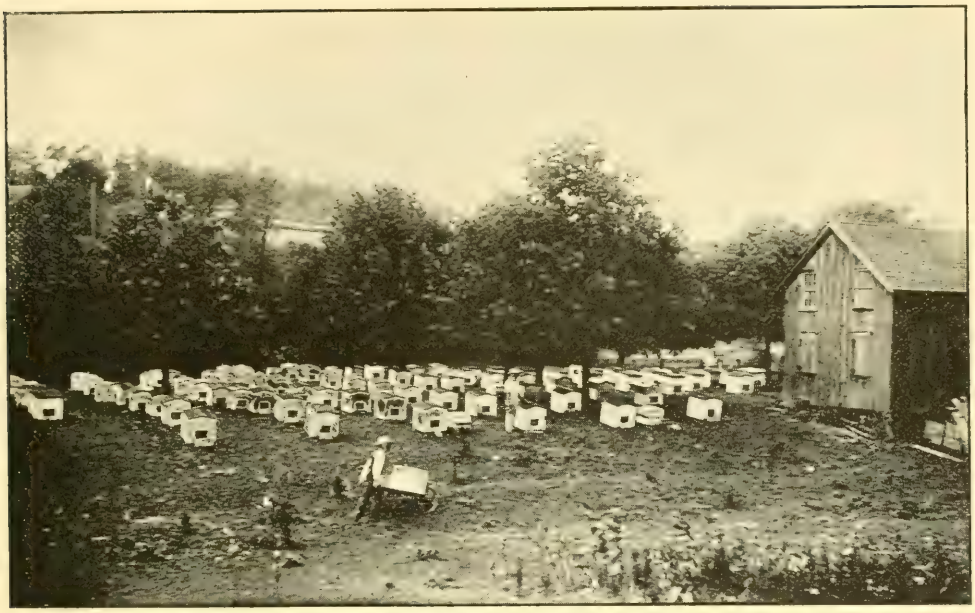
This is a wide field for investigation, and one that is fascinating. I show herewith by a photomicrograph a curved egg in position at the bottom of the cell. It required a great amount of time and much careful manipulation to produce this, and, notwithstanding my pride in it as an excellent specimen of photomicrography, I must admit that it is far from doing justice to the subject. When magnified under a strong reflected light, eggs are beautiful objects, as they are apparently enveloped in filmy lace, which can not be shown in a photograph, as I have not been able, after repeated attempts, to picture these reticulations. It is, indeed, not shown to advantage on the ground glass, and, of course, if it does not appear well there it can not be transferred to the sensitive plate. A view of it under the compound microscope shows it to be a superb object.

I often wonder why so many collectors of birds' eggs rave over the wonderful beauty of those objects, and become so interested in collecting them. No birds' eggs with which I am familiar are so interesting as the eggs of insects; and among these, so beautiful in form and in ornamentation, none seem to me quite equal in attractiveness to the eggs of the queen honey-bee.

Stamford, Conn.

[In regard to the manner in which eggs are attached to the base of the cell, it is interesting to note what some of our standard authors have to say. Cowan, in "The Honey-bee," says: "She . . . . . deposits at the base of the cell, to which it is attached by a glutinous secretion, a little bluish-white oblong egg." Cheshire, in "Bees and Bee-keeping," Vol. I., makes the definite statement that "The oviducts are provided with secretion cells, which coat the egg with an aggultinative body, so that, as it leaves the queen, it adheres by its smaller end, as before pointed out."

These opinions indicate that the adhesive substance is on the egg and not on the base of the cell. It seems probable that this is the case, since



ONE OF THE OUTYARDS OF W. L. COGGSHALL.—PHOTO BY VERNE MORTON.

eggs laid by inferior queens are often attached to one of the sides of the cells rather than to the base, and it is hard to conceive of workers placing the adhesive material on the sides, only for a defective queen.—Ed.]

## W. L. COGGSHALL.

### The Man and his Methods of Management; the Most Extensive Bee-keeper, Perhaps, in the United States.

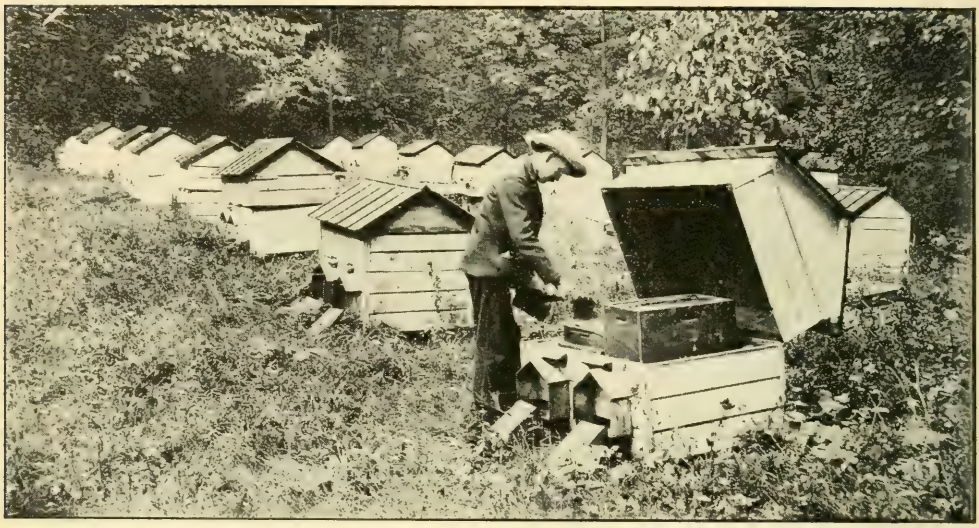
BY E. R. ROOT.

While in attendance at the Detroit convention I met Mr. W. L. Coggshall, of Groton, N. Y., whom our older readers will remember as being, probably, the most extensive bee-keeper in the United States, or at least that was the title he had earned several years ago. Prior to that time, Capt. J. E. Hetherington, of Cherry Valley, N. Y., held that honor; but during his later years, owing to ill health, his bee-keeping interests diminished while those of Mr. Coggshall, of the same State, materially increased. At one time the latter owned one or more apiaries in the West, and some eighteen or twenty yards in his own State, and one or two in Cuba. I do not know at the present time how extensive his holdings are in bees; but it is my opinion that, during the four bad years that have recently held sway over Cuba, his interests there have materially shrunken.

#### HIS MANAGEMENT OF OUTYARDS.

Our friend W. L. Coggshall, in connection with his brother David, has a larger interest in bees in New York than perhaps any other two men. They believe in the out-apiary plan, keeping from 50 to 100 colonies at a yard. At each of these places there is a small building with a complete extracting equipment, for the Coggshalls run almost exclusively for extracted honey. Bees are wintered mainly in outdoor double-walled hives. Some of the hives are on the tenement plan, and some hold only a single colony. The yards are located as advantageously as possible in the fruit sections, and anywhere from a mile and a half to three miles apart. The most remote yard at the time of my visit several years ago was something like twenty miles from home. Owing to the lay of the land, and the lakes in the vicinity, it is not possible to arrange all the apiaries so that they will radiate from a common center like the spokes of a wheel. The apiaries, as I remember them, were located in a valley between parallel lakes north and south.

No man is kept at any of the yards to look after swarms; for with Mr. Coggshall's management, providing he is not too much crowded, there will not be many swarms. The yard helpers all live at the Coggshall residence, which is shown in the small picture herewith. By this it will be seen that Mr. Coggshall is an extensive farmer; and when work is slack in the bee-yard the boys are turned loose on the farm. During the season the men are divided into one or two groups, sometimes going with the horse and wagon, and sometimes going on bicycles. It often happens that one of the men will take the wagon while the others will take the wheels to the yards. The wheelmen get things well started, so that, by the time the wagon arrives, a good portion of the honey for the day is taken off. After extracting one yard the gang will move to another one, sometimes extracting two whole yards in a day, and that, too, with a non-reversible extracting-machine of the Coggshall pattern.



AN OUTYARD OF W. L. COGGSHALL, SHOWING TENEMENT HIVE USED.—PHOTO BY VERNE MORTON.

HIS INTENSIVE METHODS.

The boys are all trained to work rapidly, even if a few stings are received; for it must be remembered that the Coggshall "lightning operators" all wear sting-proof suits and veils, long sleeves reaching down somewhat in the form of a fingerless glove protecting the hands but not the fingers, for the fingers are seldom attacked. The combs are brushed and shaken to free them from bees. Bee-escapes would be impracticable with the method in use by Mr. Coggshall, for the reason that it is impracticable for any one to go to the outyard and put on bee-escapes the night before.

This rapid method of taking off the honey naturally irritates the bees, and this has an advantage in one way at least, for the yards are seldom or never molested by thieves; for should a tramp or other person not familiar with the Coggshall bees attempt to help himself he would meet with a "warm reception."

COGGSHALL AND THE VICIOUS BULL.

At one time a vicious bull felt inclined to give Mr. Coggshall more or less trouble every time he attempted to go to a certain yard, for he had to cross the field to get to the bees. Now, Mr. Coggshall knew the temperament of his pets; but Mr. Bull followed him up and began pawing the air as if about to make a rush. Our friend edged along toward his apiary until he got near one of his hives. In the mean time the bull was closing in, apparently awaiting a favorable opportunity to make a charge. Mr. Coggshall grabbed up, at the strategic moment, a hive from its bottom-board, rushed at the bull, and threw it violently on the ground. The frames, well covered with bees, were of the unspaced type, and fell in a tangled heap on the ground within a few feet of old Taurus. The effect was almost instantaneous. The bull changed his roar; he sniffed and snorted, rubbed his nose in the grass, then wheeled, raised his tail, and started on a mad run away from his little tormentors, a sadder and wiser bull, leaving Mr. Coggshall in undisputed possession of the field. Never after that time did that bull venture to interfere; and even when teased to make another attack he was "mighty tame" as the boys said.

RESIDENCE AND FARM BUILDINGS OF W. L. COGGSHALL, GROTON, N. Y.—PHOTO BY VERNE MORTON

HOW COGGSHALL TAKES OFF HIS HONEY.

But, to return, I said the combs are brushed and shaken from the hives. They are next set down into hive-bodies on a wheelbarrow or hive-cart. When I visited him he had four of such hive-bodies standing on a two-wheeled cart.

When these were full of combs they were wheeled into the extracting-house, and a load of empties brought back to take the place of those removed.

HIS METHOD OF WINTERING.

Mr. Coggshall, notwithstanding the general practice of bee-keepers in the vicinity, of wintering indoors, keeps his bees outdoors in double-walled hives, and there they are left the entire year. His apiaries are worked on the intensive plan, being visited only a few times during the year—in the spring, during the extracting season as often as needed to take off the honey, and once or twice in the fall to put the bees in condition for winter.

HOW HE HANDLES THE SWARMING PROBLEM.

While I was visiting some of Mr. Coggshall's neighbors, one of them said he knew of one yard where he thought Coggshall had lost a good many swarms. I mentioned this to Mr. C. in a later interview, and he told me that that yard was remote from his home, and that season it had been somewhat neglected, owing to his inability to get help. The bees had become overcrowded, and, of course, swarmed. "But," said he, with a twinkle in his eye, "I could better afford to let, even under these conditions, a few swarms run away, than to hire a man to see to the bees all the time, as is the practice of some bee-keepers. At the price my honey brings, I can not afford to keep one man for each yard; and for that matter I do not believe any one else can if he stops to figure up the costs. But," said he, "I can raise bees for fifty cents a colony; and suppose eight or ten swarms do go, only five dollars is lost, and that would pay a man for only half a week's wages No, sir; my help and four or five men can manage the whole twenty yards, and do considerable other work."

HOW HE SUCCEEDS WHEN OTHERS FAIL.

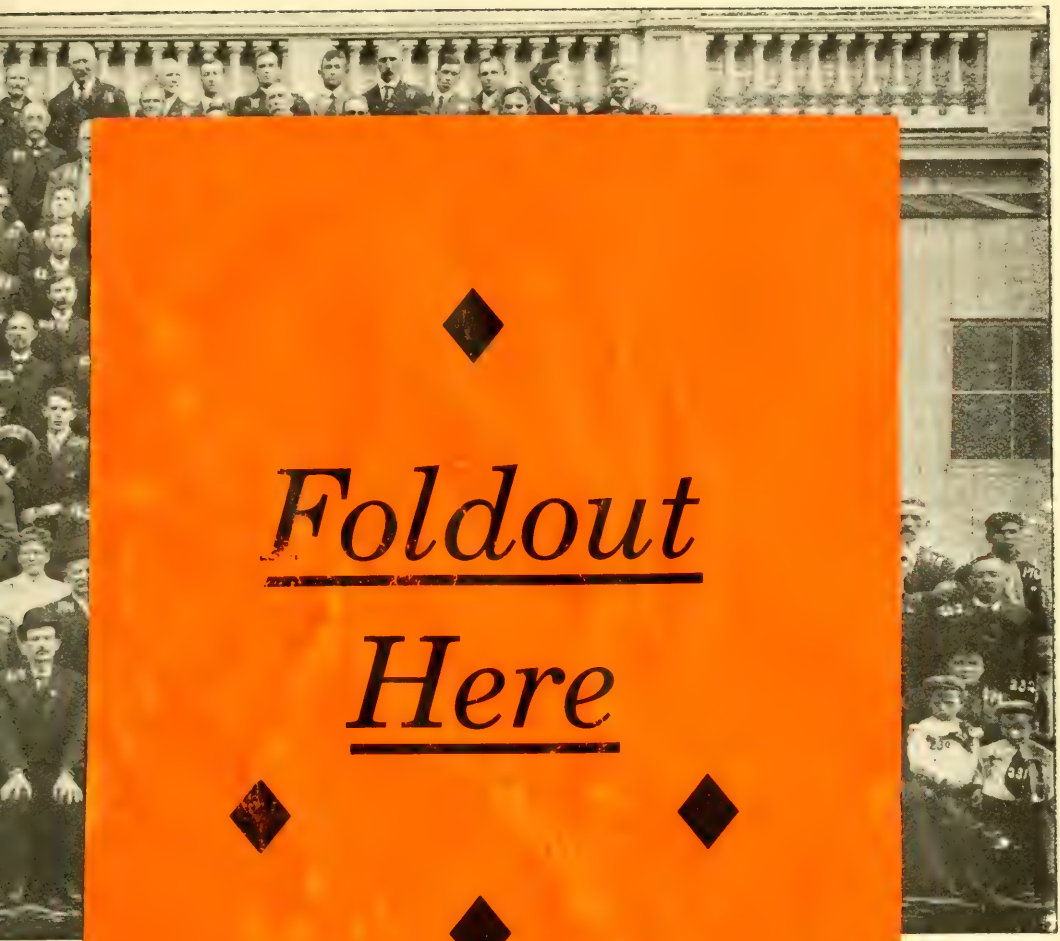
Mr. Coggshall is a genius in that he will buy up yards that do not pay their owners to run, and very often in one season he will make that lot of bees give him a good profit in one season over and above the cost of the yard; and, stranger still, he will make those bees pay in any frame or hive, although his preference is decidedly for the old-style Langstroth frame with a staple at the bottom of the end-bar, and the ordinary Langstroth hive.

Mr. Coggshall has been a very hard worker in his day; but during the last few years he has found it necessary to husband his strength, as he found he was overdoing. I believe he now simply furnishes the "brains" and lets his men do the work.

WORKING THE BEES AND THE FARM.

I do not know how he manages to prevent his farm and bee work from conflicting; but I am of the opinion that he does it on the basis of growing certain crops, the harvesting of which will not interfere with his extracting season; for it must be remembered that his main honey crop is from buckwheat, and that most of the extracting takes place some time after the main honey harvest of clover and basswood.

DOUBLE-WALLED HIVES USED BY W. L. COGGSHALL AT ONE OF HIS OUTYARDS.—PHOTO BY VERNE MORTON.



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THE ALEXANDER APIARY, FROM THE NORTHWEST.
There is probably not another apiary in the world consisting of 700 colonies.

## THE LAST DAYS OF E. W. ALEXANDER.

### Details of a Visit as Told by a Friend; Japanese Buckwheat not Considered as Desirable as the Silverhull.

BY PERCY ORTON.

Being desirous of enlarging my home yard to its full extent I made a trip to the home of my friend E. W. Alexander, to see the farms and growing buckwheat, in order that I could better compare it with our own section. The distance is about 50 miles. On the trip I passed through Mayfield, the home of George W. Haines, and I could see through the car window his apiary of 150 colonies. Mr. Haines is situated near the lower Adirondacks, about ten miles west of my home, in a very fine location. He harvested about four tons of extracted and comb honey this year.

I also went through Johnstown, the home of Mr. Chas. Stewart, the State Bee Inspector for this section. Mr. Stewart has started a yard in the city, and has in his four yards about 450 colonies. From Schenectady to Delanson, a distance of 15 miles, I estimated the number of acres of buckwheat, and I could not count more than *45 acres*. I am a farmer, and can judge the size of fields fairly accurately.

I arrived at Mr. Alexander's home about 11 A.M.; took dinner and had a good visit, but was pained to find him in such poor health. However, he felt just as free as he always did to tell any thing he could to help another bee-keeper.

He was very much interested when I asked him if the farmers liked Japanese buckwheat as well as silverhull or gray, and if his bees worked on it as well as on the latter. He said the farmers did not get as many bushels per acre from the Japanese buckwheat, as it grows so many false kernels, and he said that he would not give 15 cts. an acre for it as a honey-producer — that his bees would fly right over fields of the Japanese to the silverhull and gray. I was glad to hear so noted a bee-keeper say this, as I have found by years of experience with both that the Japanese is not as good for honey as for flour, the yield of flour on an average being but 20 lbs. per bushel. All through our valley we grow silverhull, and get from 25 to 34 lbs. of flour per bushel, and plenty of honey.

I looked over the buckwheat-fields that could be seen from the apiary, and came to the conclusion that the 700 colonies of bees never reach one-fourth the buckwheat that many people think they do. I don't mean to say any one has misrepresented any thing, but I believe that most bee-keepers can keep four times as many bees in one yard as they do now.

ALEXANDER HONEY-HOUSE AND APIARY, FROM THE SOUTH.

Before closing I want to say a little about black brood. If any one finds his combs are affected, the queen should be caged and empty combs or frames of foundation placed above the zinc over the old hive, and the queen released into the top story. In 30 days the

honey from the old hive can be extracted and the combs used anywhere in the yard. If the colony is of fair size to start with the plan works well with me.

Northampton, N. Y.

## BEE-KEEPING IN CALIFORNIA.

### Prices in 1909.

BY M. H. MENDLESON.

There are a few carloads of amber and light-amber extracted honey remaining in the producers' hands in this part of the State. The best sage comb honey is at a premium; there has not been such a scarcity of this grade for years. The market will be well cleaned up by another season; and since there was considerable loss of forage in the East from drouth and fire, prices for 1909 ought to stiffen.

Prices here are now ruling high. White honey is at a premium; comb honey is scarce, and the demand extra good.

OLD HONEY OF GOOD QUALITY.

Dr. Miller, p. 1303, I have sage honey 14 years old, and the flavor is better than when it was extracted. It is delicious. I have had sage comb honey, kept in dust-proof shipping-cases, in a warm dry room, free from odors, for a number of years, and the flavor improved. It was superior to any fresh comb honey I had ever eaten.

PHACELIA FOR HONEY AND FORAGE.

Replying to Dr. Miller's Straw, page 1243, Oct. 15, I will say that I have noticed two varieties of phacelia. The better honey-producer of the two has a floral stem of a shape and size that might be compared to a large caterpillar. This variety has an abundance of purple bloom. The honey is water-white, and of fine flavor; but it candies, soon after it is extracted, to the consistency of fine paste. I was at one time extracting some of this honey, putting it in a seven-ton cone-top tank, and before the tank was full the honey commenced to candy at the bottom; and when full I had to run a pole down to the faucet before I could get the bulk of the honey to run into the 60-lb. cans. I had to shovel out over two tons with a long-handled shovel. I then had to tip the tank on its side and fill open-top five-gallon cans so that the honey could be melted on the stove. This was an experience with candied honey that I shall always avoid hereafter. I drew off considerable of the honey while extracting, but the work was all done within ten days. I never had honey candy so rapidly.

In regard to phacelia as forage, I will say that cattle will eat it when the better forage gets scarce. It grows wild on the mountains, especially after a fire, and also when stock eat the pasture off clean. Of course, when stock keep the pasture fed off *too* close it kills or destroys, as the source of seeding is destroyed.

HONEY FROM IRRIGATED ALFALFA.

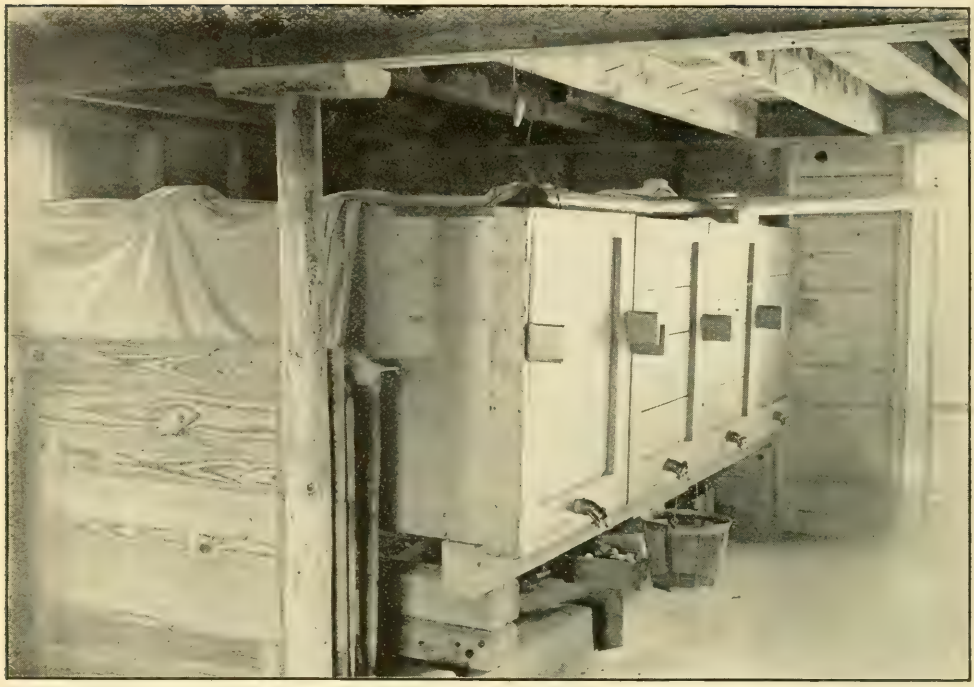
Hanford, Cal., produces an average of 53 carloads of honey a year. Hanford is about 250 miles north of Ventura Co., in Central California. The honey is gathered from the irrigated alfalfa, and is light amber in color, but pleasant in flavor.

COLONIES WITH PLENTY OF STORES FOR WINTER ARE THE STRONGEST IN SPRING.

On my ranges I like 40 to 50 lbs. or more of honey for winter stores. Colonies with good vigorous queens, and rich in stores in June and July, continue brood-rearing much later, and go through the winter strong in numbers, and with vigorous young bees. In spring they are ready to swarm early. Other colonies, with scant stores, quit breeding early and come out weak in numbers, and the seasons are well advanced before they get in the proper strength for business; or, in other words, the strength in spring depends on the amount of stores left on the previous season. The extra honey is money on big interest; for if we have a cool, cloudy spring, there is but little check in brood-rearing. The past three years we have had these late cool springs, and those few colonies with extra amount of honey, gave rich results.

HOME OF FRANK ALEXANDER, NEAR DELANSON, N. Y.

Previous to 1905 the majority of my bees were at the coast. I did not get half the surplus I should have secured, on account of the heavy fogs and cool coast winds. The fogs did not rise until about 10 A.M., and sometimes whole days were foggy. In such cases, bees have much less time to gather nectar, and that which they do bring in does not evaporate so well, and invari-



THE HONEY-TANKS UNDER MR ALEXANDER'S EXTRACTING ROOM; EACH OF THESE TANKS WILL HOLD FIVE TONS OF HONEY.

ably granulates. I had one of these locations that, in good seasons, never gave me over 75 to 150 lbs. of honey per colony, while those away from the coast would give me over double that amount. In 1892 (a poor year) the coast bees secured plenty of honey for the winter, as they had considerable old stores on hand in spring. The queens were superseded by better stock. I put on extra supers of fine worker comb, and many of my neighbors extracted some honey, some taking off from one to two tons, to their sorrow afterward. In the fall some had to feed back to keep the bees from starvation. My bees were left with 50 to 150 or more pounds of honey per colony, and in spring they came out rich and strong with vigorous young bees. We had the usual foggy weather and an unusually cool backward spring. The bees got only enough to stimulate brood-rearing. The results were, that all this great amount of surplus left over the previous fall made it possible for the colonies to rear a tremendous force of bees. In a few days we had clear weather, and the honey just flowed in at the rate of over 300 lbs. per colony, on a range that previously produced from 75 to 150 lbs. of surplus per colony.

MANY APIARIES MOVED.

Over 40 carloads of bees were moved out of Southern California last spring to better forage in the alfalfa-fields on the eastern borders of the State—a new section for honey-production. I was informed that many places were overstocked with bees, and yet it saved many of our friends from great loss.

WEATHER REPORT.

We have reports of heavy rains and snow in Northern Arizona, lasting a number of days. If this report is true, it will be followed by a wet winter here. We are having an unusual amount of cold cloudy weather for this time of year, and but little rain for some time. Nov. 22 we had about ¼ inch of rain, and now (Nov. 24) it is cold. Many are prophesying a wet winter and a banner honey year for 1909; but we can tell better when the honey is in the can. In this section, most bees are in good condition for the winter. I shall plan to have an abundance of young selected queens coming on in early spring near the coast, where the season is two months earlier than in the mountains or best sage ranges.

Ventura, Cal.

## TRAVEL-STAIN.

### The Cause and Remedy; a Special Honey-board Designed for Keeping the Surface of the Comb Honey Clean.

BY J. E. CRANE.

A few years ago I sent to Gleanings one or two articles on the subject of travel-stain. Several criticisms followed, in which the writers seemed to regard my views on the subject as rather wild or heterodox. I had something more to say on the subject, but delayed doing so until I had more fully studied the subject and made some experiments I had in mind. Indeed, I left unsaid the most important part—the prevention of the trouble.

As it has been several years since the subject

was discussed I might state briefly that the so-called travel-stain appears to be caused by, first, the bees covering themselves with pollen and entering their hives and rubbing their bodies against the combs and sides of the hives, causing a slight and sometimes considerable discoloration of the combs. I mention this, first, not because it is the most important, for it is not, with me at least. Second, the use of old wax, bits of propolis, the cappings from hatching brood, and even bits of cloth, or any thing that comes handy, mixed with new wax in various proportions for capping the new comb in sections, and so greatly injuring its appearance.

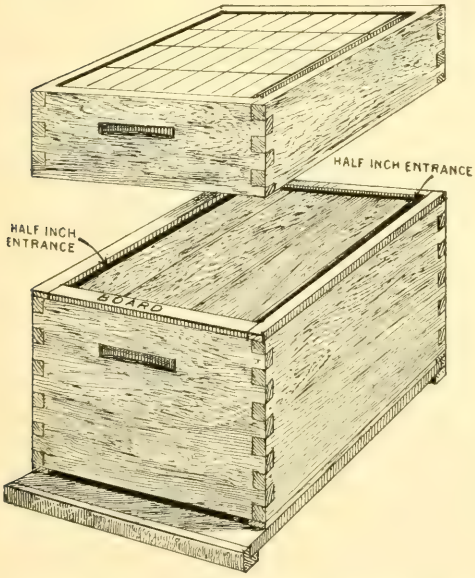
This has been a serious trouble with me, and is rather increasing as time goes on, especially in poor years. I shall not at this time try to prove that my conclusions are correct as to the cause, for I believe that any one who has given the subject careful study will agree with me. It will be my object, rather, to show what may be done to correct the trouble and overcome it, as those who were so much wiser than myself as to the cause of this trouble have given us no clue as to how it may be remedied.

As a good physician finds it necessary with every case that comes to him to make a careful and accurate diagnosis of the case before he writes his prescription, or outlines a method of treatment, so we, as bee-keepers, should very fully understand the difficulties with which we have to contend before we can hope to overcome them.

If we sit down to a bench and clean sections hour after hour we shall not be long in observing that such supers as have combs stained have the most stain near the center; or, to put it in another way, that the worst-stained combs are, as a rule, in the center, while those least colored are at the sides.

We shall also observe, if we look carefully, that the central combs of the brood-chamber are

E. W. ALEXANDER IN HIS LAST DAYS; THIS PHOTOGRAPH WAS TAKEN ON THE LAST OF AUGUST.




CRANE'S HONEY-BOARD AS USED BETWEEN THE BROOD-CHAMBER AND SUPER.

darker than those on the outside. Indeed, it often happens that, if the combs of a hive have not been changed during the honey season, the outside combs may be quite white. Combs built outside a division-board are often of snowy whiteness. In the same way it occurred to me that there was some connection between the darker combs of the brood-chamber, where the largest part of the brood was reared, and the stained combs in the center of the super above. How could I manage so as to allow the bees to pass up into the supers and yet prevent their carrying up any dark wax or cappings of hatching brood just below?

I noticed another thing: The further the surplus combs were from the brood, the whiter they were. But it is an old maxim, that the nearer the surplus boxes are to the brood the sooner and more rapidly are they likely to be filled. I was in a dilemma; for if I made it difficult for the bees to get into the supers and carry up dark wax they were likely to store a good deal less honey. It seemed to be a case of less stain, less honey, or more honey, more stain. I could have my choice.

At last I made some honey-boards, something

A FLOCK OF WHITE LEGHORNS OCCUPIED THIS TENT ALL WINTER AT THE STATE AGRICULTURAL COLLEGE GROUNDS, STORRS, CONN.—SEE POULTRY DEPARTMENT ON ANOTHER PAGE.

I had not used for many years. I send a drawing of one of them. It is made of ¼-inch stuff except the strips around the outside, which are ½ inch thick, so as to give a bee-space of ¼ inch between the bottom of the super and the top of the honey-board. On each side is a half-inch opening leading from the brood-chamber up into the bee-space below the super. This opening into the brood-chamber is where the combs are the lightest or least stained. The middle part of the board is what I call "the storm-center" of the travel-stain, both in brood-chamber and super.

After studying the subject carefully I came to the conclusion that such a board offered the best solution for checking the carrying-up of soiled wax from below into the super. I made quite a lot of them for trial the following season; yet so fearful was I that it would reduce the amount of honey in the supers that I used but few of them the following season; but the few I used surprised me in that the bees seemed to store just as much honey in the super as when they were not used.

I was not surprised as to the effect the use of this board had on decreasing the stain on the combs in the super. Those sections occupying the center, instead of being the most stained were the least so, while those on the outside, while somewhat stained, were not so bad by a long way as those in the center had been without the use of a board.

I was so well pleased that later I made boards to cover most of my hives. Later experience with them has been very satisfactory. During the past season I have used them on a large portion of my hives run for comb honey. I found an occasional hive that did not appear to have finished off its combs as well as though no board had been used. It is not necessary to put the board on until the bees are ready to cap the honey in the super, and not even then if the first super is raised up and an empty one placed under it. When they finally begin

CRANE'S HONEY-BOARD TO PREVENT TRAVEL-STAINED SECTIONS.

sealing they seem to work in the supers as well with the honey-board on as off—at least most of them do—and the improved appearance of the surplus honey well repays the trouble of using the boards.

My brood-combs are mostly old, and, of course, pretty dark, and the top-bars are thin and narrow. I think that, with thicker and wider top-bars, whiter surplus could be produced; but this may be only a fancy.

Another method of protecting surplus honey is to use, as far as possible, new combs in the brood-chamber, taking away the old combs about the time the bees begin to seal the section honey, replacing them with new white combs or foundation, or even allowing them to build new combs in the brood-chamber. If one has a surplus of old combs on hand that he desires to use he can place four of them in the center and two combs of foundation on each side with a honey-board, as above described, between the brood-chamber and super. The object is to keep old dark combs, as far as possible, from the super honey.

It is desirable to keep every thing about the hive as clean and free from propolis as possible. It is my present intention to remove slowly or exchange my old brood-combs for new ones, saving the best of the old for extracting purposes, and then melt the rest into wax. I can get from three to four pounds of wax from eight old Langstroth brood-combs; and since it requires but little more than one pound of foundation to fill them, there will be but small loss in making the change.

By the above methods I find the evil of travel-stain can be in a large measure remedied, and we have the satisfaction of having combs very much whiter than I had formerly supposed possible.

Middlebury, Vt.

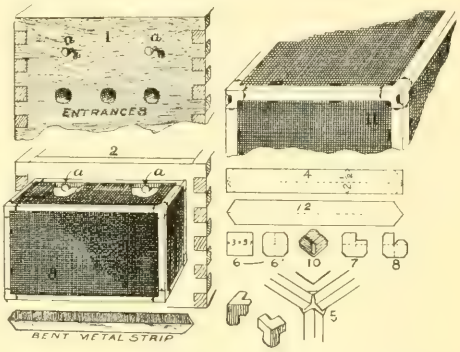
## SWARM-CATCHERS.

### The Advantage of Light Strong Cages which can be Quickly Placed over the Front of a Hive as the Swarm is Issuing.

BY C. W. DAYTON.

I have never seen the need of a long pole for a swarm-catcher, and it was long ago when I began to use the kind which I am about to describe. It is convenient, as we are passing to and fro, busy at other work, when we see a big swarm beginning to issue, to pick up a light cage and clap it over the front of the hive. It saves their mixing with other swarms which may be already out, and prevents their going into high trees or drifting into the yard of some pettish neighbor. This cage that I use has wire cloth upon five sides, while the other side is open. The open side fits so closely against the hive that no bees can get out. The bees will cluster rather compactly in the course of an hour. After that the catcher can be handled in almost any way. If I am not ready to hive the bees I put the catcher containing the swarm into a sack, and hang it up on the shady side of a building, or the bees can be shaken out into any confining box.

The illustration shows the front of one of my hives and the ⅞-inch auger-hole entrances which I have used nearly exclusively for about 20 years. I have an arrangement to enable the bees to climb up to these entrances, but it is out of the scope of this article to describe it. The three small holes prevent the swarm from issuing as rapidly as it would if an ordinary hive-entrance were used. More ventilation is necessary, but it is secured in another way rather than at the entrance.




At *a*, *a*, in Fig. 1 and 3 are the furniture tacks which are driven into the hives to hold the swarm-catcher. This swarm-catcher is made entirely of galvanized iron and wire cloth. The dark shaded part of the catcher shows about the usual appearance of a swarm when clustered in it.

The side rails of the catcher are made of 2½-inch strips of galvanized iron of 28 gauge bent into V shape and firmly soldered to corner caps as indicated. It does not take very much time to bend enough for 5 or 10 of these swarm-catchers in case there is no tin-shop handy by.

If the bees of a swarm are kept in this screen until near night they can be hived without any of the trouble and anxiety about queens, or about the disposition of the swarm to stay hived. We always know that the bees will stay until morning, and then if they have gone inside the hive and taken possession and appear contented, it can be seen at a glance. If they are dissatisfied they usually remain partly outside all night, and do not cluster among the combs or hang on the empty frames. They act shy of every thing we furnish. When the bees act willful—that is, when they remain in close cluster and do not start to the fields to work in the morning—it is best to keep them confined for two or three days. After we furnish a colony a good hive, and stores to live on all winter, and spend our time, labor, and patience to get them built up to good working strength, and then have a great lot of old bees pull up stakes and hike away to the woods, they ought to be "put in chains." Besides swarm-catchers I have about 20 boxes of simple and cheap design into which I can shake bees. It is no use to put the bees in a hive until they are in want of it. They will realize the need of one sooner if they are clustered without hive or combs. The object of the catcher is quick adjustment. When we see a swarm beginning to issue we need to get there quickly. I usually set my extracting-house or work-shop as much among the hives as possible, and the hives facing toward it as much as possible. Instead of using one or two small screened windows I have a 24-inch screen extend-

ing entirely around the building. I set the extractor and capping-cans so that the operator faces the hives so that his eyes can glance out across the bee-yard. A woman or even a child can manage the swarms from 200 or 300 colonies if they have a good equipment of catchers; and they can sit in the shade and sew or read most of the time, no matter how fast the swarms come out. There will be no mixing. In some large apiaries it is often that a small-sized swarm may issue, and by the time it clusters it will be the size of a bushel basket. It happens more often in California than it did in the East, unless the East has changed since I lived there. It is because the flying bees coming from the fields join the swarm. It makes trouble with the queens when these strange bees "mix in," and perhaps a very valuable queen is lost. It injures a queen to be balled or attacked.

I have 150 drone or queen traps, and have used them several years to control swarming, but I consider them a hindrance to the bees. If I wish to leave home for a day or two I go through the apiary early in the morning, and put traps on those colonies which are roaring loudest. If the entrances are large there will be no roaring. My traps are arranged so as to hook on nearly the same as this swarm-catcher. It takes only a few moments to arrange a hundred colonies so that we can safely leave the apiary. I have kept from fifteen to forty colonies for four or five years having no bottom-boards at all, and those colonies on the average have swarmed first and as frequently as any of the other colonies.

Chatsworth, Cal.

## BEE-KEEPING A FASCINATING PURSUIT.

### An Enthusiastic Report of a Beginner's Experience; a Good Earning on the Original Investment.

BY CHARLES STEWART.

I am only a recent recruit in the lowest ranks of the army of bee-keepers; but if I could say any thing that would induce even one other recruit to engage in bee-keeping I should be amply repaid, and feel, too, that I had conferred a great favor on said recruit. Of all rural industries (and I have had more or less experience in many) bee-keeping is the most fascinating; and, if properly conducted with suitable fixtures, the money profit will average fairly with any other, to say nothing of the pleasure derived from the study of the faithful little pets. I am only a private, and almost any one having a fancy for bees can engage in their keeping to even a greater extent than I have, without interfering with other cares.

I bought two colonies to start with, and never have owned above 23. In the late fall or early winter I subscribed for your paper. That proved to be the virus that inoculated me with the microbe of bee-keeping. The long winter evenings, and access to a library well stocked with bee literature, was favorable to the "culture," and by spring I knew theoretically as much about bee-keeping as the Moses who had been in the wilderness forty years with the bees.

I bought my first two colonies from a neighbor who had some surplus colonies for sale. He was one of God's own noblemen, and I am led to believe there are many such in the bee-keeping fraternity—not alone a sayer but a "doer of the word"—one of those whose religion it is to do more than bargained. After having sold me the two colonies at a moderate price he said: "There's a little weak colony; if you have a mind to fuss with it, take it along for nothing; but I judge it will need feeding to pull through."

I took it along. This was in March, after a winter of entrancing study of all phases of bee literature. I then had two moderately strong colonies and a nucleus—so to speak—of common black bees—all in boxes such as may be picked up in the back yard of a grocery store.

The first problem for the would-be bee-keeper that comes up for solution is the choice of a hive; and, in my opinion, it is an essential one. If a mistake is made here it is attended with serious consequences, as a change is not made without much loss, both in time and money. It is a problem that each should solve for himself only after mature deliberation. I selected the Danzenbaker hive, and I am vain enough to state freely that the choice was a good one. I winter outdoors on the summer stands and have never lost a colony, although severe winter weather is the rule, with temperature frequently 20 to 25° below zero; so I think I have no necessity for chaff-packed or air-spaced hives. Neither do I feel the necessity for a non-swarmer hive. My bees never yet have swarmed, so that, for me, the Danzenbaker has proved to be a non-swarming hive.

After the hive problem is solved, the next question likely to come up, but not so important as the hive, is the strain of bees to keep. For myself I settled this question by choosing leather-colored or red-clover Italians.

I brought my boxes of bees home March 18, covered them all snugly with tarred paper and let them stand till fruit-trees came in bloom, and then transferred to the Danzenbaker hives. The nucleus was a mere handful of bees, with a nice young queen, which, with some care, I built up into two rousing strong colonies, and later sold them for just $50 more than my initial outlay. The two moderately strong colonies I ran for surplus comb honey. They gave me 256 finished sections 4×5×1⅜), some of which I sold for 20 cts. each, some 18, 15, and a few of the least perfect and darkest as low as 10 cts. Of course, I did not sell it nearly all. Ourselves and nearest neighbors ate a fair share; but if all had been sold at the lowest price it would have netted $25.60 on a net investment of *nothing*—yes, 50 cents less than nothing. Many do better than this. I have done better myself since; but the money returns to an amateur bee-keeper, while a source of some satisfaction, are not the only satisfaction. Without any monetary reward the pleasure derived from a study of the energetic little pets is itself a reward as pleasing as the opening scenes of life. It is like the entering of an unexplored paradise. Any person not already a bee-keeper, who wants to add new zest to life, should keep bees.

Toledo, Ohio.

## UNCAPPING-KNIVES.

### Hot Knives Needed for Cold Thick Honey.

BY R. C. AIKIN.

I have just read Mr. Robinson's article, page 1374. He refers to the use of water and hot knives as foolishness, and he hits me, for I use just that sort of plan. A shallow pan hangs on the edge of the uncapping-box, with a large lamp or small oil-stove under it to supply the heat; and as fast as a knife gets cold it is dropped into the pan and another one picked up. It is true that some honey gets into the water, and by and by it becomes a syrup and goes into the vinegar-barrel, and fresh water is substituted.

Mr. Robinson refers to having sour honey. Almost any kind of knife would do to slice cappings from honey that is so thin and watery that it will sour, and in a hot country like Texas.

Here I can take honey right from the hives in July or August, and uncap it very nicely with a cold knife, but with a hot one it goes a whole lot slicker. I can also heat honey in a house, and when warmed, and the room kept at about 90 degrees, it may be uncapped fairly well with a cold knife, but much better with a hot one. And, what is more, when I come across a comb of slowly gathered well-ripened honey, even when just from the hive, it is difficult to cut it with a cold knife; and sometimes, if the comb is new, it will tear. It is a whole lot easier on one's wrist and shoulder to have a knife so it will slip through easily, and that is what the hot one does.

The argument that the edge of a knife is so thin that it cools instantly when in contact with the cold honey, thus frustating the desired end, is in part fallacious; but, even if true, the body of the knife is yet hot, and the cappings and the honey glide off, allowing a free and easy passage through.

But, Mr. Editor, there is not much to argue about. If the weather is hot, and the honey naturally thin and easy to cut, nothing is gained by heating—just use the knife cold. If the honey is a little cold, or inclined to be thick and gummy, the kind that puts a smile all over that face of Chalon Fowls when he gets a smack of it, then by all means use a hot knife, and save time and the shoulder and wrist ache.

EXTRACTORS.

Mr. Robinson speaks of not getting more than two-thirds of the honey out after frost. That statement needs qualifying to be clear. My first extractor was a home-made one for two combs of Langstroth size. I also used a Stanley reversible a very little. Then I used a little two-frame Root, non-reversible—one of those old-timers with a little horizontal crank on top so that one could speed it till it fairly sailed around. Since then I have used a four-frame reversible, made to order by the Root Co., the can a little bit larger than the standard four-frame, because I wished it to take in the American frame Now for results.

The pockets of my home-made machine were hung close to the center-shaft, and I think it was geared at least three to one. It was burned up, so I am guessing at the gear, but it jerked the honey out. So also does that little old two-frame Root machine, the pockets of which are also close to the center shaft, and the short crank set horizontally makes the basket spin at from 200 to 400 revolutions per minute. It is a high gear. My big four-frame reversible is geared two to one,* and has a rather long overhand crank. It is not effective except when the honey is quite warm, and it has to be cranked fast even then.

AN IMPROVEMENT IN EXTRACTORS SUGGESTED.

Over a big iron can and cast-iron cross-beam the gears make more noise than a railroad train, and in the house they make altogether *too much* noise. Can not those gears be made of hard wood or gutta-percha, or something less noisy? Possibly a wooden cross-arm would help to deaden the noise. I would suggest that the ratio of the gears be made greater so as to make a higher speed possible.

Loveland, Col.

[Experiments are being made with a special alloy for gears, with a view to reducing the noise, and at the same time insure a smoother running.—ED.]

STRAIGHT KNIFE PREFERRED.

Yes, by all odds the straight knife, even a 16-inch butcher-knife, is far ahead of the short crooked-shank knife, as there is no side strain on the hand, and a long sawing motion does far better work. The point should be crooked a little, or else a short curved knife be used for depressions. A short bevel on the under side of the knife is an improvement, as there is less friction.

Mechanic Falls, Me. E. P. CHURCHILL.

I always use a sharp cold knife for uncapping. I have never tried a hot knife.

Luce, Mich. WM. CRAIG.

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

BROOD DIES BECAUSE OF A LACK OF VITALITY ON THE PART OF THE QUEEN.

On page 1327 I notice that C. B. Fritts, of Niles, Mich., has had trouble with brood dying in a half-grown stage. We have been bothered in the past by the same trouble, and at times we find it in the darker bees. We feel very sure that a weakness in the queen is the cause, and a lack of proper vitality will show itself when the larva is about half grown—by death. We experimented variously along this line till we found a remedy, and then concluded we knew the cause. We removed all brood, put the queen on foundation, and fed sugar syrup. This reduced the death-rate somewhat, but did not cure all. Some hives would get over the trouble as the summer went on, but others would still hold on to the malady.

One thing we noticed which made us feel that a lack of vitality was the cause, was that, as the hives were filled up with syrup, the trouble

* All four-frame extractors are now geared three to one.—ED.

abated largely, and in some cases disappeared. We concluded that the trouble lay largely in the queens, and so went to killing the old queens and introducing yellow ones. This has in every case helped us out after the larvæ from the former queen were out of the cells.

Another point right here: The black bees with the least honey in the spring were the first to succumb to this dwindling of brood. Since then we have introduced the pollen-basket in the spring and fed eight stocks with syrup. The water-trough was also installed with a little salt added, and kept running the whole summer. Since then we have not been bothered as before. In fact, we do not expect this any more with yellow queens, early feeding, and watering in the spring; and we have long concluded that the trouble was due to a lack of vitality in the queen, either from weakened constitution or a lack of proper feeding in the spring. D. J. Blocher.

Pearl City, Ill.

### DROUTH DOES NOT HURT CLOVER; SPRING FROSTS DO MUCH DAMAGE.

Don't worry about the drouth, p. 1365. That hard-headed farmer is right. Here on the Manitoulin we had drouth. The soil is about four inches deep over limestone rock. It was wet in July, and not again until near the end of September, when we had another nice rain, followed by another about the end of October. Through all this dry weather clover was always green. Last year when the drouth was so severe that the ground had the appearance of being burned over, clover sprang up under a scorching sun before rain came. It is the spring frost heaving it out that we most dread.

By the way, will next season be wet or dry? I have often noticed a dry summer being followed by a light fall of snow the next winter, and a dry fall giving a dry spring. What have others seen?

Little Current, Ont. W. Moore.

### A DENTED QUEEN OF NO VALUE.

Last June I bought a select tested queen. In May I raised a queen from her queen-cells over the same colony, which hatched out May 29, 1908. To-day, July 5, there is no sign of brood, and the few eggs that may be found do not hatch. The queen has a dent at the end of her abdomen on the upper side. Sometimes she lays two or three eggs in one cell. The bees are queenless, but she is there just the same. Two queen-cells, which I overlooked, are still there, but there are no eggs in them. Harry Lebner.

Chicago, July 5.

[Very often, and generally, a dent in the side of a queen will do no harm; but in this case it is clearly evident it ruined her. All such queens should be replaced without delay.—Ed.]

### DOES PAPER OVER HIVES PREVENT MOISTURE FROM ESCAPING?

I winter my colonies in hives placed close together in a box 8 feet 4 inches long, made of half-inch shoe-box lumber. There is room for five inches of packing in front and rear, and the same on each end. Now, I propose to put building-paper around the row of hives, folding it over the top, and then laying newspapers over that. I would then add the packing material as before mentioned. Will the paper on top hold the moisture in the hive enough to make its use objectionable? There would be six inches of packing over the paper. J. H. Sprot.

Gosport, N. Y.

[There should be a cover which the bees have sealed down before the paper is put around the hive.—Ed.]

### FREEZING WEATHER IN SPRING HURTS CLOVER MORE THAN DROUTH IN FALL.

Your farmer friend was right as to the clovers. Here, as in the section you mentioned, the clovers are about the only green plant-life to be seen. If there is plenty of snow this winter, and not too much freezing and thawing in the spring, there will be no need of worrying about the clovers. The early part of spring, when there is much freezing and thawing, is the trying time on clover. Three weeks of this kind of weather will do more harm to the clover than three months of severe drouth. Thos. H. White.

Connersville, Ind., Nov. 30.

### BEES IN CHINA.

I do not know whether many bees are kept in China or not; but Mr. Wilder (Rev. George D. Wilder, missionary) has quite a number of hives; and the last time I was out there he got a stray swarm—a larger one than I had ever seen or heard of. The bees of China are, it seems to me, a little longer-bodied, and a little yellower than the Italians, and they are even more quiet and peaceful than they. Mr. Wilder goes among his and handles them bareheaded, and when I say bareheaded I mean *bare*, for, like old Uncle Ned,

> He has no hair on the top of his head—
> The place where the hair ought to grow.

And he never gets stung. They have honey as they want it, and very nice honey too.

Peking, China. D. I. Miner.

[The above extract from a letter was sent us by one of our subscribers.—Ed.]

### CONDITIONS IN A DAMP TROPICAL CLIMATE.

In this climate, for the past three months the thermometer has stood between 85 and 95 in the shade, with heavy rain nearly every day; every thing is damp. The paper on which I write I have to dry over a fire to prevent the ink running; dry clothes are simply impossible, and even one's boots get a blue mold on them in a single night. This will give some slight idea of the climate in this locality. The bees carry in quantities of pollen from maize, pumpkins, etc., but very little honey. The heavy rains wash the nectar out of the flowers. If any of your tropical correspondents living in the low lands would kindly mention their treatment of bees I should be very thankful. Frank W. Breach.

Chinipas, Chihuahua, Mexico

[This is in strong contrast with the weather we have been having in the United States, especially in this section. But nature has already begun to equalize, for we are getting heavy snows.—Ed.]

BEUHNE PLAN OF INTRODUCING; A GREETING FROM AUSTRALIA.

Among the numerous methods of introducing queens given in GLEANINGS I have never seen that originated by Mr. Beuhne, and illustrated some years ago in *The Australian Bee Bulletin.* He discovered, I believe, that, if strange bees were admitted into a queen-cage after all the attendants had been removed, they would not molest the imprisoned queen. Consequently a cage was constructed by him with a side opening covered with queen-excluding zinc through which the workers had access and became familiar with the new queen. They then assisted from the inside the workers on the outside of the cage in eating the way out for her through the candy.

Since this appeared I have always altered the Benton cage by making a side opening, covering it with a piece of queen-excluding zinc and thus introducing the queen after liberating her attendants. In my experience this method has never failed.

Mr. Beuhne's cage can also be used as a nursery cage by making a hole at one end sufficiently large to admit a ripe queen-cell.

Your subscribers will be grateful for that fine photo of our dear old friend (for such I esteem him) Dr. Miller. My regret is that you printed on the back of it, and so prevented its being framed without mutilating the number in which it appeared. The first portion of each successive number of GLEANINGS that I read is that under the head of Stray Straws. The pithy, humorous, and good-natured comments are always admirable, more particularly when the writer is having a "sly dig" at a certain well-known editor. I am pleased to be able to add my small quota of appreciation to the fine character of the dear old doctor.

Will you please give the botanical name of mammoth clover, page 931? It would aid considerably if this were always done when mentioning useful plants.

I have not written with a view to your publishing my letter, but more as an expression of good will from Australia to our brethren in the United States.

From a Victorian brother who sends hearty fraternal greetings. EDWIN COX.

Northwood, Victoria, Aus., Sept. 25.

[This plan of putting perforated zinc on introducing-cages for the purpose stated has been before given in these columns; but whether the idea at the time was copied from, friend Beuhne, we can not say.

It generally works well; but in the case of some cross or obstreperous colony the bees will sometimes attack the queen.

Mammoth clover is a variety of *Trifolium pratense.*

We certainly appreciate your hearty greetings. —ED.]

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WERE THE BEES DISEASED?

On page 1327, Nov. 1, C. B. Fritts wonders whether honey from poisonous plants killed the brood. Two years ago I was having about the same trouble, and I sent samples of brood to Dr. G. F. White, of Washington, D. C. He reported it to be what was commonly called black brood. The disease started near Dowagiac, Mich., some four or five years ago, and spread very rapidly in all directions and wiped out several small apiaries that were not treated. My apiary of 42 colonies was reduced to 11 colonies, and I got no surplus two years ago. A year ago I recombed all colonies, increasing them to 22. This last season I treated 5 colonies, and increased to 46 colonies, getting about 1500 lbs. of comb honey. I introduced Italian blood and pinched the black queens, and, so far as my yard is concerned, I am free from the disease. I have the best success with the Baldridge method of treatment. I am located east of Dowagiac where the disease started. As Mr. Fritts is west, I think it is possible that he has black brood in his apiary also. W. C. TAYLOR.

Decatur, Mich., Dec. 14.

[We know of no honey that kills brood. If brood dies it is due to starvation, cold, heat, or disease. All suspicious cases should be examined carefully, and if in doubt, it should be submitted to an expert.—ED.]

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QUERY AS TO INBREEDING OF BEES.

I desire to improve my bee stock both for honey-gathering qualities and color, and I wish to know the results of inbreeding to attain these qualifications. What I want is the experience of any one on the subject. I desire to produce a great honey-gathering strain of bees, queens of great laying powers, and at the same time improve the color in the direction of the goldens, but I don't want the golden bees. Furthermore I want gentleness in the bargain. Let us hear from the men who have had long experience along this line. T. P. ROBINSON.

Bartlett, Tex., Dec. 1

[Inbreeding, when intelligently practiced, is all right; indeed, by it our best breeds of cattle and horses are produced. When applied to bees we run up against the difficulty of controlling the selection of the drones.—ED.]

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SUPERS ON HIVES THROUGH THE WINTER.

Is it a good plan to leave supers on hives through the winter partly filled with honey or empty combs? M. R. REEVES.

Grenola, Kansas.

[The plan is all right so far as giving stores and wintering is concerned; but we would not advise it, for the reason that the sections and supers will be more or less soiled or travel-stained. Better give the stores in the form of brood-combs. —ED.]

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A CORRECTION.

On page 1372, Nov. 15, I am made to say that the eight-frame hive needs less care than the ten-frame hive. What I meant to say was that the eight-frame-size hive needs more constant care than the ten-frame hive. E. D. TOWNSEND.

Remus, Mich., Nov. 30.

# Our Homes

By A. I. Root

And God said, Let us make man in our own image, after our likeness.—Gen. 1:26.

How beautiful upon the mountains are the feet of him that bringeth good tidings, that publisheth peace; that bringeth good tidings of good, that publisheth salvation; that saith unto Zion, Thy God reigneth!—Isa. 52:7.

I want to talk to you this morning about feet—yes, beautiful feet; and I hope and pray that my talk may be helpful. One Sunday morning at that Bingham Sunday-school I told you about, in the hills of Northern Michigan, I asked the children, "How many of you would like to have beautiful hands? Please raise your hands, every one of you who would like to know how to make your hands *beautiful.*"

There was quite a little smiling, especially among the girls, but I think most of the hands went up, and then I added, "The recipe for making your hands beautiful I have just read in the *Sunday School Times* Now listen while I repeat it, for I want you to say it after me:

"Beautiful hands are those that do
Things that are useful, good, and true."

And then I had them repeat it after me again and again; and I have often thought of it since that time. Just this morning it occurred to me that if I could talk with that Sunday-school up there once more I would vary the couplet and put it this way:

Beautiful feet are those that do
Errands that are useful, good, and true.

Yesterday Dr. Creghan, a great missionary who has been around the world one or more times visiting different missionary stations all over the face of the earth, told us in his address that the whole wide world might rejoice at the *emancipation* of China. There are in China, as you may know, something like 400,000,000 people, while the whole United States can scarcely scrape up 80,000,000 all together. Well, China has been noted for her exclusiveness and superstition. A part of her foolish, silly, and *horrible* superstition has been, for *more than a thousand years past*, that women's feet should be small. You have all heard about it. The women of caste and fashion, at least, have their feet cramped from childhood, so that they are literally crippled—horribly crippled—so that some of them, at least, can not walk *at all*, and *millions* of them have been thus crippled during the last thousand years. We can scarcely contemplate or believe that it is possible, just because of the silly fashion, that the greater part of the world have been more or less *helpless cripples;* and it is the poor weak helpless *women* who have been, and are even now, crippled in that way. The boys and men can run and jump, and enjoy the use of their limbs; but the girls, at least after a certain age, are "crippled for life." There is no help for the older ones. All the doctors and all the treatment and all the asylums can never make their feet outgrow the consequences of this hideous mutilation. But the coming generation, thank God, are going to be delivered from this thralldom and cruelty. An edict has just been issued, if I am not mistaken, about it, not only permitting the girls and women of China to let their feet grow naturally, but *forbidding* them any longer from warping and imprisoning the toes that God made to be of service.

There is another emancipation for which we can thank God, and that is, that opium is also to be forbidden and debarred; and it is not "poor heathen China" that is so much to blame for the opium habit. The great British nation, first in civilization, or claims to be, has been forcing China to take up and keep up this horrid traffic. How is it possible that the world has lived so long and these things I have just mentioned have been *permitted* to go on unrebuked?

Well, the people of the United States need not congratulate themselves on being *so much* ahead of the rest of the world when they are obliged to confess that, until the present time, the awful liquor-traffic has been permitted to go on almost unmolested; yes, and even now there are people right around among us who claim we "can not pay our taxes" unless the saloon-keepers be permitted to make cripples and idiots of our innocent children almost *before* they are born.

Let us go back to the feet, the beautiful feet—the kind that "bring good tidings, that publish salvation, that say unto Zion, Thy God reigneth." While that great missionary was telling us about the crippled feet of the poor Chinese women, my mind instantly reverted to a fact that I have long been considering a protest against—the continuous crippling to a greater or less extent of the feet of the good people here in our own land, and especially the feet of the women folks. The toothpick-pointed shoe has largely gone out of fashion, yet I see some of them even yet; and I see that the tyrant Fashion inflicts upon us, and *demands* that we *shall* wear some that are not very much better. What brought this to my mind a few days ago was getting my eye on an advertisement in the *Ladies' Home Journal.* I like to look over the advertisements in any periodical. In fact, I often judge of the character and literary standing of a periodical more by the advertising than by any thing else. Well, I saw a picture that almost made me shout, "May the Lord be praised!" Here is the picture.

THE COWARD SHOE.

The Coward "Good-sense shoe" provides room for five active toes. Its pliant sole furnishes a natural foot-tread—a perfect-fitting shoe that supports ankle and arch, and prevents flat-foot. Economical in price and wear. For children, women, and men. Send for catalog. Mail orders filled. Sold nowhere else.

Address
JAMES S. COWARD,
268—274 Greenwich Street,
New York.

Well, what do you think of it? The man who has had the hardihood and courage to come out thus in a great journal and recommend a shoe that will let the feet grow and live (as God meant they should grow and live) this man is named *Coward.* Well, it is queer how our names sometimes fit us. Instead of being a coward he is a great warrior, and I should like to see him have a following—well, I would not stop at trifles, but I should like to see him have a following of 400,000,000 or more. Of course, I can not see

it before I die; but may God grant, when the time shall come, that *all* the boys and girls on the face of the earth, and *men* and *women*, *shall* adopt some sort of footwear that will let their feet grow as naturally as their hands and their fingers grow.

When I thought of taking up this subject I made up my mind that I would ask a great lot of people to let me take a look at their bare feet. As I have reason to believe that womenkind are the greatest sufferers I mentally decided that I would go to every one of my daughters—yes, and granddaughters—and ask them to take off their shoes and stockings, and let me see their feet. Yes, and I decided to go to my sister, too, and to some other women where I felt sufficiently well acquainted, and tell them I wanted to take a look at their bare feet.* Do you know why I did not do it? It was because I knew from past experience that I could not and must not put an account of it in these Home papers. Dear friends, I have written at least one Home paper that was ruled out by my sons and daughters, and by Mrs. Root While they admitted it was a subject that was sadly in need of a tremendous reform, they decided it belonged rather to the province of a medical journal than in my department of GLEANINGS. I still think it ought to have been allowed to appear; but I hope I shall never get to be so contrary and stubborn, even in my old age, that I can not listen and give way to the advice and counsel of the younger ones.† I wonder how many of our women readers would be willing to wear or at least go out in public with a shoe shaped like the one in the picture. I have suggested the same thing in years past, but I have been met right and left with the reply that it would never do to adopt any thing so entirely out of fashion. Good women—yes, some among the great reformers—say that one who goes out in public must conform, at least to *some* extent, to the prevailing fashions, no matter how ridiculous or hideous the fashion may be. A few years ago women were killing themselves by tight lacing, and for a time the doctors' protests and warnings seemed to be of but little avail. But a reform has come—yes, a great reform—even though there are still a few who go about with wasplike waists. When some of these friends of mine with their painfully small waists argued that it was their natural size, and that they were not cramped at all, I replied, "Then for God's sake wrap something around you and make *believe* you are like other people, even if God did not make you that way." I think T. B. Terry's teachings have done much to encourage the use of loose clothing. And, by the way, T. B. Terry, I want *you* to help me in this crusade for natural feet. Yes, I want every minister of the gospel to help; and I know the good honest physicians and family doctors will help, and will tell you that I am right.

Now, I have not made the examination I have talked about so as to prove what I say; but I want to ask every father and mother, whose eyes are on these pages, to take particular notice just now of the cramped and deformed feet belonging to your wives and daughters. If there is not any thing of the kind to be *seen* among barefooted women, then the world is better off than I supposed. Let me give you a little of my experience.

In my boyhood I went barefoot just as long as custom would permit, and I have gone barefoot a good deal of my life when circumstances permitted. I greatly enjoy, even now, wading through the grass in the morning before I put on my shoes.* Several times in my life I have tried to conform to fashion; but *my* toes made such a protest that I wore my Sunday shoes only when I had to go among people. If you will look at the picture I have given you, or look at a child's foot, especially that of a child going barefoot, or a baby's foot, you will get a glimpse of the way God made our feet. Do you say the natural foot is not beautiful in an artistic sense? Well, just take a look at a baby's foot before it has been cramped out of shape by fashionable shoes. Did you ever see any thing prettier than those pink toes, the graceful curves, the arched instep, and the rounded heel? Well, this baby's foot, and, in fact, every other natural foot, is somewhat three-cornered—the heel at one corner, the big toe at another, and the little toe is the third corner. Well, in the attempt to make my left foot conform to fashion I cramped it in the corner just back of the little toe until a serious corn or chilblain, or the two combined, set in. I finally went to our family physician about it. Said I, "Doctor, I do not know whether you want to undertake to take care of the feet or a sore toe; but I should like your advice, any way."

He replied, "Mr. Root, I am always glad to do *any thing* to alleviate human suffering. My business in life is that, and I enjoy it."

After he looked at my foot he told me I would have to get an old boot or shoe, and cut out a piece of the leather clear around that sore spot; and I would have to go around that way for three or four weeks; for unless I did, something serious might happen. He said it was owing to a lack of ventilation in my shoe. Then he went with

* When I first thought of taking up this subject, and was discussing it with my wife, she positively forbade my saying any thing about *her* feet. But I am going to add this much:

Mrs. Root, even when a girl, was remarkably active, and full of life. She could run and jump, and even climb trees; and even now, when she is pretty close on to threescore and ten, when she is in a hurry with her work she can skip about almost as quickly as any of her children or grandchildren. When our good friend O. O. Poppleton was here a few days ago he said something like this: "Brother Root, it is really remarkable to see a woman as well along in years as your wife fly about in the way she does when she wants to accomplish a good many things quickly."

Brother Poppleton was right about it. And now just contemplate, if you choose, torturing and maiming such a bright good woman by *obliging* her to conform to fashion! I have seen her come up the doorsteps with a look of pain on her dear face that fairly touched my heart as she hurried to the cupboard near her bed and jerked off her fashionable shoes and replaced them with the easy cloth ones that she wears about in her every-day work. There, I have told my story, but I have not said a word about her feet, after all, have I? I think I told you some time ago that, when I was courting Mrs. Root, I "loved the very ground she trod on;" and I now say, as I come down to old age, I do not reverence that same "ground" a bit less.

† Perhaps I should add right here that, since that paper of mine was thrown out (the subject was the need of better toilet rooms or closets for the home), there has been a wonderful reform—one almost worldwide. It seems to me I was a little ahead of the times—that is all.

* So far I have not said any thing about caring for the feet so as to keep them natural and healthy. Wading in the dewy grass is nature's cure, and perhaps the best thing in the world. In the winter time (when there is no grass) the feet should not only be bathed often, but soaked thoroughly so as to cleanse them from every thing that can be removed by the brush or towel. When the feet are disposed to get dry, hard, and painful, I haver never found any thing better than a little vaseline. I suppose the various foot-powders so much advertised may be helpful for sweaty feet; but I have never found them by any means equal to the vaseline.

me to the shoestore and picked out a pair of low shoes that laced almost down to my toes. He said my feet demanded ventilation, and would have to have it He said that many people are absolutely obliged to let their feet have air to breathe, as well as to let the mouth and lungs have pure air. I think I have mentioned before that Abraham Lincoln used to do his writing mostly in his stocking feet so as to give his feet a chance to "breathe." May God bless the memory of the great and good man who taught us so many useful lessons! Well, I even went to church with a hole in my shoe. I think I put some ink on my stocking so as to make it as near the color of the shoe as possible, and in a short time that foot got well; but I have worn loose shoes ever since. While building up that little Sunday-school early in the spring in Northern Michigan I did a great deal of traveling one Sunday morning. I canvassed the whole neighborhood, and secured a big Sunday-school that very first morning; but in so doing, with my Sunday shoes on, that particular corner of my left foot got to be so bad that, after the Sunday-school was over, I pulled off my new fashionable shoe and walked home with that foot bare. It still burned and pained me so that I purposely walked in a snowdrift beside the road; and I finally put that feverish, painful foot into snow and water and kept it there. The fever in that foot was so great that I kept it in cold water a great part of the afternoon; but after putting on my loose open shoes I had no more trouble during the week. That was Nature's protest against a horrible, unreasonable, fashionable shoe. I suspect there are more than one of you who have gone through a similar experience.

Just now I have in my possession a very *nice-looking* pair of patent-leather shoes. I got patent leather because one of my boys suggested that it would save me the fuss and bother of shining my shoes up every little while. Well, I have had them four or five years. I can wear them to church, and look like other folks; but I am always happy when I get home and can put on my old shoes that are out of fashion

Now, to illustrate, suppose I am called on to address a Sunday-school, which is generally the time I take for my afternoon nap, just a little after dinner time also; then to add to the rest of it, those pinching shoes make me feel cross when I need the greatest spirituality.* Of course, I *can* shine up my old ungainly shoes, something like that in the picture, and stand up on the platform before the audience. Now, here is the problem: When we are called on to speak in public, we older ones, of course, do not need to be clear up in fashion in our attire; but we should look decent and reasonably respectable, especially if we wish to have our words have weight, and count; so I do not know but it is a Christian duty to conform, at least to a certain extent, to fashion; but the time has come, dear friends, when a great lot of us should band together and declare that we will no longer submit to the tyrant Fashion, especially when this tyrant violates all rules of good sense and reason. Has the time not come when we should not only cheer and encourage the poor heathen Chinee, but go a little further and take the lesson home? Who is there among us who can not give three cheers for the man who has brought this new shoe, and even dares to advertise it in the *Ladies' Home Journal* — the man who is not a coward in any sense of the word, but who is a brave general to come out thus boldly and defy the demands of fashion? I do not remember now any thing about the price of his shoes; but I presume it is no more than is usually charged for other good shoes. It may cost a little to get them by express. But how much is it worth to you to have good healthy feet — feet that will enable you to enjoy life and to thank God, and, may be, walk *a mile further** each day than you would with the old-fashioned ridiculous kind? May God be praised that I still have the full use of my eyesight; that I have also the full use of both hands; and last, but not least, that I can run and jump, and go a mile almost as quickly and easily as any of my children or grandchildren; and may God speed the day when our greatest care, while we are permitted to be here on earth, will be to look after, study into, and take care of these bodies of ours that our opening text says were created in God's own image; and then may the great Father above help us to take care of the *feet* he has given us, including the toes, that we may preserve them, not only in the way of keeping them beautiful but useful, that we may, with their help, spread the "glad tidings" and "publish salvation," not only throughout China and Japan, but over this whole wide world, *including* the United States of America.

* Suppose, for instance, that we wish to impress on the school the beauty of the great promise of the little text as follows: "Thou wilt keep him in perfect peace whose mind is stayed on thee;" and suppose, too, while you are striving to add emphasis to the text, those shoes are pinching your corns until you are in any thing but a Christianlike frame of mind!

* "And whosoever shall compel thee to go a mile, go with him twain."

# POULTRY DEPARTMENT

## THE POULTRY-HOUSE TENT AT STORRS, CT.; MORE ABOUT IT.

After my article on page 1273, Oct. 15, was printed, the editor of that beautiful and useful publication, *Suburban Life*, called my attention to the fact that in their issue for last May they gave a picture of the very tent that I was so much taken up with; and they have also kindly loaned me the cut so I can present it to our readers. See page 1508. Here is what they have to say about it:

There is much discussion nowadays among poultry-men in regard to poultry-houses which are open at one side, or which have windows without glass, even during the coldest weather; and a number of poultry-raisers are using this plan with success. For testing the practicability of the cold-air method, Professor Graham erected a tent made of ordinary duck, costing about six dollars. He placed a roost and nests in this tent, and made it the home of a small flock of White Leghorns — a variety of birds, as is well known, having unusually large combs. These birds have lived in this tent all through the past winter, and not one of them has had its comb even touched by frost, while the flock have laid fairly well. It is a fact, strange as it may seem, that the thermometer has shown the tent to be warmer than some of the regular boarded houses.

My impression is that, during zero weather, they were in the habit of banking up snow around

the tent in order to cut off drafts and cold winds. I notice that the chickens (like my poor self) can stand cold very well if there is not a breeze, or, worse still, a strong wind; therefore these cloth houses ought to be as nearly air-tight as possible, for plenty of air percolates slowly through the cloth at all times and under all circumstances. Have the opening made for access so it will shut up as nearly air-tight, or, rather, wind-tight, as possible. If an opening is left for the chickens to go out and in at pleasure, this too should be closed up absolutely tight during zero weather. Now, in order to prevent this opening admitting a draft of cold winds I would suggest having an underground tunnel, and I have already used such a device quite satisfactorily. To do this your tent should be on sloping ground, so no water can by any possibility collect in their tunnel. Some years ago I had such a tunnel leading from the poultry-house to a string of cold-frames, and the fowls greatly enjoyed themselves in winter weather, scratching and dusting under the glass sashes. Now, please be sure, if you use glass at all, to give the chickens the privilege of running out from under the glass whenever it becomes too warm. If you do not do this, the overheating during the middle of the day, even in winter, may do the chickens positive harm. My impression is that cloth instead of glass would be much better for poultry the year round, and we should be sure that even the cloth tent does not get too warm inside when we have a spell of warm weather in winter.

In closing let me remark that, if you have not seen *Suburban Life*, you should at least get a sample copy. It is one of the most beautiful works of art that our nation or any other has ever submitted to the people. The pictures alone are worth its price—25 cents for a sample copy. For the address, see their advertisement in our last issue.

While on this subject a newspaper clipping was sent me by some friend, so I can not give credit to the paper from which it was taken. Here it is:

POULTRY-HOUSE IDEAS.

A poultry-house should not be built on the plan of a dwelling-house. It is impossible to retain the heat in the house by the exclusion of fresh air, and have the house dry, without the use of artificial heat. At the Maine experiment station it was found that hens confined in a cold or curtain-front house consumed 15 per cent more food than a like number kept in a warmed house when the temperature was just above freezing. It took four tons of coal to heat the warmed house, which cost considerably more than the extra feed. The egg yield in the two houses was about equal; but the eggs from the hens in the cold houses hatched by far the best.

It is very true that, under the circumstances mentioned, we had better give the chickens an extra amount of food rather than buy *coal* for fuel. But I feel sure that, if the cloth tent is properly fixed and managed, we can save a large part of the "fifteen per cent" and still get the same number of eggs and the best kind of fertile eggs.

---

"NOTHING TO DO BUT GATHER THE EGGS."

The above quotation is not exactly as it appears in Edgar Briggs' new book, "Profits in Poultry-keeping," but it comes pretty near it. What we do read is this: After having described the automatic feed-boxes, those that will contain enough to last the fowls a week or two, he says, "If your plant is built on a stream, and inclosed with a good wire-netting fence, all the work you have to do during the week is to gather your eggs every night."

Whew! wouldn't that be a bonanza? "nothing to do but gather the eggs!" Of course, at the end of one or two weeks you would have to take a horse and haul around grain to replenish the hoppers; but if the hens really laid eggs enough to make a profit after paying for their feed, what a gold mine we should have! for when you get one pen in running order you could get right at it and establish a second pen, then a third and a fourth, and so on, *ad libitum*, *ad infinitum*. Brother Briggs admits, however, that you would get a better profit by bestowing a little more labor besides gathering the eggs; and the next chapter describes this matter and tells how to get the most profit by the least expenditure of labor.

Of course, this is an old story that has been gone over again and again, and my poultry experiments down in Florida were made particularly with that end in view, to see how near I could make the whole thing automatic and still have it pay a profit. Well, it did very well when I was there to keep an eye on things; but when I came away and turned over my poultry-ranch, with something like a hundred laying hens, to my good friend and neighbor E. B. Rood, then came the test. Suppose we grant, for illustration, that a poultry-ranch of moderate size could be so managed that there would be practically nothing to do but to gather the eggs daily, and fill up the hoppers, say once a week; can we *still* make the institution pay if we do not live on the poultry-farm, but employ somebody to gather the eggs and keep the chickens supplied with food? Well, with this end in view I left my chickens with neighbor Rood. Several times during the summer I have sent him a postal card asking him how the speculation turned out. For a little time he said the chickens were doing very well. Pretty soon there was no report; and finally when I urged a little the following came:

*Dear Mr. Root:*—I am very sorry to be compelled to state to you that the chickens are not laying as well as I think you will get them to after you come down. In fact, I have about decided that chickens are social creatures, and do better when there is some one about with whom they can commune once in a while. This may not be true of *all* chickens, but it seems to be true of Mr. A. I. Root's chickens at least. Possibly they were brought up under such social surroundings that society is necessary for them. I know that their food has not enough variety, and I thought that I would feed them ground meat, but after trying it for a while I got lazy and quit. You learned long ago that a lazy man had better leave chickens alone. Eggs are 30 cts. a dozen. I get from five to twenty a day from both yours and mine—as many some days from mine as from yours. I hope to have lots of lettuce, cabbage, and cauliflower for them after a while, and then they may do better. Your little rubber-tree is a beauty, and nearly every thing has done well. We shall be glad to see you. E. B. ROOD.

Bradentown, Fla., Oct. 5.

Now, friends, there is a big moral right here. It looks to me as if chickens really do crave the companionship of human beings. They want to be petted and complimented occasionally. They need to be in close touch with somebody who knows them by name and loves them. Do you know what the dear Shepherd said about the sheep? Well, it is true of chickens also. By the way, Mrs. Root thinks the idea of having nothing to do but gather the eggs is a big joke; and she says if any of the readers of GLEANINGS think *I* had nothing to do but gather my eggs down in Florida they ought to have been around when I

was trying to "gather" my surplus young roosters. Of course, I got 20 cts. per lb. for them; but she said she was a little afraid it would wear me out, mentally and bodily, in getting those young roosters in a cage to send to market. You see, down there they roost away up in the pine-trees; and my flock of sixty White Leghorns here in Ohio have been roosting up in the evergreens which surround our apiary. I succeeded in getting them out of the evergreens and driving them into the orchard; but just now all but about a dozen positively insist on roosting in a big apple-tree that overshadows the poultry-house, instead of staying indoors. If any of our readers can tell me of a quick way of getting these chickens out of the tree and into a cloth-curtain poultry-house, say along about Thanksgiving time, I shall be greatly obliged to them.*

Now, I do believe we can have things so arranged that the amount of real work needed to care for a flock of fifty or a hundred chickens would not amount to much; but when somebody tries to persuade you that they can be so managed that you will have comparatively "nothing to do but gather the eggs," do not be too ready to accept the statement. When it comes to setting hens or running an incubator, and caring for the brooder, to say nothing of hawks and other "varmints," I think you will be likely to have exercise enough to give you an appetite about every mealtime. At the same time, when your fowls are carefully fenced in with a good high poultry-netting, so as to make sure that no live animals can crawl or burrow under it, with large-sized feed-hoppers, feed and shelter, and abundance of green food, you can so manage that there will be a good many days when there will be but little to do but "gather the eggs."

# TEMPERANCE

### A JUG OF WHISKY FOR A CHRISTMAS PRESENT.

On page 708, June 1, I told you of a tragedy that took place near where I started a Sunday-school, in Osprey, Fla. There was one family in the neighborhood that had had a great deal of trouble. The poor wife had been insane, and had been in an asylum; but she had come home so much better that she was taking care of the children, fixing them up, and finally for the first time, perhaps, in many years, the father and mother and children all came out to a Christmas-tree festival on Christmas eve. They felt bright and happy, and all the neighbors felt glad to see them out once more among folks, and especially at a gathering of that kind. Besides the insanity trouble, the poor mother was stone deaf —she could not hear a word. Well, this man was in the employ of a millionaire brewer. He may not have been quite a millionaire, but he was wealthy. He had bought a place near the Sunday-school chapel, and employed the man of whom I have been speaking as laborer. Just before the holidays he gave all of his helpers a *jug of whisky* for a *Christmas present.* I think the man who received the whisky did not drink; but a couple of other fellows who did drink found out about it, went to his home some time after midnight, rapped on the door, and demanded that jug of whisky. Of course, the poor wife did not *hear* any of the racket. The first intimation she had of what was going on was to find her husband's dead body out in front of their home. He was shot because he would not hand over that whisky to a couple of men who were already crazed by drink until they were ready to commit murder or do any thing else. This poor woman (who had at the time a nursing babe) became mentally unhinged again, and who can wonder? They decided she was not fit to take care of her babe, but she declared she would have it, and they had to confine her by main strength to keep her quiet. A little time after that, this wealthy brewer, who gave the whisky as a Christmas present, *committed suicide*, and I have just read in the Manatee River *Journal* that the two men who committed the murder are sentenced to go to the penitentiary for life. Well, this whole thing was again brought to mind by a glaring advertisement of "STRAIGHT KENTUCKY WHISKY FOR CHRISTMAS, 1908." Now, friends, what do *you* think of the man or men who are so far lost to all sense of Christianity, honor, and decency, as to suggest *a jug of whisky for a Christmas present?*

*Later:—I finally got them all safely "corraled," during a big snowstorm.

# HEALTH NOTES

### HEALTH, HOME, AND TEMPERANCE.

*Mr. Root:*—I will say, in reference to your little editorial note in last issue of GLEANINGS, that I think your misgivings as to the acceptability of your Home and Temperance Departments are entirely unfounded. These are to me a delightful inspiration and strength, and are undoubtedly the same to thousands of your readers. So far as I am concerned, if you and Mr. Terry keep to your purpose, and live to be centenarians, I hope you will both remain active in your literary pursuits and contributions to the cause of health and temperance. In your food hints, I should be pleased to have your views as to the value of honey for food.

Salem, Ohio, Nov. 12. T. S. TEAS.

Thanks, friend T. Regarding honey of late years, as I have told you, I find my health very much better when I use little or no sweets of any kind; and I have to be especially careful about cane sugar. A very little well-ripened honey, better still sterilizing it by setting the dish in the oven until the honey is very thick, seems to be all right, say perhaps a few spoonfuls with my rolled wheat. Milk and honey are both *uncooked* foods. I have mentioned before that young people, especially growing children, no doubt require more sweets than grown-up people, especially elderly ones. In the same way, any one who is doing muscular work, and especially outdoors, and more especially still in cool weather, needs sweets of some kind in the same way the Esquimaux need a great amount of fat to furnish fuel for the body. Where honey seems to agree with you nicely, by all means use it, and thank God for it. But I think it is well for us all to be careful about taking our honey or any other dessert after we have made a good square meal. The new diseases that are constantly coming up to afflict our people are, without doubt, caused by overloading our digestive apparatus; and this is often done through carelessness or ignorance. Look out, and beware of "clogging the machinery."

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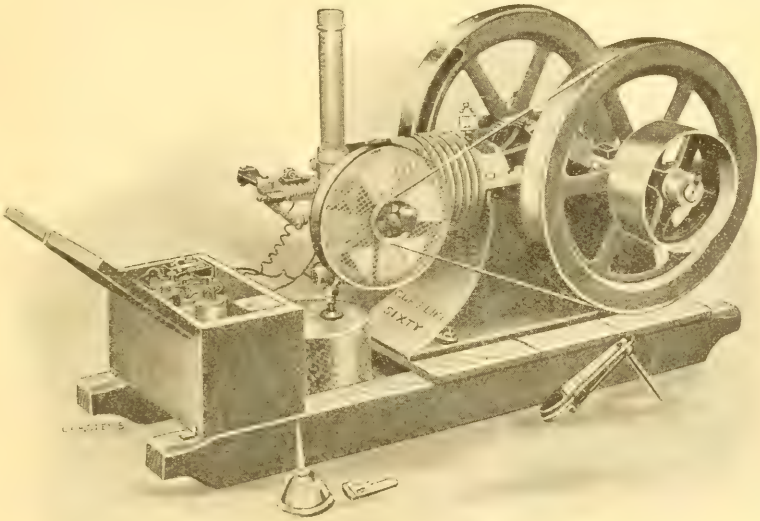


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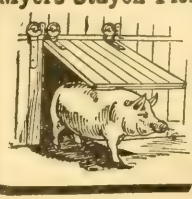

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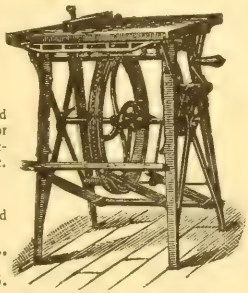

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Apple 7c. Peach 5c. Plum 10c Cherry 17c. Best quality, good bearers, grafted stock, not seedlings. Concord Grapes $2.50 per hundred. Forest Tree Seedlings $1.00 per 1,000 up. We pay the fr't. We have a complete line of Vegetable, Flower and Farm Seeds. Large catalog free.

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Carl Sonderegger, Prop.

**German Nurseries**
**Box 143 Beatrice, Neb.**



## The FARMERS' GARDEN

A Seed Drill and Wheel Hoe is indispensable—not only in a village garden but on largest farms.

Farmers should grow all manner of vegetables and "live on the fat of the land." Should provide succulent roots for Cattle, Swine, Poultry, and save high priced feed stuff. Great labor saving tools of special value for the home as well as the market garden. Send for free book.

SAVE HIRED HELP

Only One of Many Iron Age Tools

IRON AGE

No. 1 Double or Single Wheel Hoe

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## Mend Your Own HARNESS

SEE THAT LOOP

Put the money you would pay the repair man in your own pocket and use Myers Lock Stitch Awl instead. It stitches like a sewing machine and will mend harness, saddles, fur coats, robes, shoes, gloves, canvas, carpets, etc. Something you and your neighbors need every day and costs only $1.00 prepaid. You can secure the agency in your locality and make money. One agent sold 100 in 4 days. Write for booklet C

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## 15 Cents a Rod

For a 22-inch Hog Fence; 16c for 26-inch; 19c for 31-inch; 22 1-2c for 34-inch; 27c for a 47-inch Farm Fence. 50-inch Poultry Fence 37c. Lowest prices ever made. **Sold on 30 days trial.** Catalog free. Write for it today.

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Box 21, MUNCIE, IND.



## FENCE *Strongest Made*

Made of **High Carbon Double Strength** Coiled Wire. **Heavily Galvanized** to prevent rust. Have **no agents.** Sell at **factory prices on 30 days' free trial.** We pay **all freight.** 37 heights of farm and poultry fence. **Catalog Free.**

**COILED SPRING FENCE CO.**
Box 101 Winchester, Indiana.



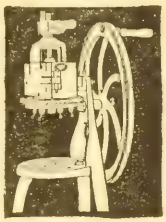
## 48 IN. FENCE a rod 29c

Best high carbon coiled steel wire. Easy to stretch over hills and hollows. **FREE** Catalog—fences, tools. Buy from factory at wholesale prices. Write today to Box 88

MASON FENCE CO., LEESBURG, O.

# You Can Get More Eggs

## And Save Feed Bills.



GREEN BONE fed raw gives fowls the food they need to take the place of bugs and worms. It has more than four times the egg making value of grain: is rich in protein and other elements that make more eggs, fertile eggs, livelier chicks, earlier broilers, heavier fowls. Cut it with

**MANN'S** Latest Model **Bone Cutter**

Turns easily; cuts rapidly; never clogs: automatically adjusts itself to any one's strength. Cuts all bone with all adhering meat and gristle.

**Ten Days Free Trial** We ask no money until you try the machine. If not satisfied, return at our expense. Write for catalogue.

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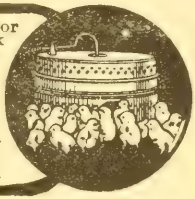
**$7.50**

Complete 50-egg all metal Hatching & Brooding plant for only $7.50. The only machine made that does the work in the natural way. Once filling the lamp hatches the eggs and broods the chicks

## METAL MOTHERS



Our new system $1.00 Brooder works to perfection. No danger of fire, overheating or chilling the chickens. Let us tell you about our new way of keeping poultry to get the largest profits. Catalogue free.

**Cycle Hatcher Co., 223 Wm. St., Elmira, N. Y.**

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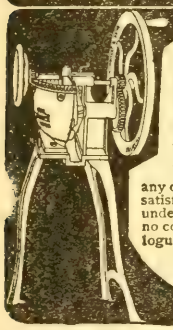
## WINTER EGGS



Feed cut green bone; save half your grain and double your egg yield. The

**Humphrey**

**Green Bone & Vegetable Cutter,**

the only open hopper machine, is guaranteed to cut more bone, with less labor and in less time than any other. Money back if you are not satisfied. It's the one hand cutter; feed under operator's control at all times; no complicated parts. Send for catalogue and special **Trial Offer.**

**HUMPHREY,**
**Mine St. Factory,**
**Joliet, Ill.**

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## INCUBATORS Hot Air or Hot Water

**MILLER'S IDEALS**

**The Lowest Priced Standard Machines.** Certain results instead of experiments. Send for great, free book, **"Poultry for Profit."** Finely illustrated and covers every poultry topic. Worth dollars but mailed free, postpaid. Don't wait—SEND NOW to

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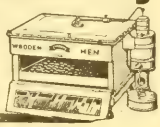
## Hatch Chickens by Steam

Stahl **"Wooden Hen"** and **"Excelsior"** **Incubators** assure big hatches. Well-built, reliable, practical—thousands in use. Catalogue free.

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**45 Varieties** of practical and fancy pure bred poultry. Beautiful, hardy vigorous. Largest, most successful poultry-farm. Thousands to choose from. Big **Profitable Poultry** book tells all about it. Quotes low prices on fowls, eggs, incubators, and supplies. Sent for 4 cents.

**Berry's Poultry Farm, Box 153 Clarinda, Ia.**

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## World's Best Incubator

Has stood all tests in all climates for 15 years. Don't experiment, get certainty. Get a

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Incubator and Brooder. Anybody can operate them and make money. Let us prove it to you. Booklet, "Proper Care and Feeding of Chicks, Ducks and Turkeys," 10c. Poultry paper, 1 year, 10c. Write for free catalog.

**Des Moines Incubator Co., 190 2nd St., Des Moines, Ia.**

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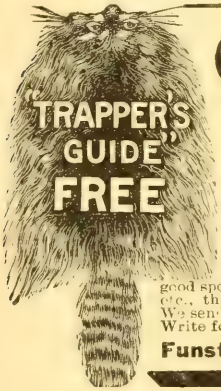


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You get the highest prices and the quickest returns when you ship your furs to Funsten. Coon, mink, skunk, muskrat, marten, fox, wolf, lynx and other furs are valuable. We receive and sell more furs direct from trapping sections than any house in the world. The biggest American and foreign buyers are represented at our daily sales, which run from $25,000.00 to $50,000.00 a day. The fierce competition among buyers at our big sales enables us to get higher prices than anyone else. That's why we can send you the most money for your furs, and send it quicker.

**Big Money in Trapping** While work on the farm is slack, do some trapping. It's good sport and pays big profits. We furnish trapping outfits at cost. Traps, Baits, etc., that make trapping easy. Write today for Catalog B and full particulars. We send our New Trappers' Guide, Fur Market Reports and Shipping Tags FREE. Write for them **today.** Act **now,** for this is **your** big money-making opportunity!

**Funsten Bros. & Co., 308 Elm Street, St. Louis, Mo.**

**$1.00** **All** **$1.00**

# For a Dollar.

**The SOUTHERN FRUIT GROWER is the best paper I have ever read. L. H. Kessler, Agawam, Mass.**

I have been a regular subscriber to the Southern Fruit Grower from almost its beginning, and enjoy it very much.—J. B. Willis, Spartanburg, S. C.

I am nearly 80 years old, still I do not feel like being without the Southern Fruit Grower.—A. Bornstein, Cedar Hill, Tenn.

These are only a few of thousands of subscribers who tell us what they think of the Southern Fruit Grower after reading it regularly for a number of years. If you have an orchard or garden, we know it will please you just as well as it does others. It will **save you money,** and many single issues are worth more than 50 cents, the subscription price for a year; but we want your subscription for three years—$1.00. Send us the dollar at once and we will send you, absolutely free, three of the following ferns and include a year's subscription to the Household Journal:

**DESCRIPTION OF FERNS:**

**BOSTON FERN.**—The most popular fern. For hanging-baskets or single specimens it is certainly fine; will do better with the amateur than any other variety.

**OSTRICH-PLUME FERN.**—The fronds grow in the most luxuriant manner, each pinna forms a perfect miniature frond, giving it a feathery appearance.

**NEPHROLEPIS WHITMANII.**—An improvement in the "Elegantissima," with still more gracefully divided pinnæ, giving the whole plant an airy lace-like appearance.

SEND IN YOUR ORDER TO-DAY.

**The Southern Fruit Grower, Dept. B, Chattanooga, Tenn.**



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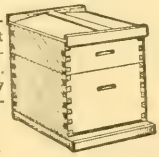
**Everything for Bees**

We manufacture the latest approved supplies and sell direct at factory prices. We're old-time bee people in a bee country. We know your needs. **Early order discounts.** Send for catalog. Don't buy till it comes.



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10 Almage St., Higginsville, Mo.
1699 Sou. 13th St., Omaha, Neb.



**1884** **1908**

Root's Goods always in stock

# FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . .

**J. M. Jenkins**

**Wetumpka, : : Alabama**



# The Guide To Nature

**AN ILLUSTRATED MONTHLY MAGAZINE FOR ADULTS**

Devoted to commonplace nature with uncommon interest.

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**Edward F. Bigelow, Managing Ed.**

For people who see and think.

For people who believe that this is a beautiful and interesting world.

For all students and lovers of nature.

**SUBSCRIPTION, $1.50 PER YEAR.**

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Every number is worth more than the price asked, costs more—therefore we can not distribute free.

# HILTON'S Strain of Bees and What They Did

*Dear Friend Hilton:*—The two three-frame nuclei I received of you May 21 were received in fine condition, and the red-clover queens proved themselves worthy of the name. I never saw finer or gentler bees. They were transferred to ten-frame hives and full sheets of foundation. I now have four strong colonies, with plenty of stores for winter, and have taken 195 lbs. of fine extracted honey, mostly clover. I want two more nuclei for next spring delivery, and my neighbor wants another. You may use this letter or any part of it as you choose.

Gratefully yours,
Rhinelander, Wis., Sept. 14, 1908. G. C. CHASE.

In addition to the above I have sold friend Chase about $200 worth of ROOT GOODS, which deserve some credit for the above results—the best of every thing is none too good. ROOT'S GOODS and GLEANINGS helped. If you are not taking GLEANINGS, WHY NOT? For an order of $10.00 before Jan. 1 I will give GLEANINGS one year; $20.00, two years; $30.00, three years; or you may have GLEANINGS from now to the end of 1909 for $1.00; two years for $1.50; three years for $2.00. SEND FOR MY 40-PAGE CATALOG. CASH FOR BEESWAX, or will exchange goods for it.

**GEO. E. HILTON**
**FREMONT, MICH.**

# WESTERN BEE-KEEPERS

**will SAVE TIME and FREIGHT by ordering ROOT'S GOODS from Des Moines, Iowa.**

**A Full Line of**

# Shipping - cases

**Honey-extractors,**
**and all other seasonable goods now on hand. . .**

We are also prepared to supply goods for next season's use at special discounts.
Estimates cheerfully given. Send us a list of your wants and get our net prices by letter.

**JOS. NYSEWANDER**
**565-7 W. 7th Street, Des Moines, Iowa**

# Merry Christmas

We're talking to the wives and daughters in the families where GLEANINGS goes. Why don't you get *him* something that will suit him better than any thing else for Christmas, and that is to renew his subscription to GLEANINGS or get him a copy of the new 1908 edition of the A B C and X Y Z of Bee Culture?

**Offer No. 1**

Gleanings one year, and a bee-veil with a silk tulle front, $1.15.

**Offer No. 2**

A B C and X Y Z of Bee Culture, 1908 edition, and bee-veil, both postpaid, $1.65.

**Offer No. 3**

Gleanings one year, A B C and X Y Z of Bee Culture, and bee-veil, all postpaid, $2.40.

**EXTRA**

The Christmas number of GLEANINGS, and all of 1909 are included.

We will mail to separate addresses parts of the same offer.

When requested we will send a personal letter to any address announcing the offer as a Christmas gift, and giving the name of the giver.

We will mail so as to reach destination as near Christmas Day as possible.

No matter where you are located in the United States, you can take advantage of these offers.

**M. H. Hunt & Son**
**Lansing, Michigan**

# New Goods for 1909

## Good News for the Southwestern Bee-keeper

The strenuous season of 1908 left our stock of bee-supplies in a depleted condition. We have now replenished our stock with large shipments of the finest bee-goods ever seen in the Southwest. These are

## Root's Goods Exclusively

We have not dared to experiment with any other line of bee-supplies; and from the looks of our new goods we shall never need to. They are "as fine as silk." We should be glad if our customers would come and see them. You will be pleased with the best ever. Come along and enjoy a day in San Antonio, picking out what you want while your wife goes shopping. Seeing is believing, and we would far rather hear you puff our goods than do it ourselves. But we honestly believe we have not only the largest line of bee-supplies in Texas, but also, by far, the best in quality.

## Order Now

Please don't wait till the last hour before ordering, when we are buried out of sight with orders all wanted the same day we receive them. Last spring we lost a great deal of sleep on account of being swamped with orders, and we had to work far into the night to catch up. Some nights we worked all night long. We know there are many who can just as well order right now, and save both themselves and us considerable anxiety during the busy season.

Early-order discount—4 per cent for January; 3 per cent for February.

## Catalogs Free on Demand

With our catalog in hand you can pick out the various items required, at your leisure. When you make out an order, send it to us and we will do the rest. It will be regarded as a favor from you, and be appreciated accordingly.

**Toepperwein & Mayfield**
**1322 South Flores St.**
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# FASHION BOOK FREE!

I want to send you my handsome new book showing hundreds of latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

## HOW I DO IT.

I publish the **FARMER'S CALL, a weekly** paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for Women folks, is its fashions in which I show the **5c patterns.** Let me help you to save money.

## MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week** (over 1000 pages) **for one year** and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts because I buy them by the thousand and don't make any profit. I don't want the profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY!

**JOHN M. STAHL,** Dept. G, **QUINCY, ILL.**

# Flower Language Post Cards

**A series of 12 beautiful cards**

# FREE TO YOU

DO you know the language the flowers talk? Here is a wonderful series of twelve beautiful Flower Language Post Cards that I will send to you absolutely free. Only send me ten cents for a six month's trial subscription to my big 24-page journal, THE GLEANER, which is of interest to every member of the family, and I will send you all twelve of these beautiful cards absolutely free as a present. Each card portrays a different cluster of life colored flowers arranged in artistic designs reproduced from paintings by J. Leslie Melville. Each card has a beautiful poem written by C. Prest n Wynne, revealing the language of the flowers in verse. Think of it,

## 12 Beautiful Post Cards

and THE GLEANER for six months on trial for only 10 cents and REMEMBER that if you will write me at once I have a *surprise for you.* Don't forget to ask about it. Don't lay this down and say "I'll send for these tomorrow;" WRITE RIGHT NOW.

**G. H. SLOCUM, Publisher**
**904 Majestic Bldg. Detroit, Mich.**

## A YEAR'S WORK IN AN

**Paper bound OUT-APIARY By Doolittle**

If you run an out-apiary, or intend to have one, this book will be invaluable to you. Costs only 50 cents postpaid. Order now of

THE A. I. ROOT COMPANY, MEDINA, OHIO

I am still offering the best quality of

**Bee-keeping Supplies for Least Money**

Send list of goods wanted for best prices, which will please you. Italian bees for sale; also Barred Plymouth Rock and White Wyandotte Cockerels, $1.00 each. Catalog ready January 1st. Send for it.

**H. S. DUBY, - ST. ANNE, - ILLINOIS**

# BEE-SUPPLIES FOR SEASON OF 1909

Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **bee-supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **bee-supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

Being manufacturers we buy lumber to advantage, have lowest freight rates, and sell on manufacturers' profit basis. Let us quote you prices. Prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY CO., 123 Nicollet Island, Minneapolis, Minn.**

Oldest Bee-paper in America

# This Coupon Worth 35 cents

Now in its 48th Year

(*New Subscribers Only*)

*Name* .....

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If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

**AMERICAN BEE JOURNAL**

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

**It Will Increase Your Honey-Money**

If you will send us your name and address with 40 cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

**American Bee Journal, 118 West Jackson, Chicago, Illinois**

# Hammer Free!

**With Every Order of Supplies of $5.00 or Over...**

This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. . . . . Made of steel, nickeled.

Four per cent discount off all prices in the catalog.

**FULL LINE OF**

**ROOT'S GOODS**

**No Charge for Drayage**

**John N. Prothero**

**Dubois, .. Pennsylvania**

# You hate a cutter of prices=So do we

The house of Root, for the past 25 years, has sustained prices. Why? On account of QUALITY.

**Our aim is:**

QUALITY . . FIRST
SERVICE . . SECOND
PRICE . . . THIRD

We guarantee QUALITY.

**The A. I. Root Co.**

Syracuse, = = New York

The

# Barteldes Seed Co.

**of DENVER**

**Ask Western Bee-keepers to Remember**

that their store is ROOT'S headquarters in the great Rocky Mountain region of which Denver is the hub. No need to send east for any thing in the bee-line. Large orders are just what we want and can fill. Small orders are very acceptable, and we take every care with them. This is the best time to make out an order, both for us and the customer. Do not delay till spring. Get in the habit of sending your order for bee-supplies here. It saves you both time and money, and stimulates us.

*To All Bee-keepers a Merry Christmas.*

**THE BARTELDES SEED COMPANY**

**1521-1525 Fifteenth Street**

**DENVER, COLO.**

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**des pays de langue Francaise**
**Nous vous informons que**

**L'Apiculture Nouvelle**

Revue mensuelle illustree,

est tiree de

**Gleanings in Bee Culture**

augmentee et completee par des collaborateurs Europeens, reconnus comme Apiculteurs eminents.

L'abonnement d'un an est envoye franco pour tous pays de l'Union Postale, contre l'envoi par mandat poste de frs. 6.50 ou $1.30.

Un numero specimen, ainsi que notre catalogue francais de tous les articles de la

**A. I. ROOT CO.**

est envoye gratuitement sur simple demande, adressee a

**Emile Bondonneau,**

Agent General pour l'Europe et les Colonies

**de la A. I. ROOT CO.,**

**142 Faubourg Saint Denis 142, Paris (10e), France.**

# TEXAS SEED and FLORAL CO.

Carry "ROOT QUALITY"

## BEE HIVES and SUPPLIES in STOCK

**at DALLAS, for immediate shipment**

### Bee-keepers' Supplies

Write for catalog of these goods, or order from Root's catalog. Factory prices F. O. B. Dallas. Bee-keepers in this territory will no doubt find it very convenient and exceedingly advantageous to have goods shipped from Dallas, thereby saving some time and freight.

### Beeswax and Honey

We buy beeswax, and sell honey on commission. Mail small sample with quotations.

### Field and Garden Seeds

Sweet clover is considered excellent for bee pasturage; choice clover seed in stock. Illustrated catalog, describing the best field and garden seeds for the South, mailed on request.

### Poultry-supplies

If you raise chickens, write for special catalog of Poultry-supplies, of which we carry the largest and most complete line in the South.

# TEXAS SEED and FLORAL CO.

**DALLAS, TEXAS**

TRADE MARK

# CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

## Honey and Wax for Sale

For Sale.—50 cases of raspberry-basswood blend of extracted honey; two *new* 60-lb. cans to the case, f. o. b. Boyne Falls, Mich., where our north bees are located, at only 9 cents per lb., left on the hives until August before extracting, then nothing but all seasoned honey was put into this grade. The unsealed combs were extracted by themselves, and went to the baker. By this mode of handling there is nothing on the market to compare with this stock, and the price is only a little above the ordinary for this rich, delicious, ripe stock. Many pages could be filled with testimonials of my superior stock of extracted honey, but I have room for only one, the last one in:

West Seneca, N. Y., Dec. 2, 1908.

*E. D. Townsend, Remus, Mich.*

Dear Sir:—The honey arrived O. K. It is the finest I ever tasted. Yours truly, F. W. Hall.

I can furnish circular and sample of this honey for the asking.

E. D. Townsend, Remus, Mich.

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For Sale.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 8c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.

Leonard S. Griggs, 711 Avon St., Flint, Mich.

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Raspberry Honey, left on the hives until thoroughly ripened; thick, rich, delicious; put up in new 60-lb. tin cans; $6.25 for one can; two or more cans at $6.00 per can. Sample ten cents, and the ten cents may apply on the first order.

W. Z. Hutchinson, Flint, Mich.

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For Sale.—Buckwheat, amber, No. 2 white comb, $2.50 per case of 24 sections; unfinished and candied comb, $2.00 per case; amber extracted (¾ clover), two sixty-pound cans to case, at 8 cts. Quirin-the-Queen-Breeder, Bellevue, O.

---

For Sale.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.

J. P. Moore, Queen-breeder, Morgan, Ky.

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For Sale.—I have some extracted honey, well-ripened, fine, clover and basswood, in new five-gallon round cans, at $5.50 a can; sample free; delivered f. o. b. cars here; ought to suit anybody. Mathilde Candler, Cassville, Wis.

---

For Sale.—Clover, amber, and buckwheat extracted honey. Table quality. Write for prices, stating your needs.

C. J. Baldridge, Homestead Farm, Kendaia, N. Y.

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For Sale.—Choice white-clover extracted honey, in new 60-lb. cans, or any shape desired. Ripened on the hives and guaranteed strictly pure. Sample free J. F. Moore, Tiffin, O.

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For Sale.—Fine extracted white-clover honey; also light amber fall honey, put up in barrels, 60-lb. and 10-lb. cans. Write for prices. Dadant & Sons, Hamilton, Illinois.

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For Sale.—1000 gallons of extracted white-clover honey in 60-lb. cans, two to a case, at 8 cts. per lb. by the case, or for the entire crop f. o. b. cars here. Adam Bodenschatz, Lemont, Ill.

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For Sale.—Honey by the barrel or case—extracted and comb; a bargain in honey. Write now.

John W. Johnson, Box 134, Canton, Mo.

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For Sale.—About 2000 lbs. of fine comb honey, mostly smartweed and Spanish needle; extra nice.

John A. Thornton, Ursa, Ill.

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For Sale.—Eight tons of extracted alfalfa honey, perfectly ripened, 7½ cts. per lb. V. V. Dexter, North Yakima, Wash.

---

For Sale.—Buckwheat extracted honey, 160-lb. kegs at 6½ cts.; 60-lb. tins at 7. J. I. Parent, Ballston Spa, N. Y. Rt. 2.

---

For Sale.—2000 lbs. No. 1 clover and basswood extracted honey in 60-lb. cans. Frank Montefelt, Juda, Wis.

---

For Sale.—2000 lbs. white-clover extracted honey, 8 cts. in barrels; 8½ in 60-lb. cans. G. Routzahn, Biglerville, Pa.

---

For Sale.—Best quality alfalfa in cases of two 60-lb. cans, $8.40 per case, f. o. b. here. H. E. Crowther, Parma, Ida.

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For Sale.—Fine buckwheat honey in new cans. Send for sample and prices. Earl Rulison, Rt. 1, Amsterdam, N. Y.

## Honey and Wax Wanted

Wanted.—Comb, extracted honey, and beeswax. State price, kind, and quantity.

R. A. Burnett, 199 South Water Street, Chicago, Ill.

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Wanted.—25 tons of fancy comb honey. Write, stating particulars, to C. M. Church, New Kensington, Pa.

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Wanted.—Choice extracted basswood or clover honey. Prompt payment on receipt. Write full particulars, with sample. H. C. Ahlers, West Bend, Wis.

## For Sale

For Sale.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.

W. P. Smith, Penn, Miss.

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200 Bee Hives at a sacrifice; practically as good as new; set up and well painted, ready for the bees. Shipped to take K. D. rate. Regular Dovetailed and Langstroth, $1.00 each. Langstroth-Simplicity and plain joint hives, 75 cts. each; four-frame automatic extractor, $17.00. 60-lb. can honey, $5.95.

L. M. Gulden, Osakis, Minn.

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For Sale.—One model F. Ford two-cylinder 16-horse-power five-passenger automobile. The rear seat is easily taken off, and we have used this car for delivering honey and for visiting our apiaries—a fine car, good as new. Write us for price and information. John A. Thornton, Ursa, Ill.

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For Sale.—One Pineland 300-egg incubator, cost $50.00, in perfect working order; 100 clear-pine ⅞-inch egg-cases, planed and painted; heavy berry-crates, painted; or will exchange for bee-hives, crates, etc., foot or power saw, or any thing useful to me. L. C. Judson, Franklin, N. Y. R. D.

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For Sale.—Female Scotch Collie, one year old; thoroughbred, affectionate and obedient; well marked, and a fine individual. Write for price and pedigree. C. A. Wurth, Fayetteville, Ark.

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For Sale.—Barnes foot-power circular saw, almost new, little used, with five circular saws and one emery wheel one inch thick; bargain at $20.00.

Fred. Holtke, Southold, L. I., N. Y.

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For Sale.—Hound pups 3 months old, bred for real business, or will exchange for double 12-gauge or repeating shotgun in good condition. E. L. Haskins, Newstate, Mass.

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For Sale.—Nearly new Oliver typewriter; No. 5, latest model, perfect condition. L. H. Randall, Medina, Ohio.

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For Sale.—Revolver; double-action, safety hammerless, 38 caliber, perfect condition, cheap. J. E. Mason, Medina, O.

## Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.

Stapler's, 412-414 Ferry St., Pittsburgh, Pa.

## Bees and Queens

FOR SALE.—Moore's strain and golden Italian queens, untested, $1.00; six, $4.00; twelve, $7.00. Carniolan, Banat, and Caucasian queens, select, $1.00; six, $5.00. Tested, any kind, $1.25; six, $6.00. Choice breeding queens, $3.00 each. Circular free. W. H. RAILS, Orange, Cal.

FOR SALE.—Italian bees and queens now ready. Untested, $1.00; tested, $1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.
N. V. LONG, Biscoe, N. C.

FOR SALE.—1000 colonies of bees with fixtures; run principally for extracted honey. DR. GEO. D. MITCHELL & CO., 340 Fourth Street, Ogden, Utah.

FOR SALE.—Apiaries and queen-rearing business in Southern California. Full particulars on request to
E. M. GRAVES, Iamosa, San Bernardino Co., Cal.

You can win out if you send a postal for my Circular of Italian and Caucasian queens. Nothing like it. A. D. D. WOOD, Box 61, Lansing, Mich.

FOR SALE.—100 colonies of Italian bees, with outfit and fixtures. Price reasonable. CLYDE CLEMENS, Crawfordsville, Iowa.

## Wants and Exchanges

WANTED.—Bees for second-hand hives, thoroughly cleaned by steam; size 16x16; 10½ inches deep, ten-frame; suitable for the production of comb or extracted honey. Many of these hives are almost new. Would consider sending a carload to some responsible Texas apiarist in good locality for increase to fill on shares.
THOS. J. STANLEY, Manzanola, Otero Co. Colorado.

WANTED.—1000 extracting-combs, small steam-engine, and bee-supplies; also have a fine set of watchmaker's tools and material; will trade or sell. Spit it out quick.
JOHN H. KOONTZ, Stewardson, Ill.

WANTED.—To buy a home and apiary in a good honey location, free from bee diseases, with good fishing and drinking water. Western States preferred. Give price and terms in first letter. Address TRANSIENT, Sunny Side, Cal.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—To exchange berry-plants, the best varieties that grow, for foundation and bee-supplies.
JOHN D. ANTRIM, Burlington, N. J.

WANTED.—400 colonies of bees in California or Texas.
DR. GEO. D. MITCHELL & CO., 340 Fourth Street, Ogden, Utah.

WANTED.—A foot-power saw in good condition, for spot cash.
F. W. BUCK, Muncy Valley, Sullivan Co., Pa.

WANTED.—To buy an apiary in the South. State lowest cash price. WM. CARDER, Ludlow, Ky.

WANTED.—An apiary on shares in California.
P. C. SPRINGBORG, Thermal, Cal.

WANTED.—50 chaff hives for L. frames. State conditions and price. R. S. MARSHALL, Tribes Hill, N. Y.

## Help Wanted

WANTED.—Capable man 30 to 40 years of age, married, to take charge of small farm in Ohio. State experience, salary wanted, date could begin, and give names of references. Address JOHN SMITH, Gleanings in Bee Culture, Medina, O.

WANTED.—A hustling helper in the bee and honey business; preferably one who would have some money to invest with a view to securing an interest in a well-established and paying business. B. WALKER, Clyde, Ill.

WANTED.—Three experienced apiarists. One must understand queen-rearing; 5 yards, 1100 colonies. State age, nationality, and salary expected. R. M. SPENCER, Nordhoff, Cal.

## Situation Wanted.

WANTED.—Situation. I have put in 14 straight years of up-to-date bee culture; am able to take charge of large interests; am 36 years old, strictly temperate; wish to work on shares if possible. Address A. LANZ, Fairmont, Los Angeles Co., Cal.

WANTED.—Position with bee-man for 1909 by a young man 33 years of age; honest and upright; no use for tobacco or liquor; have worked one season with a bee-man. Distance is no objection; or I should like to buy out some bee-man or go halves.
CARL ERIKSON, St. Ansgar, Iowa.

WANTED.—To correspond with California bee-keepers who could use an old man who is well posted in the bee business. I have had long experience in large apiaries.
J. LAWRENCE, Box 120, Soldiers' Home, Los Ang. Co., Cal.

## Post Cards.

Eight beautiful Christmas or New Year's Cards mailed for 15c; 13 for 25c. Also birthday, comic, or miscellaneous cards. Say what you wish, and whether for adults or children.
M. T. WRIGHT, Medina, Ohio.

## Bee-keepers' Directory

I no longer club a queen with GLEANINGS.
W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall.
A. W. YATES, 3 Chapman St., Hartford, Ct.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.
D. COOLEY, Kendall, Mich.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to
T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready
W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catolog and circulars free.
GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, $1.00 each. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. Send for price list. Twenty-five years' experience.
F. J. WARDELL, Uhrichsville, O.

Breeding queens of pure Caucasian and Carniolan races—price $3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

## Real Estate for Bee-keepers

Pecos Valley of New Mexico lands are coining $50 to $65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey* for the *bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. Love, General Agent, Artesia, N. M.

For Sale.—Five or ten acres in the beautiful town of Orlando, Fla. Will sell very cheap, or exchange for Canadian property. C. H. Lewis,
85 Victoria Ave. N., Hamilton, Ont., Can.

For Sale.—In Franklin Co , Tenn., 87 acres of land 3 miles from railroad; 40 acres cleared, the rest in timber. For terms apply to W. T. Lyons, Decherd, Tenn.

For Sale.—32 acres land, orange-grove, apiary and chicken ranch. J. W. Bannehr, Bradentown, Fla.


# Special Notices

By Our Business Manager

Subscribers who want their friends to see and have a copy of our Christmas issue may refer them to their local news-stand where this issue will be on sale.

### MARKETING HONEY.

The problems of the bee-keeper have not all been solved when he has learned to secure each year the largest crop of honey possible and put it up in the most marketable shape, for it has been apparent that large losses are sustained by some of the most capable honey-producers when they come to market the product of their apiary, the entire honey crop of the season.

One of the chief causes of the losses referred to has been the shipping of large consignments of honey by bee-keepers to unreliable dealers. Another is the shipping to commission houses who have no regular trade in honey, and who are, therefore, unfamiliar with its proper care and do not know where or when to put it on the market to the best advantage. For a number of years, though not so frequently of late as was the case some five years and more ago, we received, every fall, reports from bee-keepers who had been swindled out of large shipments. To avoid this we have endeavored to give the announcements of the most reliable honey-dealers in our columns regularly, and in this way head off unreliable people who solicit shipments of honey from unsuspecting bee-keepers. We take pleasure in calling particular attention to the advertisers whose announcements are found in this issue, as they represent the large honey-dealers throughout the country. Do not make the mistake of shipping to your nearest city, as it may be found that some other market may be better. On the other hand, inquire about several markets, and you may find it an advantage, after getting a satisfactory outlet with a certain dealer, to stay with him year after year, even though another market may be a little more tempting occasionally. If you want to buy honey you should certainly get prices from those dealers who advertise honey for sale before making your purchase. They can save you money in many instances. Preserve these advertisements for frequent reference.

### JAPANESE BUCKWHEAT SEED.

We have secured a nice lot of seed of the Japanese buckwheat, grown for us the past summer. As it is out of season we are willing to make quite a concession in price to reduce stock at present. For orders placed before January 15th, accompanied by payment, we will furnish seed in new bags, included without extra charge. One bushel, $1.25; two bushels, $2.25; ten bushels, $10.50.

### SWEET-CLOVER SEED.

We have on hand a good stock of choice sweet-clover seed, both white and yellow. Of the white we have both unhulled and hulled seed, and of the yellow we have at present about 250 pounds hulled, and have engaged a lot of unhulled yellow which is expected to arrive soon. It is usually difficult to supply the entire demand of unhulled white and yellow, and we suggest immediate orders to be sure of getting from our present stock. Prices are as follows:

| In lots of . . | 1 lb. | 10 lbs. | 25 lbs. | 100 lbs. |
|---|---|---|---|---|
| Unhulled white, per pound, | $ .15 | $ .13 | $ .12 | $ .11 |
| Hulled " " " | .22 | .20 | .19 | .18 |
| Unhulled yellow " " | .18 | .16 | .15 | .14 |
| Hulled " " " | .25 | .23 | .22 | .21 |

The prices are all subject to market changes.

### SECOND-HAND COMB-FOUNDATION MILLS.

We have to offer the following list of comb-foundation mills, which have been used but are in good condition to use, by one who wants to make his own foundation and is not particular about slight defects in the cell faces. Samples from these machines will be mailed to those interested on application.

No. 075.—2x9-inch round-cell, medium-brood mill in fair condition. This is a very old pattern, made about thirty years ago; has been kept in good shape. Price $10.00.

No. 079.—2½x6 hex. cell extra-thin-super mill in good condition; bargain at $12.

No. 084.—2x10 round-cell medium-brood mill in fair condition. Price $12.00.

No. 085 —2½x6 hex. cell thin-super mill in very good condition. Price $12.00.

No. 086.—2½x6 hex. cell extra-thin-super mill in excellent condition. Price $15.00.

No. 092.—2½x6 hex. cell extra-thin-super mill in extra good condition. Price $15.00.

No. 0100.—2½x6 hex. cell extra-thin-super mill in good condition. Price $10.00.

No. 0102.—2½x6 hex. cell extra-thin super mill in good condition. Price $10.00.

No. 0103.—2½x10 hex. cell medium-brood mill in fine condition. Price $18.00.

No. 0104.—2½x10 hex. cell medium-brood mill in good condition. Price $16.00.

No. 0105.—2½x10 hex. cell light-brood mill in fair condition. Price $10.00.

### HONEY-PAMPHLETS.

To answer the numerous inquiries we are receiving regarding prices on the pamphlet entitled Food Value of Honey, by Dr. C. C. Miller, we quote the following:

Prices: 10, 5 cts.; 100, 20 cts.; 500, 75 cts., all postpaid; 1000, 75 cts.; 5000, $3.50; 10,000, $6.50. If you desire your own name and address on the first page, add $1.00 extra to the above prices. Should you desire your own advertising card on the last page instead of our own, the price will be $1.50 more; or $2.50 extra for your name and address on the front page, and your advertising card on the last page. Already folded, the price will be 50 cts. per 1000 extra.

## Convention Notices.

The University of Tennessee, Knoxville, again announces a course in bee-keeping, March 1—13, conducted by Prof. G. M. Bentley. The subjects are, study of the habits and development of the honey-bee; types of bees; queen-rearing; methods for improving run-down apiaries; diseases and parasites, with remedies. management of an apiary; types of hives; the out-apiary; selection and culture of bee-plants. For particulars, address Prof. Bentley.

### BEE-KEEPERS' ATTENTION.

The annual meeting of the Missouri State Bee-keepers' Association will convene at the county court-room of Columbia, Mo., Jan. 6, 1909, at 9 A. M. and will remain in session for two days.

All persons interested in bee-keeping are invited to attend the meetings.

An interesting program will be prepared that all bee-keepers present may be benefited.

Our meeting takes place during Farmers' Week, when also the Horticultural Board, the Live-stock Breeders, the Dairymen, Sheep-breeders, Swine Growers and Breeders, Highway Engineers, and Housekeepers' Conference will meet, and the members of the State Board of Agriculture will be present at Columbia.

Accommodation can be had at the hotels, or at reasonable rates at private boarding-houses.

Robt. A. Holekamp, Sec.,
4263 Virginia Ave., St. Louis, Mo.

The Northern California Bee-keepers' Association will hold its third annual convention on the 21st and 22d of December, at Pioneer Hall, Sacremento Seventh St., between J and K. This association is composed entirely of honey-producers; was organized by them and for their benefit alone. It aims to help those with a few colonies as well as those whose colonies number into the hundreds.

The benefits to be obtained from attending these meetings are many.

I. In a social way.

Here we meet our old friends and renew friendships; also meet many new members.

II. In obtaining knowledge pertaining to our chosen pursuit.

At these meetings there are also many practical bee-keepers who have made money keeping bees and are ready to talk on any subject pertaining to the industry, telling of their success and failures of past years, and no member can help being benefited.

F. J. Lewis, President.
B. B. Hogaboom, Sec.-Mgr.

# Special Notices by A. I. Root

MY 69TH BIRTHDAY.

To-day, Dec. 9, I am 69 years old, and thanking God that our five children and eight grandchildren are all alive and well. The last arrival, a week ago to-day, is especially alive when the time comes for her "ration." Mrs. Root and I expect to leave for Florida just as soon as I can get in my vote, December 15, to make Medina Co. dry.

THE WRIGHT BROTHERS UP TO DATE.

If I am correctly informed, Orville Wright has so far recovered that he has left his home in Dayton, Ohio, and is now on his way to join his brother in France; and the papers tell us that his brother, Wilbur Wright, now has hopes that he can construct a flying-machine that will fly without a motor. I can not understand what he means by this unless he has reason to think it possible to find ascending currents that will take him up into the air, and that, when once aloft, he can guide his ship so as to find other ascending currents that will enable him to fly as birds do for hours without flapping a wing. Perhaps this is only a newspaper fiction; but there may be a kernel of truth in it after all.

TWO SWARMS IN ONE DAY.

"Well, what of it?" you may ask. Two swarms of bees in one day is certainly nothing remarkable for a bee-keeper with even a small apiary. But these two swarms I have in mind came in December; but even this would be nothing remarkable if it had happened down in Florida; but it was not in Florida, but in Medina, O., on the 2d of December, 1908; and if you will let me explain a little I will tell you why it was an event in the eyes of all Rootville. Mrs. Root had just one sister, the wife of Neighbor H. who used to be a bee-keeper, and write for GLEANINGS. Well, Neighbor H. has a daughter, and this daughter is only about five weeks older than her cousin, Carrie Belle Root, now the wife of Llewellyn W. Boyden. Well, these two cousins each gave birth to a little stranger, and both came to Rootville (strange to tell) on the same day, and only a few hours apart, and, of course, there is great rejoicing. One is a boy, and the other is a girl. The father of the boy is our head bookkeeper, Mr. Neal Kellogg. The father of the girl baby is Mr. Boyden, a younger brother of A. L. Boyden. Mr. L. W. Boyden, as you may remember, has until recently had charge of our house in New York city. Of course you will recall what I have told you, on several other similar occasions, that no colony of bees can be really prosperous unless brood-rearing is going on pretty nearly every month in the year. There must be frequent accessions of young blood to keep up and perpetuate a healthy growth in the parent colony. May God be praised for all his mercies; and may he help us all to remember the responsiblities that rest upon us to train up these little ones in such a way that when they get old enough they will, of their own accord, hold fast to "the straight and narrow path."

WHAT PERIODICALS WILL YOU SUBSCRIBE FOR, FOR 1909?

You may be aware, friends, that we exchange with more than a hundred periodicals of different kinds; and just now I am called on to consider which ones I shall select, from this great array, for reading in my Florida home during the coming winter.

First I want the *Sunday School Times*, because its standard of morals, not only in its reading columns but in its advertisements as well, is higher, it seems to me, than perhaps that of most of the religious periodicals.

Next I want the *Rural New-Yorker*, because it not only also upholds the highest and best morals, but it shows up swindlers, fearlessly and unsparingly, and everybody else who preys on the homes of our land.

Then I want the *Practical Farmer*, because T. B. Terry tells us in it every week how not only to *live* but to live and be happy until we are a hundred years old, *or less*.

Then I want the *Ohio Farmer*, because, while it posts us on every thing belonging to the farm and to farm life, it also puts in tremendous sledge-hammer blows against the American saloon.

Next I want the *Country Gentleman* because it *is* a country gentleman, and dignifies the farmer's calling.

I want also the *Farm Journal*, which, while it holds up righteousness and temperance, as well as agriculture, costs so little that it is almost a shame to be without it.

And there may be still other farm periodicals that may be just as good as the ones I have mentioned, but I am not so well acquainted with them, perhaps because I have not had them, as I have those I have mentioned, all my life.

You may be surprised that I do not enumerate any of the magazines. To tell the truth, dear friends, I have not yet seen a magazine that seems to inculcate on *every page* such a high standard for the home as the periodicals I have mentioned. I have also omitted a great list of religious periodicals, and the principal reason is so many of them accept and continue a class of advertising that would not be accepted by our best farm papers, such as I have mentioned. I do take a daily paper, but I do so under protest. I have written to several of our great city dailies, saying that, when one could be found that rejects whisky advertising, I would use all my influence to get people to subscribe for it.

Among the others, I shall have 25 or 30 poultry-papers. At the present writing I have found only two that are willing to lose some of their advertising by coming out boldly against swindles and frauds. One of these is *Poultry*, published at Peotone, Ills., and the other is the *Petaluma Poultry Journal*, published weekly at Petaluma, Cal.

Of course, I take, and shall always take, the *American Issue*, the exponent of the Anti-saloon League, Columbus, O.

Besides the above I shall take our home papers, the *Medina Gazette* and the Manatee River *Journal*, Bradentown, Fla.

Everybody should subscribe for and help along one or more of the papers published in their own town. If they are not what they ought to be, turn in and *help* the editor make them better.

# KIND WORDS.

We enjoy your Home talks in GLEANINGS. Advice and pointers coming from one who has raised a family, and knows what that means, comes as encouragement to us younger inexperienced fathers and mothers. May your life be spared to continue your part of GLEANINGS. MRS. C. E. CARLSON.

Koekuk, Iowa, Dec. 1.

HELPED TO MAKE THEIR VILLAGE DRY.

I just finished the Home paper, which I have read with much enjoyment for several years, and I sincerely agree with Brother Thatcher in saying you can not write too much. I think your temperance pieces are simply priceless, and it may interest you to know we just voted our little village dry. Your temperance page helped to give us more strength and courage, and I feel in duty bound to tell you this.

Gypsum, Colo., Nov. 6. BIRDIE HOCKETT.

"THE OLD SCHOOL."

*Mr. Root:*—Your circular letter came just as I was starting to the Central Illinois Horticultural meeting. I had a paper before the convention on natural aids of the fruit-grower, and it is needless to say the honey-bee took the first place. I have read GLEANINGS for 18 years, though not a subscriber that long: and of the hundreds of papers and magazines that come to my desk each month, none of them are valued higher than GLEANINGS, and only two others are considered worthy of saving and binding.

Mr. A. I. Root's department is one of the best and most helpful of any similar department I know of, and his articles can not help being beneficial for the up-building of the home life, which, by the way, is the one important thing. He belongs to "the old school" that has not forgotten the golden rule; and I trust he may be spared to continue many years in his excellent work.

Normal, Ill., Nov. 21. A. M. AUGUSTINE.

AN INSPIRATION TO DO GOOD AND BE GOOD.

I should be sorry to lose a single copy of your journal, as everything you write is so good and healthy, especially your notes on home and health. I also thank you from the bottom of my heart for the way you have treated, and the stand you have taken on temperance, on cutting out fake advertisements, patent medicine, etc. May God give you power and strength to continue for many years to come. You don't know the amount of good you are doing. The world seems to be crying out for good *honest* men, for they are so few, and we need them so much in our Sunday-schools, our pulpits, our governments, in every walk of life; and your papers seem to give one an inspiration to be good and do good.

Vancouver, B. C., Nov. 1. GEO. SCHOFIELD.

FROM "COVER TO COVER," COVERS INCLUDED.

I write to return our thanks for your very unexpected kindness in the matter of GLEANINGS. It is always read in this home from cover to cover—when we have it. By the way, the covers are charming themselves.

We have felt the touch of your personality ever since the faraway days in Tabor, Iowa, where our little apiary was laid out on the terraces of our hillside home, after the pattern shown in the A B C and GLEANINGS, and where, into the midst of our discussions of "comb foundation" and "bee-queens," came the call that made us wanderers on the earth. The bees went with us to our first pastorate, where several colonies were stolen one Sunday night. We never moved the bees again; but in spite of the loss by theft they did famously for us those years; and Mr. Bosworth was helped to get into close touch with men by what he could do for them among the bees, helping them "transfer," selling to them and introducing for them Italian queens, and extracting honey for them. He paid $5.00 for his queen.

The only time *I* ever saw you face to face was at Arthur T. Reed's Fouth-of-July meeting at Thompson, O., when you rode out on your wheel to be pretent, and afterward wrote it up for GLEANINGS.

I am not getting old—not at all—but I fear I am getting garrulous—with my pen. MRS. L. A. M. BOSWORTH.

Neosho Falls, Kas., Nov. 23.

Before buying your Comb Foundation, or disposing of your beeswax, be sure to get our prices on wax and foundation, or our prices on working wax into foundation.

We are also in a position to quote you prices on hives, sections, and all other supplies. We give LIBERAL DISCOUNTS during the months of December, January, and February.

**Remember that**

# DADANT'S FOUNDATION

**is the very best that money can buy.**

We always guarantee satisfaction in every way.
LANGSTROTH ON THE HONEY-BEE (new edition), by mail, $1.20.
Send for our prices on Extracted, White-clover, and Amber Fall Honey.

**DADANT & SONS, . . HAMILTON, ILL.**

# FOR OVER 25 YEARS

our make of goods has been acknowledged to be in the lead as regards WORKMANSHIP and MATERIAL.

**Our AIR-SPACED HIVE is a most excellent winter hive,**

and fully as good and convenient for summer management as the single-walled. Same inside dimensions as regular Dovetailed hives; all inside material interchangeable with Dovetailed hives.

**We manufacture full line of BEE-KEEPERS' SUPPLIES.**

FALL AND WINTER DISCOUNTS:
Dec., 4 per cent. Jan., 3 per cent. Feb., 2 per cent. Mar., 1 per cent.

Catalog free.

**W. T. FALCONER MFG. CO., Jamestown, N.Y.**

It Costs No More to

# BUY DIRECT

# CALIFORNIA FRUIT

## DRIED AND CANNED

**HONEY**
(ORANGE—SAGE)

**NUTS**
(WALNUTS—ALMONDS)

Try it once and you will never buy any other way.

# WE PAY THE FREIGHT

TO ANY RAILWAY STATION IN THE UNITED STATES.

**DRIED FRUIT** Put up in special 50-pound assortments, packed in two-pound cartons or one kind in a box, a most convenient form for small families or where several families club together.

## SPECIAL DRIED-FRUIT ASSORTMENT

**Number 1, $6.00**
18 lbs. Prunes, large size
10 lbs. Peaches
10 lbs. Apricots
4 lbs. Loose Muscatel Raisins
4 lbs. Seeded Muscatel Raisins
4 lbs. Seedless Sultana Raisins

**Number 2, $6.50**
24 lbs. Prunes, large
14 lbs. Peaches
12 lbs. Apricots

**Number 3, $6.00**
6 lbs. Seeded Muscatel Raisins
10 lbs. Seedless Sultana Raisins
10 lbs. Loose Muscatel Raisins
8 lbs. Prunes, large size
8 lbs. Peaches
8 lbs. Apricots

## CANNED-FRUIT ASSORTMENT

**$4.75 Case—2 doz.**

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